

JACARANDA

HUMANITIES AND SOCIAL SCIENCES

FOR WESTERN AUSTRALIA

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It is recommended that teachers should first preview resources on Indigenous topics in relation to their suitability for the class level or situation. It is also suggested that Indigenous parents or community members be invited to help assess the resources to be shown to Indigenous children. At all times the guidelines laid down by the relevant education authorities should be followed.



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OVERVIEW

The *Jacaranda Humanities and Social Sciences* series has been created specifically for the Western Australian Curriculum. The series covers concepts related to human behaviour and interaction within social, cultural, environmental, economic and political contexts. The suite of resources in the *Humanities and Social Sciences* series is designed to enrich the learning experience and improve learning outcomes for all students.

The *Humanities and Social Sciences* series is designed to cater for students of all abilities: no student is left behind and none is held back. The series is written with the specific purpose of helping students deeply understand humanities and social science concepts. The content is organised around a number of features, in both print and online through Jacaranda's *learnON* platform, to allow for seamless sequencing through material to scaffold every student's learning.

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UNIT 3 WATER IN THE WORLD

TOPIC 8

Water as a resource

8.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your *learnON* title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

8.1.1 Introduction

Have you ever stopped to think about the resources you need to survive every day? Fortunately, the Earth supplies us with the natural resources we need for our food, shelter, clothing, and energy for our homes and factories. These resources include water, fossil fuels and mineral deposits. However, access to these supplies is not distributed equally around the planet, and attitudes towards them may differ or change over time. As the global population increases, great damage is being done to the environment as a result of using these resources. Moreover, we need to carefully manage our use of them to ensure that these resources are available for use in the future.

Starter questions

1. List some natural resources that are used by your family on a daily basis.
2. List some of the different ways water is used in our lives.
3. Look around your classroom and list items made from natural resources. In some cases, you may need to explain the links between the subjects and the resources used to make them.
4. How can the natural resources that you use harm the environment?
5. Discuss how your family tries to reduce waste and protect resources.

Pacific Islanders use traditional methods to fish sustainably.

Plastic bottles are made from fossil fuels.

Of the 150 000 metric tons of gold discovered to date, 65 per cent is found in just four countries.

About 10 million passenger cars are manufactured each year in the United States. Natural resources are used to make these 10 million cars each year.

Did you know? If you could grow enough wheat to feed the world, you would need to plant 100 million hectares of wheat.

Natural forest area is reduced by 60 000 square kilometres per year around the globe (an area about the size of Ireland).

TOPIC 8 Water as a resource 125

FIGURE 2 Bar scanners have made work easier for shop assistants.

FIGURE 3 Robots are increasingly replacing people on the assembly line, taking over tasks that used to be performed manually.

Starter questions

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your *learnON* title at www.jacplus.com.au. Note: Question numbers may vary slightly.

1. Make a list of ten jobs that would need to be performed on a daily basis in order for you to attend school. For each one, explain how it affects you (for example, a baker would need to bake bread for you to eat your toast in the morning).
2. Examine Figure 3. Technology has affected how cars are produced. Can you think of any other types of product or work processes that have changed due to technology? Give examples.
3. If people around you didn't work, it would make no difference to your life. Discuss.

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6.2 What is work?

6.2.1 Why we work

We all dream of being wealthy and able to buy the things we want, when we want them. For most of us, this means we get up and go to work each day to earn a wage or salary.

6.2.2 Labour, then and now

In early times, people performed activities such as hunting for food, gathering berries, planting seeds and picking fruit, all of which required manual labour. Today, labour requires the use of modern technology and an education at school, university or TAFE. The modern labour force includes scientists, graphic designers.

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12.12 SkillBuilder: Creating and analysing overlay maps

WHAT ARE OVERLAY MAPS?

An overlay map usually consists of two or more maps of the same area. A base map is overlaid with a transparent overlay, showing different information. Overlay maps allow users to see the relationships between the information on two or more maps.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a bank of questions to help you apply the skill and to check your understanding.

learnON RESOURCES — ONLINE ONLY

Watch this eLesson: Creating and analysing overlay maps (16:45)

Try out this interactivity: Creating and analysing overlay maps (16:31:41)

12.13 How could my community be made more liveable?

12.13.1 Transport strategies

People in towns and cities are always looking for strategies to improve their living conditions. A community is made up of people from a range of age groups, a number of different land uses, a range of needs and a variety of interests. Ideas and plans for improvements may be overarching or targeted.

The movement of people within and between neighbourhoods is an important issue in towns and cities. The humble bicycle is now seen as a way of increasing mobility, reducing traffic congestion, reducing air pollution and boosting health. Bicycle tracks

FIGURE 1 Recreational riding along a trail mainly designed for bicycles

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UNIT 6 DEPTH STUDY 2: INVESTIGATING ONE ANCIENT SOCIETY (EGYPT, GREECE, ROME, INDIA, CHINA)

TOPIC 17

Ancient Greece

17.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your *learnON* title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

17.1.1 Links with our times

In 2004 the Summer Olympic Games, officially known as the XXVIII Olympiad (28th Olympiad), were held in Athens, the capital of modern Greece. The image shows the Australian Olympic team at the opening ceremony of the Athens Olympics. Its motto, *Welcome Home*, was chosen because Greece was the birthplace of the Olympics. According to Greek tradition, the first ancient Greek Olympics were staged in 776 BCE. As we will see in this topic, the Olympics are far from being our only legacy from Greece. Greeks have settled in many places, bringing their culture with them. More people of Greek descent live in Melbourne than in any city except Athens. Much more importantly, many ancient Greek ideas were handed down to the present through other cultures. Ancient Greek influences are all around us.

Big questions

As you work through this topic, look for information that will help you to answer these questions:

1. How did the environment of ancient Greece influence its civilisation?
2. How were ancient Greek societies organised and ruled?
3. What were the main beliefs, values and cultural achievements of the ancient Greeks?
4. What conflicts took place within Greece and between Greek city-states and other societies?
5. What can ancient sources tell us about life in ancient Greece?
6. What have been the legacies of ancient Greece?

Starter questions

1. What can you see in the picture from the Athens 2004 Olympics that would not have existed in the ancient Greek Olympics?
2. In what ways do you think immigrants from Greece have influenced Australia?
3. The ancient Greeks were very interested in geometry. Can you think of one of their ideas that we still use in geometry?
4. What do you think 'democracy' means?

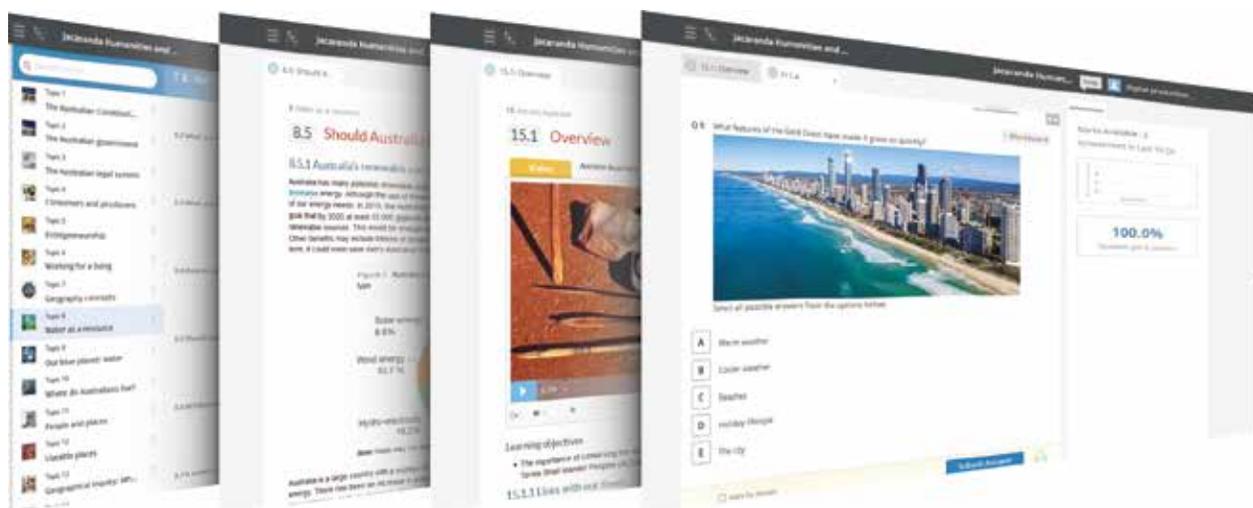
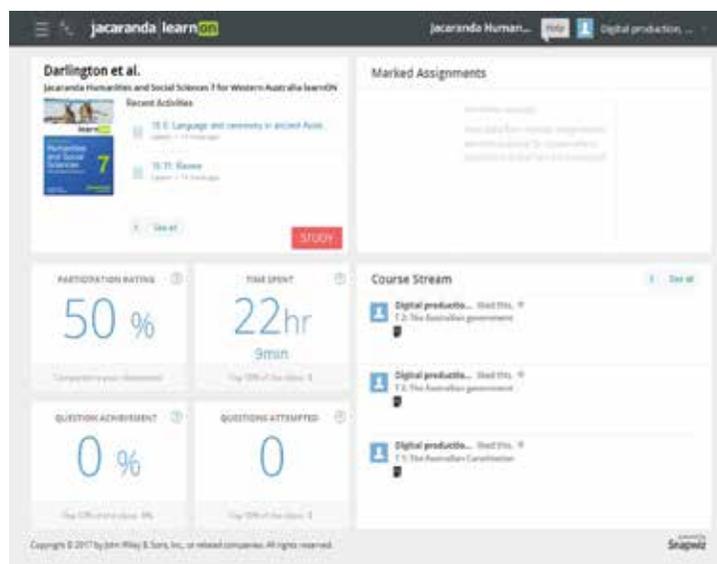
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The *Humanities and Social Sciences* series contains a free activation code for *learnON* (please see instructions on the inside front cover), so students and teachers can take advantage of the benefits of both print and digital, and see how *learnON* enhances their digital learning and teaching journey.

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- hundreds of videos and interactivities to bring concepts to life
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- immediate feedback for students
- immediate insight into student progress and performance for teachers
- dashboards to track progress
- collaboration in real time through class discussions
- comprehensive summaries for each topic
- code puzzles and dynamic interactivities to help students engage with and work through challenging concepts
- formative and summative assessments
- and much more.



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UNIT 1

DESIGNING OUR POLITICAL AND LEGAL SYSTEM

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TOPIC 1

The Australian Constitution

1.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

1.1.1 Rules for governing

Can you imagine playing your favourite sport without any rules? All sports have rules so that the players know what is allowed on the field of play, and what is not. Most sports also have rules for the conduct of competition between different teams, with progress ladders and rules for the conduct of finals series. All participating clubs are expected to abide by these rules. We need rules for the government of our nation just as we need rules for playing sport.

The way we are governed in Australia also has rules. Governments, parliaments and the law courts are all expected to follow these rules. Such rules outline the powers of those governing us, and what they are and are not permitted to do in exercising those powers. This set of rules is known as our Constitution.

FIGURE 1 Australia's coat of arms



FIGURE 2 Parliament house in Canberra. The powers of the federal parliament are determined by the Australian Constitution.



Starter questions

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

1. Draw up a list of three powers that you think a government should have for the benefit of the community. (For example, the government should have the power to fine people for speeding in their cars. This helps to keep all road users safe.)
2. Draw up a list of three restrictions that you think should be placed on government to protect the rights and freedoms of Australians. (For example, the government should not have the power to imprison people without a fair trial.)
3. The Australian Constitution requires elections for the parliament every three years. What do you think are the reasons for this requirement? What problems could arise if people were only required to vote every ten years?
4. Imagine you are launching a new social media platform (similar to Facebook). Brainstorm a set of rules for this platform that would allow the maximum amount of information to be shared but would still respect the individual rights and privacy of users. (You could start by identifying some of the problems with existing social media.)

INQUIRY SEQUENCE

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 Watch this eLesson: The Australian Constitution (eles-2076)

1.2 Why do we have a constitution?

1.2.1 How did we get our constitution?

During the 1890s, there was a lot of support for the idea of joining the six colonies on the Australian continent to create one united country. This united country of Australia would need a new national government, as well as retaining the existing parliaments to make laws for their respective states. Representatives of the different colonies met on several occasions to create a set of rules that would allow for a division of powers between these parliaments.

After the gold rush era of the 1850s, the population of all six Australian colonies grew rapidly. During the 1880s, the population rose from just over 2 million to around 3 million. By 1890, over 60 per cent of the population had been born locally (that is, in the Australian colonies rather than overseas). Large numbers of these people felt a greater loyalty to the colonies of their birth than to the countries of their parents' birth. It was not surprising that many saw the unification of the colonies into one country — the Commonwealth of Australia — as a desirable idea.

During the 1890s, representatives of the different colonies held meetings to develop a **constitution**. These men are often referred to as the 'founding fathers' of our Constitution. (No women took part in the process!) None of the colonial governments wanted to hand over all their law-making powers to a central government, so they had to adopt a structure that would allow these powers to be shared.

When a group of states decide to join together and hand over some of their powers to central government, this arrangement is known as a **federation**. In this arrangement, it is important that everyone understands which powers are retained by the states and which powers will be taken over by the central government.

FIGURE 1 Representatives of the colonies met on a number of occasions to draft a constitution for the newly unified Australia.



This was a major reason for the development of the Australian Constitution. It allowed the state parliaments to keep some law-making powers for issues that could be managed at the state level. At the same time, it gave the central parliament the power to make laws of national importance. For example, before federation, each colony had its own currency, army and navy. With federation, it made sense to have one consistent currency and a national defence force.

By 1898 the main principles of the new Constitution had been agreed to, and each of the colonies held a **referendum** to allow their citizens to vote on whether they wished to join this new federated Australia. By 1900, a majority in all six colonies had voted in favour, and the new Constitution was passed into law by the British Parliament. The newly created Commonwealth of Australia came into being on 1 January 1901. Elections for the national parliament were held in March of that year, and the newly elected parliament was opened in Melbourne's Exhibition Building on 9 May 1901. Federal Parliament then met in Victoria's Parliament House until 1927, when it was transferred to the new national capital of Canberra.

FIGURE 2 *Opening of First Federal Parliament by HRH the Duke of Cornwall & York, by Charles Nuttall, 1901*



1.2.2 Why have a constitution?

Not all countries in the world have a written constitution such as Australia's. The United States of America is one country that, like Australia, is a federation guided by a written constitution. However, some countries that are similar to Australia in many ways have no single constitutional document. Australia, Canada and New Zealand all recognise the British monarch as their head of state and have similar systems of government, but neither Canada nor New Zealand has a written constitution. Their rules of government are contained in a number of different pieces of **legislation**.

Advantages of having a constitution

1. A constitution provides a system of rules that government is required to follow. In Australia it means that laws have to be made by a democratically elected parliament, not by any individual.
2. A written constitution can include some rights and freedoms to be enjoyed by all citizens of the country. For example, the Australian Constitution guarantees freedom of religion.
3. In Australia, the Constitution allows for a clear distinction between the powers of the federal parliament and the powers of the state parliaments.

Disadvantages of having a constitution

1. A written constitution can be difficult to change as society changes. Australia today is not the same as the colonies of the 1890s when the Constitution was written, and yet we are still bound by a document that is

FIGURE 3 The Australian Constitution guarantees freedom of religion for all Australians.



over 100 years old. Back then it was illegal for anyone to bathe on public beaches between 6 am and 8 pm. Imagine if such a law still existed today!

2. Any written document can be open to interpretation. Some words have a number of different meanings. People could argue over those meanings, making a constitution less clear than we would want.
3. Enforcing a constitution depends on the willingness of everyone to obey it. In some countries, **dictators** have seized power by force and refused to follow the constitution of that country. In 1933, for example, Adolf Hitler seized complete power in Germany. Although Germany had a constitution at the time, Hitler was able to convince the German Parliament to pass laws suspending many of the safeguards (protections) in that constitution. These suspended safeguards included rights such as free expression of opinion and freedom of the press, as well as constitutional protections that made sure executive government did not have excessive power. The new laws made it easier for Hitler to persecute his political opponents and minority groups such as the Jewish people. Once he gained complete control of Germany, he murdered more than 6 million Jewish people.

FIGURE 4 Adolf Hitler became a dictator in Germany in 1933 by suspending the protections in Germany's constitution.



1.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Outline two reasons why the idea of a united Australia became popular during the 1880s and 1890s.
2. Explain the process by which the Australian Constitution came into existence.

Explain

3. In your own words, explain the meaning of the term 'federation'.
4. What is the main feature of a federation?

Discover

5. The current states of Australia were originally British colonies. Using internet or library resources, answer the following:
 - (a) What is a colony?
 - (b) Identify three countries other than Australia that were previously British colonies.

Predict

6. Would it be possible for a dictator to seize power in Australia? Give reasons for your answer.

Think

7. After reading about the advantages and disadvantages of having a written constitution, do you believe that such a constitution is a positive or a negative feature of our system of government? Outline your opinion in writing, and compare it with the opinions of your classmates.

1.3 Sharing the power

1.3.1 The division of powers

One of the key reasons for having a constitution is to reinforce the rights of citizens in a **democracy** such as Australia. Our Constitution does this by ensuring that no one person or organisation within our structure of government has all the power. Instead, power is shared in a number of ways, and the Constitution reinforces this arrangement.

Most of the colonial parliaments that were to become state parliaments after federation had been in existence since the 1850s. State parliaments were accustomed to passing laws and governing their areas of Australia, and everyone expected them to continue doing this after 1901. For this reason, the Constitution supports the idea of a division of powers between the state parliaments and the federal parliament. Law-making powers are divided in such a way that national issues can be handled by the central government, while state governments can concentrate on providing essential services for their citizens.

Section 51 of the Constitution lists all the areas of government that are the responsibility of the federal parliament. These are usually referred to as the ‘specific powers’, and they include:

- trade and commerce with other countries
- postal and telephone services
- the defence forces
- quarantine regulations
- immigration and emigration issues
- weights and measures used in Australia
- the banking and currency systems
- relationships with other countries (through our embassies and diplomats).

Any area of government not included in section 51 remains the responsibility of state parliaments. Examples include:

- health and hospitals
- police and emergency services
- primary and secondary education
- transport, including public transport, road rules and road construction.

The powers that remain with state parliaments are known as the ‘residual powers’.

Although not mentioned in the Constitution, there is another level of government — local government — operating in Australia. Local government is carried out by city and municipal councils. These councils usually have responsibility for:

- parks and recreational facilities, such as swimming pools and sports grounds
- town planning
- rubbish removal
- maintenance of local streets
- libraries and kindergartens.

FIGURE 1 The federal government controls the issuing of currency to ensure the same money is used throughout Australia.



FIGURE 2 The provision of essential services such as firefighting is the responsibility of state governments.



FIGURE 3 Public swimming pools are valuable facilities provided by local councils.



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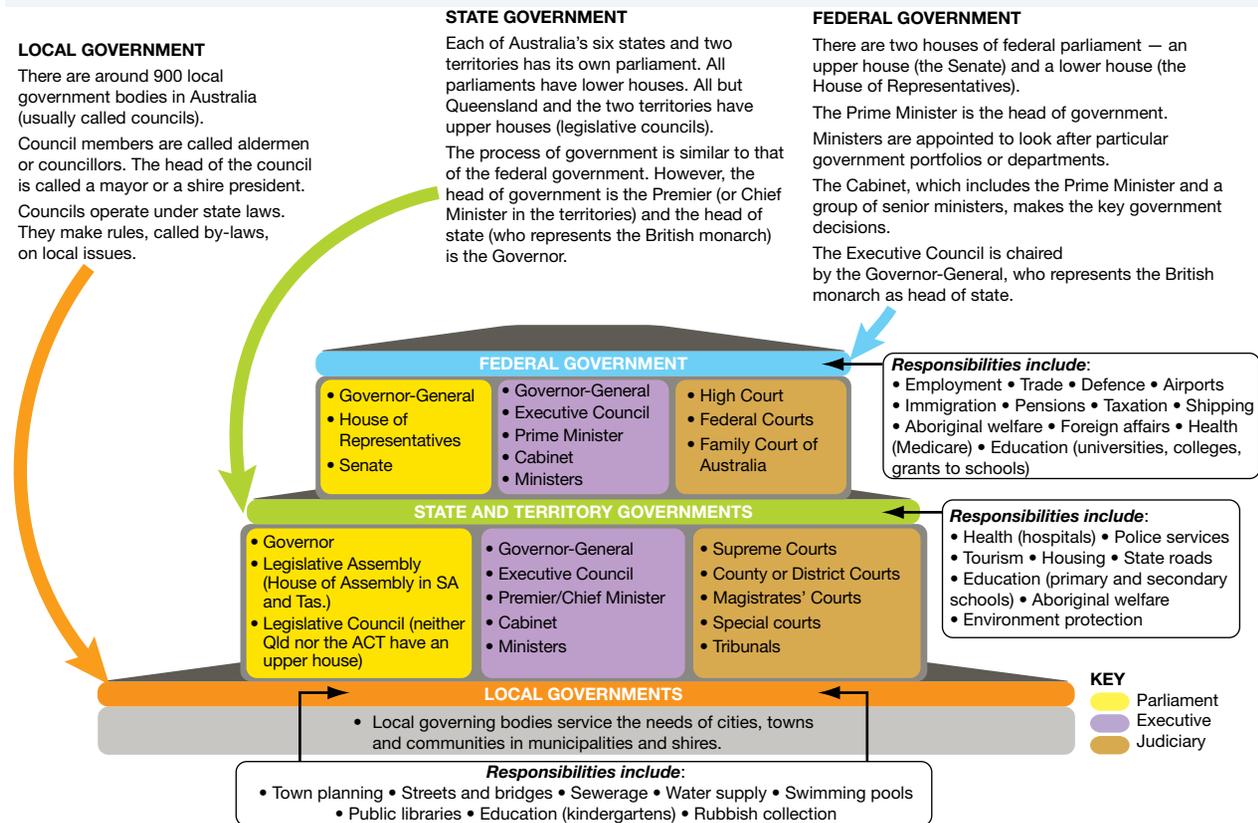
 **Try out this interactivity:** Time out: Responsibilities (int-1207)

1.3.2 The separation of powers

At both the federal and state levels, the functions of government are not all concentrated in the parliament. The Australian Constitution supports the idea of the separation of powers to allow for three arms of government:

1. legislative arm
2. executive arm
3. judicial arm.

FIGURE 4 The division of powers and the separation of powers



1.3.3 The legislative arm

This is the parliament, which has the power to make new laws and to change or **repeal** existing laws. It consists of two separate 'houses' — the House of Representatives and the Senate — together with the Governor-General as the representative of the Queen. A proposed law is known as a Bill. To become law, a Bill must be debated and voted on by both houses of parliament, and then approved by the Governor-General. It then becomes known as an Act or a statute, which are the formal names of laws that have been passed by parliament.

1.3.4 The executive arm

This is the arm of government with the responsibility of putting the laws into action. Executive power officially lies with the Governor-General, but it is usually exercised by government ministers. These are members of parliament who have special responsibility for particular areas of government. For example, the minister for defence is responsible for administering all laws that relate to the defence forces; the minister for

FIGURE 5 When all government ministers meet together, they are known as the Cabinet. Such meetings usually take place in the Cabinet Room in Parliament House.



immigration is responsible for laws dealing with migrants wishing to come to Australia; and the minister for the environment is responsible for those laws that are designed to protect the environment. Public servants and other government employees are part of the executive arm of government.

1.3.5 The judicial arm

This includes the **judiciary** and the courts, which are responsible for enforcing the law and settling disputes that might arise under the law. The courts can also ensure that the law is applied fairly and equally to everyone, so they are a safeguard for our rights and freedoms. The High Court of Australia has the power to interpret and enforce the Constitution. It can make sure that neither the legislative arm nor the executive arm acts in a way that is outside the constitutional powers of that arm. Once a judge has been appointed, he or she cannot be easily removed by the executive arm. This means that judges can be independent and make decisions without fear or favour.

FIGURE 6 The High Court of Australia has the power to interpret and enforce the Constitution.



Why do we have the separation of powers?

The separation of powers provides a system of checks and balances on the power of government. This works in the following ways:

- Members of parliament can make laws but have to face elections on a regular basis. If laws prove to be unpopular or unfair, the people can vote for new and different members to replace them.
- An independent judiciary has the power to ensure that parliament and the executive are acting within the limits of the Constitution. This is a way of protecting individual freedoms. The High Court can declare any law invalid if it is contrary to the Constitution.
- Government ministers have to gain the approval of a majority of both houses of parliament if they want to bring in any new laws. If they cannot convince enough members, the law will not be passed.
- Government ministers are all members of parliament, and are individually accountable (or answerable) to parliament. They are required to answer questions in parliament about actions they take as part of their executive role.

1.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember and Explain

1. List three examples of the responsibilities of each of the following levels of government:
(a) federal government (b) state government (c) local government.
2. Outline the role of each of the following arms of government, and provide an example of each:
(a) legislative arm (b) executive arm (c) judicial arm.
3. Explain each of the following:
(a) specific powers (b) residual powers.

Discover and Think

4. What is the difference between the division of powers and the separation of powers?
5. Using internet resources, find out who currently performs the following roles in our system of government. For each one, indicate whether their role is legislative, executive or judicial:
(a) the minister for defence (c) the Chief Justice of the High Court
(b) your local member of the House of Representatives (d) the state minister for education.
6. 'The separation of powers is an important safeguard of our rights and freedoms in Australia.' Do you agree or disagree with this statement? Give reasons for your answer.

1.4 How do we change the Constitution?

1.4.1 The process for changing the Constitution

When the founding fathers developed our Constitution, they wanted to make sure that it could not be changed by politicians seeking to gain more power for themselves. They also wanted to make sure that the two most populous states, New South Wales and Victoria, could not dominate government in a way that could disadvantage the smaller states. For these reasons, they made sure that it would not be easy to change the Constitution.

The process for changing the Constitution is contained in the last part of the document — chapter 8, section 128. The following steps must be observed if any change is to occur:

- Any proposed change to the Constitution must first be approved by a majority of members of both houses of the federal parliament.
- Within six months of being approved by the parliament, the proposed change must be put to the people to vote in a referendum. All registered voters are entitled to have a say.
- The referendum will usually be in the form of a question asking the voters whether or not they approve of the change. Voters write the word ‘Yes’ or ‘No’ in a box on the voting paper to signify their support or opposition to the proposed change (see figure 1).
- For the change to be approved, more than 50 per cent of all voters in Australia must vote yes to the proposal.
- In addition, there must be a majority in favour in at least four of the six states.
- If the above requirements are met, the proposal goes to the Governor-General for final approval and the change is made to the Constitution.

The double majority

As we can see from the previous discussion, it is not enough for a majority of all voters in Australia to approve a change to the Constitution. There must also be a majority in favour in at least four of the six states. This principle is known as the ‘double majority’, and is a requirement for constitutional change outlined in section 128 of the Constitution.

The founding fathers introduced the need for a double majority because they wanted to make sure that the states with larger populations could not out-vote the states with smaller populations, and so change the Constitution to gain some advantage for their own inhabitants. Throughout most of Australia’s history, New South Wales and Victoria have been the biggest states in terms of population. Today, with over 13 million people between them, they make up more than 50 per cent of our population of just over 23 million, and elect 85 of the possible 150 members of the House of Representatives (see figure 3).

FIGURE 1 A ballot paper from the referendum held in 1998



FIGURE 2 The Constitution can only be changed through a vote of the people.



Remember that the Constitution was developed by representatives of the original six colonies that were to become states within the new Commonwealth of Australia. These men knew that they were giving up some of their colonial powers to the new federal parliament. Many of those who represented the smaller states were suspicious of the motives of the larger states, and were afraid that New South Wales and Victoria might try to dominate the others. For this reason, they insisted on the inclusion of the double majority to protect the interests of the smaller states. Without this double majority, it would be possible for the voters in the two largest states to out-vote the combined voters in the other four states and two territories.

1.4.2 Where do proposals for change come from?

Proposals to change the Constitution can come from several sources. For example, a number of state governments may get together and decide that a particular change would be valuable. Sometimes the federal government will hold an inquiry into a particular issue, and this may lead to recommendations for constitutional change. There have been times when community pressure has led to government recognising the need for a change. This occurred in the 1960s when many people campaigned to have the federal government gain the power to make laws for Indigenous Australians

(see subtopic 1.5). Proposals for change have also come from special constitutional conventions, such as that held in 1998 to consider the issue of Australia becoming a republic (see subtopic 1.5).

No matter where a proposal comes from, it usually needs the support of the government of the day to have any prospect of bringing about constitutional change. This is because the proposal must have the majority support of the parliament before it can be put to a referendum. As we shall see in the next section, it has been very difficult to achieve constitutional change since federation. For this reason alone, a government will want to make sure there is strong popular support for any proposal before considering the cost and effort of holding a referendum.

FIGURE 3 The population and the number of elected representatives of each state



FIGURE 4 In 1998, a special constitutional convention was held in the old Parliament House in Canberra to consider the issue of Australia becoming a republic.



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1.4 Activities

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Remember

1. Rewrite the following stages for constitutional change in the correct order:
 - The proposed change is put to the people to vote in a referendum.
 - The proposal goes to the Governor-General for approval.
 - The proposed change must achieve a double majority for the referendum to be successful.
 - A proposed change to the Constitution must be approved by a majority of members of both houses of the federal parliament.
 - Voters write the word 'Yes' or 'No' in a box on the voting paper to signify their support or opposition to the proposed change.
2. Identify two possible sources of proposals for changing the Constitution.

Explain

3. What is a double majority? What has to happen for a double majority to be achieved?

Predict

4. Imagine that there has been a proposal to hold a referendum to change section 128 of the Constitution so that the double majority is no longer required for constitutional change.
 - (a) Outline one argument in favour of making such a change and one argument against the change.
 - (b) Do you believe that this proposal would be successful at a referendum? Give reasons for your answer.

1.5 How hard is it to change the Constitution?

1.5.1 Why is it difficult to change the Constitution?

The founding fathers wanted to make sure that the Constitution could not be changed too easily. They also wanted to ensure that Australia would have a form of government that was stable and predictable. Consequently, only a small minority of proposals for change have ever succeeded through the referendum process.

There have been 44 occasions since 1901 when proposals for constitutional change were put to the voters of Australia through the referendum process, and only 8 of them were successful. Let us look at some examples.

1951 — banning the Communist Party

In the years following World War II, **communism** spread through a number of countries. In eastern Europe, countries that had been occupied by Russia at the end of the war were ruled by communist governments. China became a communist country in 1949. Australia also had an active Communist Party at the time. The Australian government, led by Prime Minister Robert Menzies, believed the Communist Party to be a threat to national security. In September 1951, the Menzies government proposed a change to the Constitution to give the government the power to ban the Communist Party in Australia.

Many people campaigned against this proposal because they believed it was against the principles of freedom of speech and freedom of association. Even people who were not Communist Party members or supporters opposed the proposal. The referendum failed to gain a majority of votes, losing by 49.4 per cent to 50.6 per cent. It did gain majority support in Queensland, Tasmania and Western Australia, but

FIGURE 1 The Communist Party was considered a threat to Australia's security.



it did not have a double majority and so it failed. The Communist Party only had a relatively small number of supporters and members, and most Australians were strongly opposed to communism. Nevertheless, the failure of the referendum is a good example of the unwillingness of Australian voters to change the Constitution without strong community support for the change.

1967 — recognising Indigenous Australians

When the Constitution was drafted, the federal parliament was specifically denied the power to make laws affecting Aboriginal and Torres Strait Islander peoples. Only the states could make laws in relation to those Indigenous peoples living within their own borders. Section 127 of the Constitution specifically excluded Aboriginal peoples from being counted in the official **census**. This was seen to be discriminatory by many people, as it was effectively denying the existence of Indigenous Australians. As the rights of Indigenous peoples varied from state to state, it was felt that there needed to be a consistent national approach to ensure that they could enjoy the same rights as all Australians.

From the early 1960s, Aboriginal leaders began campaigning strongly to remove section 127 from the Constitution, and to change the clause that prevented the federal parliament from making laws affecting Indigenous Australians. In 1967, a referendum to make these changes was put to the voters. It was strongly supported by all political parties as well as the general public. This proposal became the most successful constitutional referendum in Australia history. Over 90 per cent of voters were in favour across the country, with a majority in favour in every state. As a result of this constitutional change, the federal government has been able to pass laws such as the Racial Discrimination Act, which aims to ensure that all Australians are treated equally regardless of their racial or ethnic origins. It has also allowed the federal parliament to make laws relating to Aboriginal land rights.

1999 — becoming a republic

During the 1990s, support grew for the idea that Australia should become a republic. This would have required the removal from the Constitution of references to the British monarch, and of the Governor-General as the monarch's representative. The position of head of state would be occupied by an Australian president. There were different ideas as to how such a president might be appointed. Some believed that he or she should be directly elected by the Australian voters, while others believed the president should be appointed by the parliament.

FIGURE 2 Oodgeroo Noonuccal (also known as Kath Walker) was a leading campaigner for Aboriginal rights in the 1960s.



FIGURE 3 The Australian Republican Movement and Australians for Constitutional Monarchy were active in campaigning during the 1999 republic referendum.



In 1998 a constitutional convention was held in Canberra, attended by representatives from a variety of political and community groups. The convention was given the task of coming up with a proposal to put to voters in a referendum. After much discussion, the convention proposed a model by which the president of an Australian republic would be appointed by a vote of the federal parliament. A successful presidential nominee would need to be supported by two-thirds of those members. The proposal was opposed both by people who wanted to retain the British monarch as head of state and by those who wanted a president to be directly elected by the voters. Without broad community support, the referendum did not win majority support throughout the country or gain a majority in any state.

1.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Why did the Menzies government wish to ban the Communist Party in Australia?
2. Which two issues were the subject of the 1967 referendum relating to Aboriginal rights?
3. What process was used to develop the model voted on in the 1999 republic referendum?

Discover

4. Using internet resources, identify three pieces of legislation that have been passed as a result of the federal parliament gaining the power to make laws for Aboriginal Australians.

Think

5. Using the examples of the 1951 and 1999 referendums, brainstorm three reasons why it is very difficult for a constitutional referendum to be successful in Australia.
6. Despite the loss of the referendum in 1999, many people still believe that Australia should eventually become a republic. On the other hand, media coverage of the marriage of Prince William and Kate Middleton and the births of Prince George and Princess Charlotte has revived interest in the monarchy. Using the **Australian Republican Movement** and **Australians for Constitutional Monarchy** weblinks in your Resources tab, list three arguments in favour of Australia becoming a republic, and three arguments against. Compare your arguments with those of your classmates. Your teacher may be able to organise a class debate on the issue.

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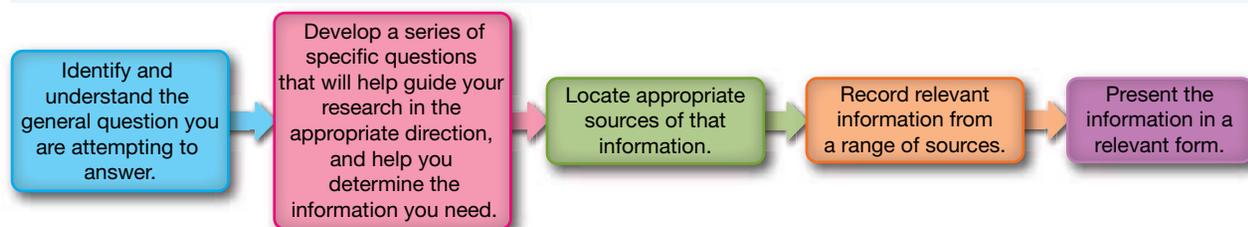
 Explore more with these weblinks: [Australian Republican Movement](#), [Australians for Constitutional Monarchy](#)

1.6 SkillBuilder: Questioning and researching

1.6.1 Tell me

When carrying out your own research, the steps in figure 1 can provide a useful guide.

FIGURE 1 How to carry out your own research



1.6.2 Show me

Imagine you have been asked to investigate the process that led to Australian federation in 1901.

Your first step is to clearly identify the essential key question. This could be expressed as: ‘What was the sequence of events that led to Australian federation in 1901?’

It is now necessary to break this down into a series of more specific questions. These could include:

1. Who or what started the process? (Was there an individual, a group of people or a significant event that began the process?)
2. How or why did each of the state governments become interested in pursuing the idea of federation?
3. What organisations were set up to promote the idea?
4. Who were the founding fathers? (What were their names? Which colonies did they represent?)
5. What processes did the founding fathers use to develop a constitution?
6. When and where did they meet to carry out these processes?
7. Where did they get their ideas from?
8. What important principles did they include in the Constitution?
9. Did they have the complete support of all colonies? Were some colonies harder to convince than others?
10. What were the final legal processes that were necessary for the Constitution to come into effect?

The next step is to locate appropriate sources. By entering the search term ‘Australian federation’ in your favourite search engine, you will be presented with a number of sources. A Wikipedia entry is often found at or near the top of the list of sources found, and many students will be familiar with this resource. There is no problem in using Wikipedia as one of your sources — so long as you remember that it is not always reliable, and any information gathered from Wikipedia should always be checked against another source to make sure it is accurate. To help ensure that your information is correct, it is a good idea to use at least two sources to answer each question.

Keep your questions beside you as you read each source, and note the location of material that provides answers. You can select and print some text, and then highlight those sentences or paragraphs that provide answers to your questions. Sometimes a complete answer to a question may be found in several places in a piece of text. Be sure to highlight all relevant text, and indicate with a number which question the information answers.

When you are satisfied that you have found the answers to all the questions, you need to write the answers in order, making sure to use your own words as much as possible. You can then use the answers to present your information in the required form. This may be a report to the rest of the class, an essay to be marked by your teacher, a PowerPoint or Keynote presentation, or any other format that is appropriate.

1.6.3 Let me do it

Practise the skill

Using the above process as a model, devise a series of questions and carry out the research to produce a report on the following key question: ‘Why was the 1967 referendum on Aboriginal rights the most successful in Australia’s history?’

1.7 Review

1.7.1 Summary

The way we are governed in Australia is determined by a set of rules. This set of rules is known as our Constitution. It outlines the powers of those governing us, and what they are and are not permitted to do in exercising those powers. Commonwealth and state parliaments are all expected to operate within the rules laid out in this Constitution. The law courts are also expected to uphold the rules contained in the Constitution, and to ensure that all individuals and organisations act within these rules.

- A constitution was necessary because Australia already consisted of six self-governing colonies. As a national parliament would be introduced to govern the new nation, it was important to have a clear statement of how power would be shared between the national parliament and the six existing parliaments.
- The Constitution provides for a division of powers between the state parliaments and the federal parliament. Law-making powers are divided in such a way that national issues can be handled by the central government, while state governments can concentrate on providing essential services for their citizens.
- Under our Constitution, we also have a separation of powers. This means that power is separated between the legislative arm of government, which makes laws; the executive arm, which implements (or carries out) the laws; and the judicial arm, which resolves disputes that may arise under those laws.
- Our Constitution can only be changed through a referendum in which a double majority vote in favour of the proposed change.
- It is relatively difficult to change our Constitution. There have been 44 occasions when constitutional change has been attempted, and only 8 of them were successful.

1.7.2 Your turn

Australia's Constitution would never have been agreed to if it had not guaranteed a role for state governments. It was state politicians who met to develop the Constitution, believing that they would continue to have considerable powers. Over the last hundred years, many Australians have argued that we no longer need state governments. They argue that countries with much larger populations than Australia manage without two levels of parliament. They also argue that local councils could be enlarged to become elected regional authorities, so that we would have only two levels of government. Those who support retaining state governments argue that the federal parliament is too distant from ordinary people, and that state governments are best placed to deliver essential services.

Removing state parliaments would require several changes to the Constitution. Consider the following questions, and give reasons for your responses:

1. Modern communications did not exist when the Constitution was drafted, so the federal government would have seemed very distant. State governments, however, were based in every capital city and so were closer to the people. Have changes in our forms of communication made state governments unnecessary?
2. Identify three changes that would have to happen for a referendum to abolish the states to be successful.
3. Can you think of some powers that are currently held by one level of government that could be transferred to a different level of government? For example, the state governments could transfer their responsibility for health and hospitals to the federal government.

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 Try out this interactivity: The Australian Constitution crossword (int-5311)

TOPIC 2

The Australian government

2.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

2.1.1 Parliament represents citizens

Parliament is the main law-making body in Australia. Parliaments are elected to create laws that represent the wishes and values of their citizens. We describe our system of government as a **democracy** because the people vote to decide who sits in the parliament to make our laws for us. State parliaments were mostly established in the six former colonies from the 1850s onwards, while the federal parliament came into being with federation in 1901.

Many features of our parliamentary democracy have been adapted from the British system of government, known as the **Westminster system**. As a group of former British colonies, we adopted many features of the Westminster system including having two houses of parliament at both the federal level and in most of the states.

FIGURE 1 Our parliamentary system is based on the Westminster system. Westminster is a district of London in which the British Parliament is located.



Starter questions

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

1. Have you ever taken part in an election in your class or in a sports club? What was the process used? Who voted and how was the vote conducted?
2. What are the names of the two major political parties in Australia? Make a list of what you know about each one.
3. What is the name of your local federal electorate?
4. Who is your local member of federal parliament? Which political party does he or she represent?
5. What is the name of your local state electorate?
6. Who is your local member of state parliament? Which political party does he or she represent?

INQUIRY SEQUENCE

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 Watch this eLesson: What is parliament? (eles-2077)

2.2 Role and structure of the Commonwealth Parliament

2.2.1 The three parts of Parliament

Our Commonwealth Parliament consists of three parts:

- the lower house, known as the House of Representatives
- the upper house, known as the Senate
- the Queen, represented by the Governor-General.

Our Commonwealth Parliament is **bicameral**. The major role of this body is to make laws in those areas defined by the Constitution.

2.2.2 The House of Representatives

As the lower house in the federal parliament, the House of Representatives has the following features:

- It has 150 members, each elected for three years. Each member represents an electorate or ‘seat’ that covers a particular geographic area. All electorates have roughly the same number of electors, currently about 90 000 each. States with larger populations, such as New South Wales and Victoria, elect the largest number of members. States with smaller populations, such as Tasmania and South Australia, elect much smaller numbers.

FIGURE 1 The House of Representatives Chamber



- Meetings of the House of Representatives are chaired (or run) by the Speaker of the House. The Speaker is usually elected by all the members of the House. The Speaker has an important role in chairing the House, maintaining order in debates and ensuring all members observe the rules of the House, known as the ‘standing orders’.
- Most legislation is introduced in the House of Representatives. For it to actually become the law of the land, a majority of the members of parliament have to vote in favour of it.
- Most members of the House of Representatives (MHRs) are members of political parties. A party is a group of people who have similar opinions and values, and who will usually all vote together for laws that reflect those views and values (see subtopic 2.4).

2.2.3 The Senate

The Senate is the upper house of the federal parliament, and has the following features:

- It acts as a house of review. This means that it can have a second look at all legislation that has passed through the House of Representatives. Senators also have to vote on any new proposals before they can become law. They can reject or change any legislation that they do not believe is appropriate.
- Apart from a brief period from 2005 to 2008, governments have not had a majority of members in the Senate since 1981. This has meant that the Senate has often sought to change or improve government legislation.
- The Senate has 76 members. Each of the six states elects twelve senators, regardless of size or population, and the Northern Territory and ACT each elect two senators. In contrast, the members of the lower house are elected on the basis of population. Because there are so many representatives from New South Wales and Victoria, they could out-vote all the other members combined. The Senate was therefore created with equal numbers from each state to act as a safeguard against this happening in the upper house.
- Meetings of the Senate are chaired by the President of the Senate. He or she has a similar role in relation to the Senate as the Speaker has in relation to the House of Representatives.

FIGURE 2 The Senate Chamber



FIGURE 3 General Peter Cosgrove was sworn in as Australia's 26th Governor-General in March 2014.



2.2.4 The Governor-General

The third element in the Commonwealth Parliament is the Queen, represented in Australia by the Governor-General. He or she performs the following roles and functions in the parliamentary system:

- The Governor-General gives the **royal assent** to legislation that has been passed by both houses of parliament. This is the final stage that must occur before the law comes into force. Under section 58 of the Constitution, the Governor-General also has the power to withhold the royal assent and return a Bill to parliament with recommended changes.

- The Governor-General also has a number of special powers known as ‘reserve powers’. These include the power to summon (calling for a new parliament to assemble after a federal election), open and dissolve (ending parliament before a federal election takes place) parliament. These powers are usually exercised on the advice of the government of the day, although the Constitution gives the Governor-General the power to ignore that advice. In 1975, the Governor-General at the time dissolved parliament and called an election, effectively dismissing an elected government.

2.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is a bicameral parliament?
2. In the federal parliament, what is the name of:
 - (a) the upper house
 - (b) the lower house?
3. What is the role of the Governor-General in passing legislation?

Explain

4. What is the difference between the way in which Members of the House of Representatives are elected and the way in which Senators are elected?
5. Outline the two main functions of the Senate.

Predict

6. Imagine that the Governor-General rejects a proposed law and sends it back to the parliament with recommended changes.
 - (a) What has to happen in both houses before the Bill returns to the Governor-General?
 - (b) Identify two possible consequences if either or both houses of parliament refuse to accept the Governor-General’s recommended changes.

2.3 State and territory parliaments

2.3.1 Eight separate parliaments

Although considerable powers were handed over to the federal parliament at the time of federation, the newly established states retained the parliamentary structures that had been established during the colonial period. They still perform an important function in our system of government.

In addition to the federal parliament, Australia has eight state and territory parliaments. There are the original six state parliaments created at federation, plus two parliaments that have been established to make laws for the two mainland territories — the Northern Territory and the Australian Capital Territory (ACT). The two territories were governed directly by the federal parliament for most of the twentieth century, with the Northern Territory gaining its own parliament in 1974 and the ACT in 1989. The federal parliament retains the power to change or overrule any laws passed in the territory parliaments. It does not have this power over the six state parliaments.

2.3.2 Features of the state and territory parliaments

State and territory parliaments have many similar features, although some have unique characteristics:

- All of the state parliaments were originally established as bicameral parliaments, with an upper and a lower house. In 1922 the Queensland Parliament abolished its upper house, so it is now a **unicameral** parliament.

- In each of the bicameral parliaments, the upper house is known as the Legislative Council. In Victoria, New South Wales and Western Australia, the lower house is called the Legislative Assembly. This is also the name given to the only house in Queensland. The lower house in South Australia and Tasmania is known as the House of Assembly.
- The territory parliaments are also unicameral, with the one house in each territory known as the Legislative Assembly.
- The leader of the government in each of the states is called the premier, while the leader of the government in the two territories is called the chief minister.
- Each of the states and territories mirrors the separation of powers that applies at the federal level: legislative, executive and judiciary. Each parliament has legislative powers, allowing it to pass laws that apply within the boundaries of the state or territory. Each has an executive arm, in the form of a group of ministers with particular responsibilities for different government functions. Each also has a judiciary to enforce laws and settle disputes. The highest court in each state and territory is known as the Supreme Court.
- Each of the states has a Governor, representing the Queen. He or she has the same role within each state as the Governor-General has at the federal level.

2.3.3 Role of the state and territory governments

State and territory governments provide many of the essential services we rely on in everyday life.

Criminal law

State and territory governments have the power to make laws to prohibit most types of criminal activity. They also have the power to decide the appropriate punishments for people who break the law. Laws relating to crimes such as murder, assault and theft are all made at the state level. State governments also control the road laws, including speed limits, drivers licences, car registration and drink driving laws.

Transport

State and territory governments are responsible for building and maintaining most of the roads and freeways within their own borders. Sometimes they arrange for private companies to build these roads. Such companies are usually given the right to charge tolls on the roads they have built. Public transport is also a state government responsibility. In some states, the

FIGURE 1 State governments make laws to prohibit criminal activity.



FIGURE 2 Public transport is one of the responsibilities of state governments.



government owns and operates the public transport system. In others, all or part of the public transport system is operated by private operators. In either case, state and territory governments make the laws that govern how the system operates.

Police and emergency services

Each state and territory has its own police force, fire brigade, ambulance service and other emergency services. Police from one state generally cannot enter another state to arrest someone without special permission. However, the different police and emergency services from each state and territory usually cooperate with each other. We regularly see this when there is a major bushfire in one state and firefighters from other states come in to assist.

Health and hospitals

Public hospitals are built and operated by state and territory governments. These days, state governments rely on money from the federal government to help fund their health systems because hospitals are extremely expensive to run.

Education

Each state and territory has its own primary and secondary education systems. The states often have different starting ages for school students, and each state has its own type of certificate for students completing Year 12. In recent years, the state and federal governments have jointly set up a national curriculum. The aim is to make sure that each education system covers the same subject matter at each year level. This means that students will do similar classwork wherever they live, even if they move from one state to another.

FIGURE 3 State governments are responsible for emergency services.



FIGURE 4 Public hospitals are built and managed by state governments.



FIGURE 5 Each state and territory has its own primary and secondary education systems.



2.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What do we mean by a unicameral parliament?
2. Identify two unicameral parliaments in the Australian parliamentary system.
3. What is the title given to the Queen's representative in each of the states?

Explain

4. How does the separation of powers apply in all of the states and territories?
5. Using an example, explain how emergency services from the different states can cooperate with each other.

Discover

6. Use internet resources to answer the following:
 - (a) Which states and territories commence secondary school at Year 7 and which ones do so at Year 8?
 - (b) What is the minimum age at which you can get your provisional (P-plate) drivers licence in each of the states and territories?
 - (c) What is the name of the Year 12 certificate in each state and territory?
 - (d) What is the name of the current premier in your state government (or the chief minister if you live in one of the territories)? How long has his or her government been in power?

2.4 Winning power

2.4.1 Political parties

While members of parliament were originally intended to simply represent the people who elected them, the development of political parties has influenced the nature of our parliamentary system. Elections have become contests between the parties. Whichever party gains a majority of members in parliament wins the power to determine which laws get passed, and therefore how the lives of all of us will be affected.

Political parties are groups of people who come together because they share similar opinions and values. They generally wish to ensure that laws passed by parliament will reflect and promote their beliefs. To help achieve this, they will usually devise a set of policies and promises that they hope will appeal to the majority of voters. Their aim is to then gain a majority of members in parliament so that they can pass laws to carry out their policies.

There are four major political parties in Australia.

The Australian Labor Party

The Australian Labor Party (ALP) is the oldest party in Australia. It was formed in the 1890s by members of the **trade union** movement. Its original aim was to represent the interests of workers and trade union members in parliament at a time when most members of parliament represented wealthy business or farming interests.

The Liberal Party of Australia

The Liberal Party was formed in 1944 by Robert Menzies. It believes in individual freedom, and in supporting the growth of business as a means of increasing national wealth. Since 1949, the Liberal Party has formed a **coalition** with the National Party.



The National Party of Australia

The National Party was originally founded as the Country Party in 1920. It was formed from a number of smaller parties that were designed to promote the interests of farmers and people living in regional communities (outside of the big Australian cities).



The Australian Greens

The Australian Greens was established in 1992, initially as a party to promote a greater awareness of environmental issues. It has since broadened its aims to include the promotion of human rights and greater equality in society.



2.4.2 Federal elections

The Constitution requires that a federal election must be called every three years. This means that the voters can judge whether or not their elected representatives have been doing a good job. If they are unhappy with their members of parliament, they can vote them out and replace them with different members.

The prime minister usually decides the date of the election and then asks the Governor-General to call an election on that date. During the weeks before the election, each of the political parties will try to promote their policies in the hope of convincing the majority of voters that they will do the best job in government.

Voting always occurs on a Saturday between 8 am and 6 pm. You have probably observed this process on the television and may have accompanied your parents or guardians when they have gone to vote. When voting has finished, counting the votes begins. In most cases, enough votes will have been counted within three or four hours for it to be clear which candidates have been elected.

2.4.3 Forming a new government

In most cases, an election will result in one of the major parties — or a coalition of two or more parties — winning a majority of seats in the House of Representatives. This party wins the right to form a government for the next three years.

- The leader of the party in government is known as the prime minister, and is seen as the leader of the country while in government.
- Leading members of the government party or parties become ministers, and take over executive responsibility for different areas of government.
- The government has the power to bring in laws aimed at keeping the promises they made before the election.
- A new government can also **repeal** laws that were introduced by a previous government. This will happen if those laws were unpopular and led to the previous government being defeated.

FIGURE 1 After the 2016 federal election, the Liberal-National coalition re-formed government, with Malcolm Turnbull as prime minister. The Labor Party remained in Opposition, with Bill Shorten as leader of the Opposition.



- The largest single party not in government becomes the Opposition, headed by the leader of the Opposition. This party will aim to question everything the government does to make sure that the government keeps all its promises. The Opposition will also aim to become the next government by winning the next election.

2.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is a political party?
2. How often must a federal election be held?
3. On what day, and between which hours, are elections always held in Australia?

Explain

4. After an election, how is a new government formed?
5. Who carries out the executive function of government after an election?

Discover

6. Select one of the political parties described in this section and use that party's website to answer the following:
 - (a) Who is the current federal leader of the party?
 - (b) Identify three key beliefs or principles of the party in question.
 - (c) Explain three key policies or actions the party would wish to carry out if it were elected to government.

Think

7. Australia is considered to be a democratic country. Describe two features of our parliamentary system that you believe contribute to this view of Australia. Can you think of any features of our system that could be considered undemocratic?

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Watch this eLesson: Federal elections (eles-2258)

2.5 The environment – an issue for all levels of government

2.5.1 What level of responsibility?

Protection of the environment was not considered an issue for government involvement when the Constitution was drafted. Consequently, responsibility for protecting the environment was not allocated to either the federal or state levels of government. Since the 1960s, we have become more aware of the dangers of pollution, and the need for governments to step in and make laws to prevent activities that could cause environmental damage. Both state and federal governments have assumed responsibility for environmental issues in different ways.

2.5.2 State government actions

What have governments been doing to protect our environment? Since 1970, all state and territory governments have passed environmental protection laws in areas such as air and water quality, residential noise and forestry management.

Air quality

Restricting the amount of pollution released into the atmosphere is an important part of environmental law. State government environmental laws usually include restrictions on motor vehicle exhaust emissions. They also try to limit the amount of airborne pollutants released by factories and other businesses.

FIGURE 1 State governments attempt to regulate the amount of pollution that can be released into the atmosphere.



FIGURE 2 State governments make laws to keep our water supplies clean and safe.



Water quality

State and territory governments are responsible for maintaining water supplies in their regions. They ensure that:

- clean, safe drinking water is delivered to homes
- rivers and other waterways are kept free from pollution
- farms have access to water for crops and for stock to drink
- sewage and storm water are disposed of without contaminating the environment.

FIGURE 3 Residential noise comes under state environmental law.



FIGURE 4 State governments make laws to regulate the harvesting of timber from forests.



Residential noise

Individuals and businesses are required by state laws to limit the amount of noise they make so as not to disturb their neighbours.

Forestry management

State and territory governments are responsible for regulating the amount of timber that can be taken from natural forests and, in some cases, preserving certain areas as national parks.

2.5.3 Federal government actions

The federal government administers the Environment Protection and Biodiversity Conservation Act. This law is designed to protect important national or world heritage sites, including areas off the coast such as the Great Barrier Reef. Any individual or business planning to do anything that will have an impact on environmentally significant sites must carry out an environmental impact assessment, and gain the approval of the federal minister for the environment.

FIGURE 5 National heritage areas like the Great Barrier Reef are protected by federal environmental laws.



in Queensland, New South Wales and Victoria, but the system finally empties into the sea in South Australia. There have been times when so much water has been taken out of the system upstream that the mouth of the Murray has been closed with sandbars.

In 2007, each of the state governments agreed to hand over some of their powers to the federal government as part of the process of setting up the Murray–Darling Basin Authority. This body has powers to ensure the water resources of the basin are managed in a sustainable manner. It has drawn up a plan which attempts to balance the amount of water used for irrigation with the amount needed to maintain sustainable flows of water throughout the system. The plan is an example of the federal and state governments attempting to work together.

The Murray–Darling Basin plan has been very controversial. Many farmers believe that too much water is being diverted from irrigation to maintain environmental river flows. Yet many environmental scientists believe the amount of water used for irrigation is still too high to maintain a healthy river system. Governments often have to make decisions that attempt to balance the competing interests of different groups.

FIGURE 7 The amount of water taken from irrigation has had an impact on the environment of the Murray–Darling Basin.



2.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. How do state and territory governments attempt to improve air quality?
2. Identify and list four ways in which state governments attempt to ensure the community's water needs are met.
3. What is the responsibility of state governments in relation to forests?

Explain

4. What is the major role of the federal government in environmental protection?
5. Why was it important for the federal government to become involved in the management of the Murray–Darling Basin?

Predict

6. What do you think might happen in South Australia if farmers in Queensland and New South Wales take increased amounts of water from the Murray–Darling Basin?

Think

7. Governments often have to make decisions that attempt to balance the interests of groups of people in the community. In what ways is the Murray–Darling Basin plan an example of this?

2.6 SkillBuilder: Evaluating

2.6.1 Tell me

Problem solving and decision making involve working collaboratively in groups, negotiating and using teamwork to solve an issue and develop a plan for action. In order to do this successfully, you will need to do the following:

- Listen actively to the views of every member of the group.
- Display empathy for the views of others. This means that you have an appreciation for the feelings of others and respect their right to an opinion, even if it is different from your own.

- Negotiate to resolve differences of opinion.
- Arrive at a conclusion in a democratic manner. This can mean having a vote among members of the group, or arriving at a consensus where everyone agrees to change their views slightly until reaching a conclusion that everyone agrees with. These steps are summarised in figure 1.

2.6.2 Show me

So how does this process work in practice? Consider this example: In Australia everyone over 18 years of age can vote, but it is the responsibility of young people to register to vote when they turn 18. It has been estimated that as many as 30 per cent of Australians aged 18 to 21 have not registered, and so are missing out on voting.

Now form into discussion groups to consider the following key points:

1. Why are so many young people not bothering to register?
2. Should we be encouraging more young people to register?
3. What are some of the ways in which we can encourage all 18-year-olds to register?
4. What plan of action could we devise to achieve greater levels of registration?

Members of the group can take it in turns to keep notes. For each discussion point, you should use the following procedure:

- Give each person a chance to express his or her opinion on the discussion point being considered. The key points of the opinion should be written down.
- Do not permit any argument or disagreement until everyone has expressed an opinion on that discussion point.
- Once everyone’s opinions on the discussion point have been shared and written down, read out the opinions and discuss them to determine whether or not everyone is in agreement.
- If there is disagreement, allow those on each side of the argument the opportunity to put their point of view to convince the majority.
- Seek the maximum level of agreement on each point discussed by allowing people to make some changes to their opinions to accommodate the views of others.

In devising a plan of action for discussion point 4, all possible ways of encouraging 18-year-olds to vote should be collated into a series of steps that you believe will achieve the final result.

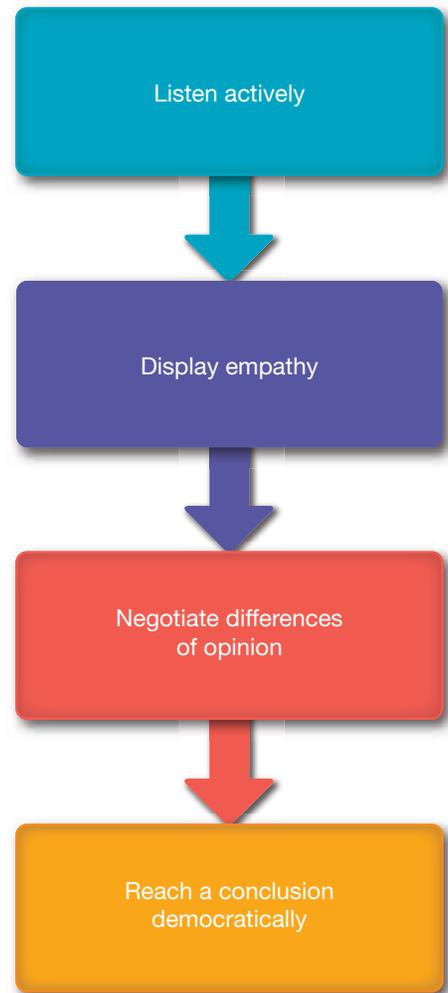
2.6.3 Let me do it

Use the above steps to consider the following issue: Voting in Australia is compulsory for all those over 18 years of age, and has been since the early 1920s. It was a decision of the parliament at the time and is not written into the Constitution. In many other countries, among them the United States and Great Britain, voting is optional. In Australia, by contrast, you can be fined for not voting. Would it be fairer and more democratic for Australia to move to optional voting?

Discussion points could include:

1. What are the advantages and disadvantages of compulsory voting, both for individuals and for our society as a whole?
2. What are the advantages and disadvantages of optional voting, both for individuals and for our society as a whole?

FIGURE 1 The problem-solving and decision-making process



3. If a change were to be considered, what are some of the ways you might convince others to support the change?
4. If you do not wish to change, how do you convince others to support the current system?
5. Develop a plan of action to put your ideas into practice.

2.7 Review

2.7.1 Summary

Parliament is the main law-making body in Australia. Parliaments are elected to create laws that represent the wishes and values of citizens. Our system of government is known as a democracy because the people vote to decide who sits in the parliament. State parliaments were mostly established in the six former colonies from the 1850s, while the federal parliament came into being with federation in 1901.

Many features of our parliamentary democracy have been adapted from the British system of government, known as the Westminster system. As a group of former British colonies, we adopted many features of the Westminster system, such as having two houses of parliament at both the federal level and in most of the states.

- Our federal parliament consists of the Governor-General, the Senate and the House of Representatives. Any new laws or changes to existing laws must be voted on by a majority of members of both houses, and given the royal assent by the Governor-General.
- Each of the six states and two territories has its own parliament to make laws for its citizens on those matters over which the state or territory has constitutional power.
- Most of those elected to parliament are members of one of the political parties. These parties aim to have their members elected to parliament to form a majority so that they can pass laws to implement their policies.
- Protection of the environment is an issue that has involved all levels of government. Protection of the Murray–Darling Basin has required cooperation between the federal government and the governments of the four states concerned.

2.7.2 Your turn

People wishing to be elected to parliament often make promises and develop policies that they hope will appeal to the majority of voters. Give detailed reasons as to why you would vote for or against someone who proposed each of the following policies:

1. lowering the voting age to 16
2. raising the licensed driving age to 21
3. introducing compulsory military service for all 18-year-olds
4. introducing tolls on all roads to help pay for improved public transport.

learn on RESOURCES – ONLINE ONLY

 Try out this interactivity: Parliament and government crossword (int-5312)

TOPIC 3

The Australian legal system

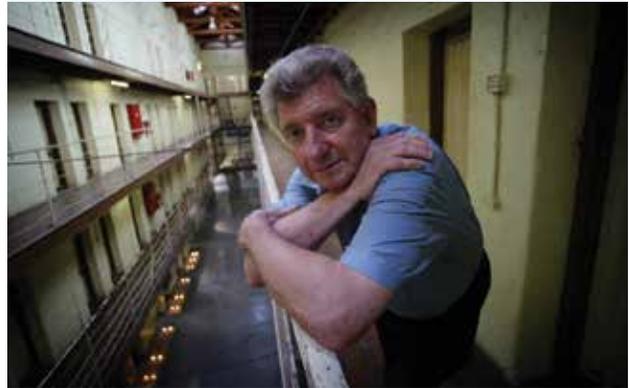
3.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

3.1.1 Our legal system

Picture yourself standing in court, accused of a crime you did not commit, facing a trial and then being found guilty of the crime. Australia's **rule of law** and our **legal system** should protect you from this happening. But how much do you know about Australia's legal system? Would you know where to find a lawyer? Would you know what would make your trial a fair one? All Australian citizens should have the opportunity to access justice no matter who they are.

FIGURE 1 John Button was wrongfully convicted of the manslaughter of his girlfriend in 1963. Thirty-nine years later, he was acquitted (found not guilty of committing the crime) after serving his sentence in prison.



Starter questions

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

1. Figure 1 shows John Button at Fremantle Prison, where he served five years of his sentence. Why do you think he returned to the prison?
2. How would you feel if you were found guilty of a crime that you did not commit and sent to prison?
3. What would you expect to happen in a fair trial?
4. Who would help you if you had to go to court?

INQUIRY SEQUENCE

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learnon RESOURCES – ONLINE ONLY

 Watch this eLesson: The courtroom (eles-2078)

3.2 What happens in a courtroom?

3.2.1 Guilty or not guilty?

Courts interpret laws and settle disputes. A person who has been charged with a criminal offence may have his or her case heard by a court. It is up to the court to decide if the accused is guilty or not guilty. Let us look at what happens when a criminal matter goes to **trial** before a court.

Courts can be tense places. The decisions made in them can have an enormous impact on people's lives. Courts and the officials who work in them deal with real-life dramas. The main courtroom officials include a **magistrate** or **judge**, **jurors**, a **prosecutor** and **counsel for the defence**. Each state and territory has its own independent system of courts, with different courts at different levels. Courts are often referred to as higher or lower courts.

FIGURE 1 The main people involved in a trial for a serious offence.

A The judge's associate is a trained lawyer who manages much of the paperwork.

B Anyone whose name is on the electoral roll can be called as a juror. In a criminal case, the jury consists of 12 people. The jury must decide beyond reasonable doubt whether a person is guilty. All the jurors have to agree.

C The prosecutor has to convince the jury that the accused person is guilty. This is done by asking questions of witnesses to draw out relevant information.

D The judge is addressed as 'Your Honour'. They listen to arguments presented by the prosecutor and the counsel for the defence, and is not allowed to ask a witness questions (except to clarify a point). The judge has to make sure jury members understand the proceedings and evidence presented. If a jury announces a guilty verdict, the judge decides the sentence.

E The counsel for the defence represents the accused. If the accused pleads guilty, the counsel for the defence presents arguments to try to lessen the punishment. If the client pleads not guilty, defence counsel must convince the judge or jury that the client is innocent.

F The tipstaff helps the judge keep order in the court.

G Witness box, from which people give evidence

H Members of the public, who listen to and observe the court proceedings

I A prison officer from the prison where the accused has been held

J The accused

K Members of the media, who observe proceedings so they can report what happens



3.2.2 Lower courts

Most people charged with a criminal offence will have their cases heard in a magistrates court (called the Local Court in New South Wales, the Magistrates' Court in Victoria and the Magistrates Court elsewhere). These lower courts are more informal than the higher courts. There is no **jury**, and magistrates do not wear a wig or a robe in court. However, people still need to address the magistrate as 'Your Honour' as they do in the higher courts.

After hearing the cases presented by both sides, the magistrate decides whether a person is guilty or not guilty. If a person is found guilty, the magistrate decides the consequence. This is known as the sentence. A magistrate will refer very serious criminal offences to a higher court.

3.2.3 Higher courts

The states and territories all have a Supreme Court, which hears the most serious criminal cases. All the states except Tasmania have a District Court, although the equivalent court in Victoria is referred to as the County Court. The District or County Court hears serious criminal matters (except for the most significant cases), including murder and treason.

At the beginning of a criminal trial in a higher court, the accused is asked, 'How do you plead?' A jury of 12 people may be selected if the response is 'Not guilty'. The jury's role is to listen to the evidence and decide whether the accused is guilty or not guilty. If the verdict is not guilty, the accused is free to leave the court. If the verdict is guilty, then the judge decides the sentence.

3.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. List the main courtroom officials in a serious criminal trial.
2. How are magistrates and judges addressed in court?
3. How many jurors are there for a criminal case?
4. What is the jury's responsibility in a criminal trial?

Explain

5. The system of courts for each state or territory is referred to as a hierarchy (like a ladder). Construct a diagram showing the hierarchy of courts for your state or territory. Put the highest court at the top and the lowest court at the bottom of your diagram.

Discover

6. Ask your teacher to organise a class excursion to a local court. While you are there, draw a floor plan of the court and label where all the officials are located in the room. Note their role in the court. Write down some of the facts you hear for each case.
7. In a magazine, newspaper or online, find a news article that reports on a criminal case in an Australian court. Summarise the key facts of the case, taking note of who the judge or magistrate was, what the charge was, any decision made and any other court officials mentioned.
8. In a group of three to four, develop a 30-second TV advertisement for a law firm that defends people charged with serious crimes such as murder.

Think

9. In most states of Australia, a person can be found guilty by a jury only if 11 of the 12 jurors (a majority verdict) or all 12 jurors (a unanimous verdict) conclude that the accused is guilty. Why might this be hard to achieve?

3.3 The presumption of innocence

3.3.1 Innocent until proven guilty

If you were in trouble at school, you would hope that your teacher or principal would believe your claim that you had done nothing wrong. You would expect that you or your classmates would be treated as innocent until it could be proved that you or they had actually done the wrong thing. In the same way, most Australians expect that when they go to court they will be presumed to be innocent until proven guilty. But is this something that actually happens?

The **presumption of innocence** is a belief that we have inherited from English law. It means that all accused people who appear before a court in Australia are presumed to be innocent until the prosecution proves that they are guilty. Not only are they presumed to be innocent, but they can only be found guilty if the court is reasonably certain that the accused person committed the crime. This means that the magistrate, judge or jury must believe that the accused is guilty **beyond reasonable doubt**. The prosecution has the **burden of proof** in a criminal trial.

3.3.2 Presumption of innocence around the world

The presumption of innocence is contained in article 11 of the Universal Declaration of Human Rights, and in article 14 of the International Covenant on Civil and Political Rights (ICCPR). This means that it is seen as very important across the world. Many nations — including the United States of America, France, Italy and New Zealand — recognise this principle.

FIGURE 1 Unlike in this image, the presumption of innocence suggests that a defendant should not be handcuffed when appearing in court unless he or she presents a risk to other people.



FIGURE 2 Some advantages of the presumption of innocence

The presumption of innocence means that the prosecution must prove beyond reasonable doubt that a person has committed the crime they are charged with.

Without the presumption of innocence, the police could arrest and imprison you for no reason. They would only need to *think* that you did something wrong and they could arrest you! Imagine walking around every day with the fear that you might be accused of breaking a law and that you would no be presumed innocent.

We need this principle to protect us. It is far better to allow one or two guilty people to go free than to lock up innocent people. After all, most people are law-abiding citizens.

FIGURE 3 Some disadvantages of the presumption of innocence

The presumption of innocence allows every accused person to clog up our courts and gives legal people too much work to do. It is a loss of both time and money.

There is also the risk that a person accused of a serious crime might go into hiding or commit another crime before the trial begins.

We should do more to help the police deal with troublemakers instead of making it easier for criminals to avoid consequences.

Any victim of crime would tell you that people who are charged with crimes are too protected. They would also tell you that the police are honest and do a good job. So if the police do charge someone with a crime, they must actually be pretty sure that the accused actually committed that crime.

3.3.3 Presumption of innocence and bail

Observing the presumption of innocence means that if a person is charged with a criminal offence, they may be granted **bail** by a magistrate or judge. Bail is the promise that an accused person makes to appear in court at a later date. It allows the accused to go home to wait for the trial, rather than stay in custody

until he or she must go to court. Sometimes bail will have conditions attached, including the payment of money, surrendering a passport, remaining at the same address or reporting to police. Bail usually applies only to serious cases.

There are cases where the court may suspect that an accused person who is charged with a serious crime might not turn up to court, or might be at risk of causing danger to the public. In this case, bail would be refused and the accused would be detained (held in custody) until the trial.

CASE STUDY

Presumption of innocence — on your bike

Queensland introduced new laws in 2013 to target the illegal activities of gangs, including criminal bikie gangs. The laws are commonly referred to as 'bikie laws'. A list of declared criminal organisations was prepared. New offences were created, including members of a criminal gang gathering in groups of three or more, visiting locations like clubhouses or a banned event, and recruiting for their organisations. The laws have been criticised for going against the principle of the presumption of innocence.

Steven Smith, Scott Conley, Joshua Carew, Paul Lansdowne and Dan Whale were arrested and detained in custody in December 2013, following a meeting at the Yandina Hotel. They were alleged by police to have links to the Rebels motorcycle club. Joshua's wife, Tracy Carew, said her husband had been locked up for delivering a pizza to the other men. 'These boys aren't guilty of this crime, they haven't been proven guilty. They haven't been put in front of a jury and deemed guilty yet,' she said. Mrs Carew told the media that the men were placed in solitary confinement awaiting their court hearings. Joshua Carew, and some of the other men, were released from custody under bail conditions in mid-January 2014.

FIGURE 4 Joshua Carew and some other men were arrested due to their alleged association with the Rebels motorcycle club in Queensland. They were held in custody for an extended period of time without trial.



3.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. List some countries that believe in the presumption of innocence.
2. Define the term 'beyond reasonable doubt'.
3. What is bail and when can it be granted?

Explain

4. Examine figure 1. In what way does this image undermine the principle of the presumption of innocence?
5. Read the case study above, 'Presumption of innocence — on your bike'. Joshua Carew was held in solitary confinement for approximately six weeks before a bail hearing in the Supreme Court. Briefly outline what this suggests about the attitude of the Queensland government towards the presumption of innocence principle.

Discover

6. The media is expected to avoid news coverage that undermines the presumption of innocence. However, there are many cases where the media has ignored this principle. Charges made against Martin Bryant in 1996 are one example. Find out more about what the media did before the Bryant case went to court.

Predict

7. What might happen if an accused person went to court and was put on trial without the presumption that they were innocent?

Think

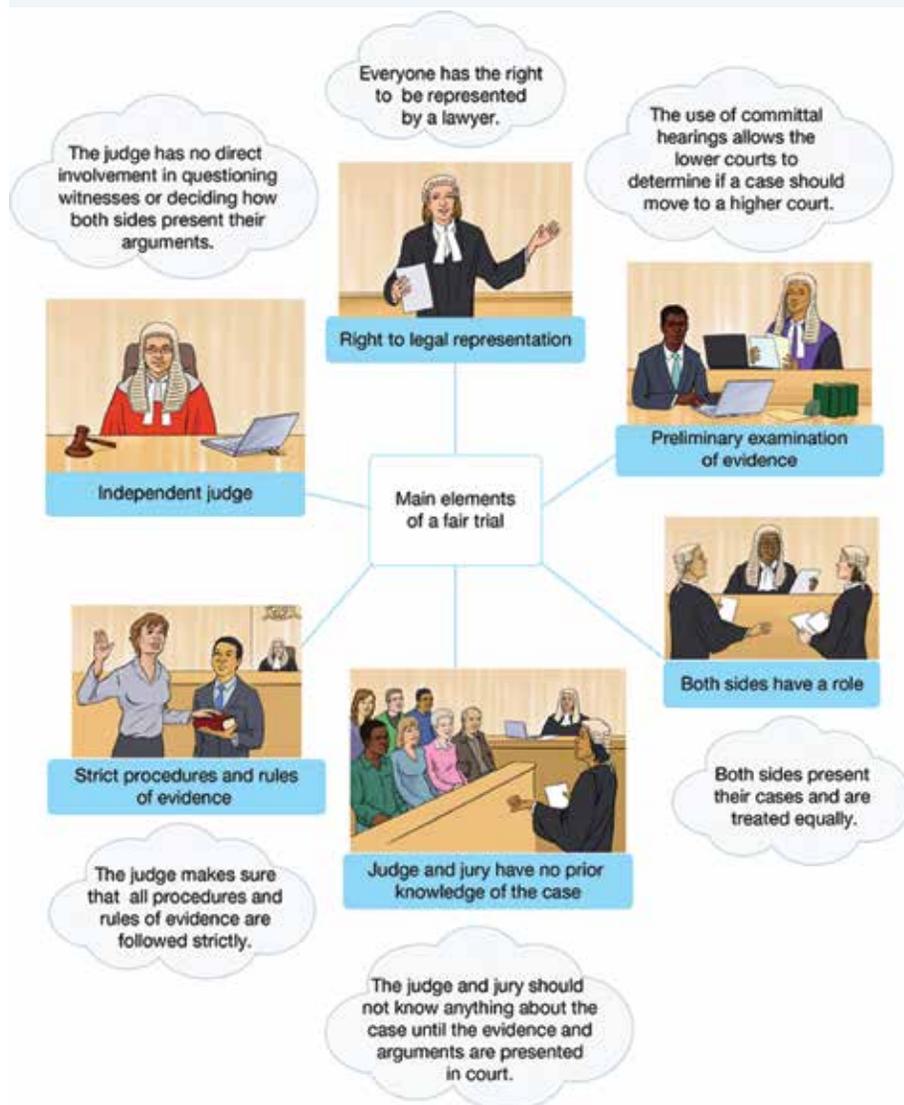
8. Discuss the advantages and disadvantages of the principle of presumption of innocence.

3.4 What is a fair trial?

3.4.1 Equal treatment for all

In Australia, we believe that our legal processes protect the right of every accused person to receive a fair trial — a trial held before a competent, independent and unbiased court recognised by law. You would presume that your side of the story would be listened to. You would expect that you would be provided with the opportunity to contest any charges made against you. You would think that the person listening to both sides would not favour either of those sides.

FIGURE 1 Main elements of a fair trial



3.4.2 Main elements of a fair trial

The main elements of a fair trial are summarised in figure 1. Let us now look at each element in more detail.

Preliminary examination of evidence

When a person is charged with a criminal offence, he or she will be told to attend a magistrates court. The magistrates courts hear minor offences and some serious cases. They also examine very serious cases to decide whether the accused person should be put on trial in a higher court. This is called a **committal hearing**. If the magistrate decides that there is enough evidence and the case is serious enough, the case will be heard in the District (or County) Court, or in the Supreme Court.

Committal hearings guarantee a fair trial because they allow an accused person to know the case against him or her. They also provide the opportunity for the accused person to gather evidence and to test the evidence of the prosecution.

Right to legal representation

In a fair trial, everyone has the right to **legal representation**. In certain cases, legal aid can be provided for people who cannot afford the cost of hiring a lawyer (see subtopic 3.5).

Both sides have a role

The right to a fair trial means that everyone is entitled to be treated equally by the court. Both sides have the right to present their case. The two opposing sides will gather evidence and present their case to an independent judge or magistrate. The side with the strongest argument is likely to win the trial.

Independent judge

The judge is very much like the umpire in a game of football. His or her job is to make sure that both sides follow the rules. Judges are independent, which means that they have no direct involvement in questioning witnesses or deciding how either side will present its arguments. The judge makes sure that all the rules of evidence and procedure are followed and that both sides are treated equally.

Judge and jury have no prior knowledge of the case

Neither judge nor jury should know anything about the case until the evidence and arguments are presented in court. Jurors must listen very carefully to the evidence given in a trial and make a decision based only on that evidence and the law. They are not allowed to discuss the case with anyone else, even after the trial has finished.

Strict procedures and rules of evidence

A fair trial will follow strict procedures. These procedures are designed to ensure that each side has an equal opportunity to present its own case as well as challenge the evidence introduced by the other side. A fair trial will also observe strict rules for the type of evidence that can be looked at in court. The procedure for a trial in a higher court with a jury is shown in figure 3.

Witnesses can be asked to give evidence at a criminal trial if they are the victim of the crime, if they have direct information about the crime or if they are an expert providing specialist opinion. Expert witnesses might give evidence on topics such as whether a written document matches the handwriting of the accused, or whether the accused person's actions might have been influenced by things such as mental illness or prescription drugs. Each witness must take an oath or affirmation promising to tell the truth.

FIGURE 2 Any citizen who is listed on the electoral roll can be randomly summoned for jury service.



FIGURE 3 Procedure for a trial in a higher court with a jury

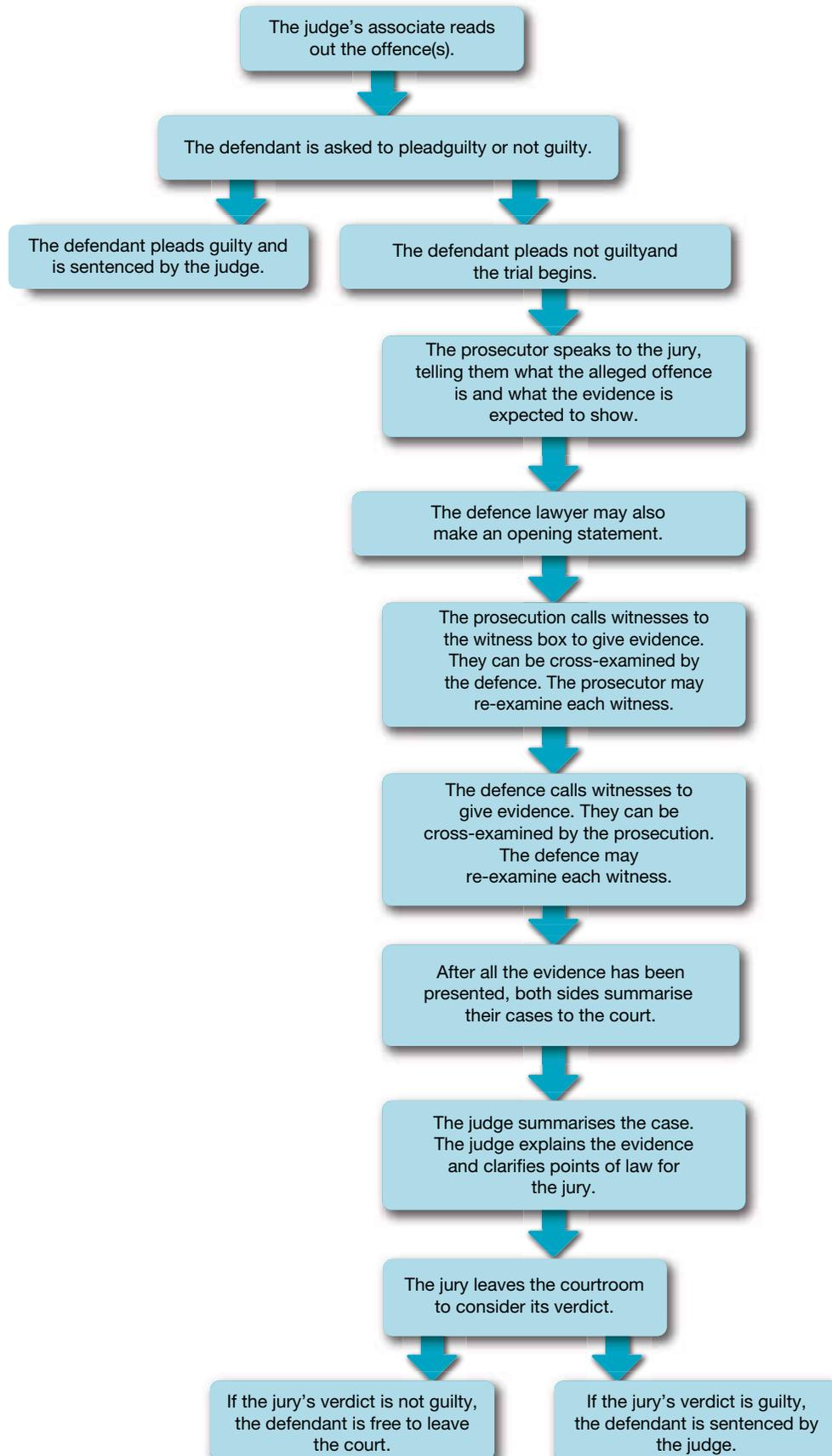
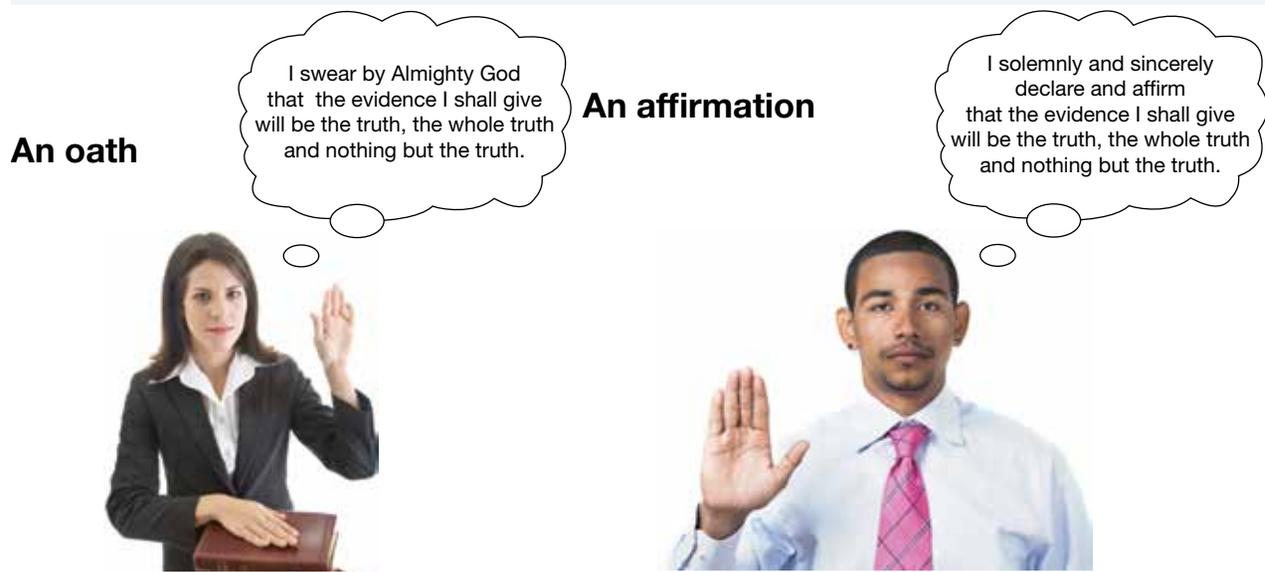


FIGURE 4 Before witnesses in court can give their testimony, they have to take either an oath or an affirmation promising to tell the truth.



3.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is a committal hearing?
2. What is legal representation?
3. Briefly outline the following elements of a fair trial:
 - (a) preliminary examination of evidence
 - (b) right to legal representation
 - (c) both sides have a role
 - (d) independent judge
 - (e) judge and jury have no prior knowledge of the case
 - (f) strict procedures and rules of evidence.

Explain

4. Draw your own diagram showing the steps involved in a trial with a jury. Use an appropriate illustration for each step to show that you understand it.
5. Explain the role of a juror and a witness in a fair trial.
6. When can a judge question a witness?
7. How does a person come to be selected to serve on a jury?

Discover

8. Using internet resources, find the website of the magistrates court in your state and research the type of cases that it hears. Does your state's magistrates court have committal hearings?
9. Using internet resources, find the website of the District (or County) Court or the Supreme Court in your state and research the type of cases that it hears.

Think

10. Roleplay a mock trial of a person who has been charged with robbing a bank. (Refer to the information in subtopic 3.2 and the process described in figure 3 to help you.) Divide up the courtroom roles — a list of

roles necessary is shown below. Allow people sufficient time to prepare their case. An example has been provided for you in the case study below. Set the classroom up like a courtroom and see if the accused receives a fair trial.

Roles in a mock trial

- Judge
- Judge's associate
- Tipstaff
- Jurors (12)
- Prosecutor
- Counsel for the defence
- Accused
- Witnesses
- Members of the public
- Members of the media
- Police officer

Sample case for a mock trial

Andrew Accused has been charged by the police with armed robbery. The police allege that on the morning of Friday 18 February Andrew entered the Bank Easy branch in Bondi. He approached the teller, Thuong Teller, and said to her, 'This is a stick-up. Fill this bag with money or you will get shot!' At the time, Thuong was serving Colin Customer. Bao Bankworker, another teller, and Maria Manager, the branch manager, were also in the bank at the time. Andrew was arrested by Purujit Policeman as he tripped in the doorway. Andrew claims that he was not carrying a gun and that he was only joking around with Thuong.

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🔗 Try out this interactivity: The court room (int-1206)

🔗 Try out this interactivity: Criminal trials (int-5313)

3.5 How can Australians receive access to justice and legal representation?

3.5.1 Difficulties in gaining access to the legal system

All Australians must have the opportunity to access **justice**. We all have the right to legal representation but, for various reasons, not all Australians can gain access to the law.

There are various reasons why people may not be able to access the legal system. Some people may have little to no understanding of the law. People with limited English may find it difficult to communicate their problem. Some people may feel intimidated by lawyers or may be unable to pay for legal representation.

Our legal system has devised ways of providing access to justice and legal representation for everyone.

FIGURE 1 Everyone has the right to legal representation under our legal system, but not everyone can afford it.

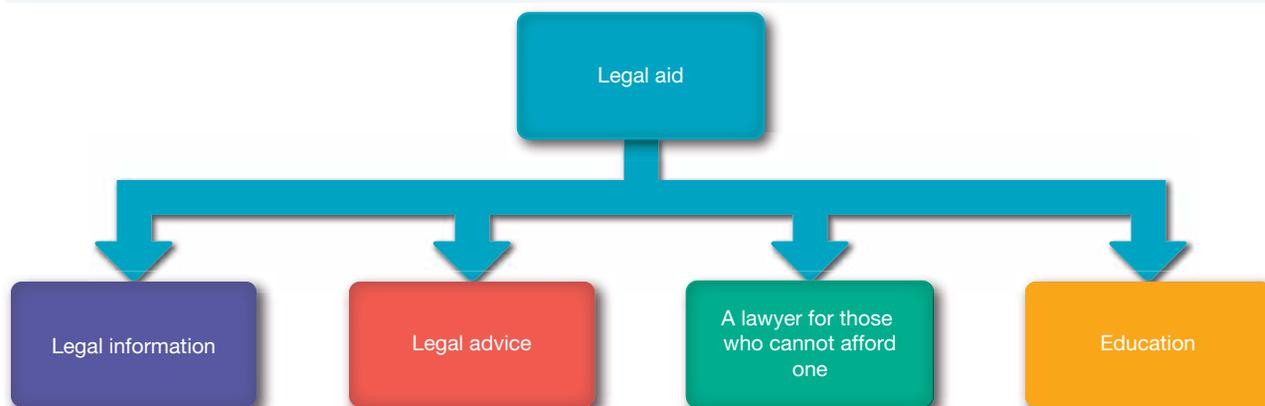


3.5.2 Legal aid

In Australia, we believe that **legal aid** is very important in providing access to justice. Without legal aid, some people would not have legal representation. They would lose their right to be treated equally by the law and therefore to receive a fair trial.

Legal aid can be provided for people who cannot afford the cost of hiring a lawyer. It is offered by several organisations including legal aid commissions, community legal centres, and Aboriginal and Torres Strait Islander legal services.

FIGURE 2 What legal aid provides



Legal aid commissions

Each state and territory has its own legal aid commission. Legal aid commissions are funded by the state and federal governments. They provide legal assistance, legal information and advice, lawyers to represent people attending court, and grants of money to help people to obtain legal representation. The services of legal aid commissions are free, unless the legal assistance required is ongoing. In this case, a small financial contribution is required.

Community legal centres

Community legal centres provide free legal advice and assistance as well as related services to the public. They focus on the disadvantaged and people with special needs. The centres may receive funds from the state and federal governments and from donations, but some centres receive no or very little money and are largely or entirely staffed by volunteers. These volunteers can be lawyers or non-lawyers.

FIGURE 3 The legal aid commissions are funded by the government and provide legal assistance, legal information and advice.



Aboriginal and Torres Strait Islander legal services

Each state and territory has an Aboriginal and Torres Strait Islander legal service, funded by the federal government. They provide legal assistance to Aboriginal and Torres Strait Islander people as well as community education in law and law reform.

3.5.3 Legal awareness

The law touches the lives of everyone, so people need to be aware of their legal rights and responsibilities. Awareness of the law can be improved through education, information and the media.

Schools teach civics and citizenship so that students have some awareness of the law. Information can be found on the internet. The website of the Attorney-General's department provides information on access to justice. Advertising is used to promote understanding of new laws so that people are aware of them.

FIGURE 4 Community legal centres are funded by the state and federal governments and donations, and provide legal advice and assistance with a focus on the disadvantaged and people with special needs.



3.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is meant by the term 'justice'?
2. What is legal aid?

Explain

3. Describe the legal assistance offered by the following:
 - (a) legal aid commissions
 - (b) community legal centres
 - (c) Aboriginal and Torres Strait Islander legal services.
4. Recommend where the following people could get legal advice. Explain why you chose each option.
 - (a) John is an elderly pensioner who has been charged with growing cannabis for commercial use.
 - (b) Tahni is an Aboriginal and Torres Strait Islander who has been charged with assault.
 - (c) Yousif has recently arrived in Australia from Africa, and has been charged with driving without a license.
5. How can legal awareness improve access to justice and legal representation?

Discover

6. If any of the organisations offering legal aid have an office in your area, invite a representative from the organisation to speak to your class or school about legal aid.

Predict

7. List the consequences of not providing options for everyone to access the law. Compare your list with the rest of the class.

Think

8. Work in groups of three or four. Identify one factor that can improve access to justice and legal representation (for example, legal aid). Create a storyboard that explains this factor and outlines how it can improve access to justice and legal representation. Produce a video presentation that will engage viewers. Show the video to your class.

3.6 SkillBuilder: Debating an issue

3.6.1 Tell me

What is a debate?

A debate is a discussion about an issue. The issue is presented as a statement — for example, ‘Using a jury is the best way to make sure a trial is fair’. Participants in the debate take it in turns to put forward arguments for and against the statement.

Unlike an argument you might have at home, a debate follows strict rules of conduct.

Why is debating useful in civics and citizenship?

A debate requires the participants to carefully investigate an issue and critically analyse both sides of the question. Participating in a debate can develop research skills. It can also help individuals gain confidence in public speaking. Debating is used by people who work in law, such as lawyers, and by people involved in politics, such as members of parliament.

FIGURE 1 The skills used in debating, including researching and analysing information, are considered very useful in the legal profession.



Model

The members of each team take it in turn to present their arguments in three to four minutes. The affirmative team’s first speaker starts the debate. The following case study illustrates how a formal debate is conducted.

CASE STUDY

Conduct of a debate

Affirmative team

The first speaker should:

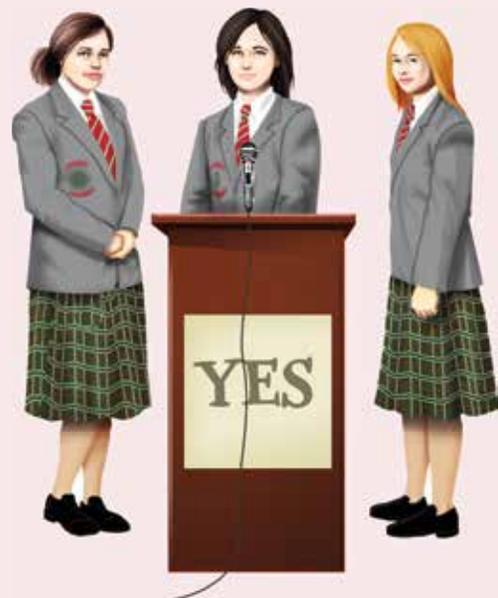
- greet the audience
- state which team he or she is representing and the issue
- introduce the other team members, their role and the team’s view
- argue the team’s case and state how the second speaker will build on this case.

The second speaker should:

- explain how his or her speech will build on the affirmative team’s view
- argue against (rebut) the first speaker from the negative team
- add new examples to support the affirmative team’s view.

The third speaker should:

- argue against (rebut) the negative team’s case
- summarise the main arguments of the debate
- restate the affirmative view, explaining why it is the stronger case
- avoid introducing new arguments.



Negative team

The first speaker should:

- introduce the team members, describe their role and the team's view
- state whether the negative team accepts the affirmative team's view of the topic
- argue against (rebut) the points made by the first speaker of the affirmative team
- state how the second negative speaker will build on the team's case.

The second speaker should:

- explain how his or her speech will build on the negative team's view
- argue against (rebut) the two previous speakers from the affirmative team
- add new examples to support the negative team's view.

The third speaker should:

- argue against (rebut) the affirmative team's case
- summarise the main arguments of the debate
- restate the negative view, explaining why it is the stronger case
- avoid introducing any new material.

Elements of a good debate

A good debate:

- has members from each team taking turns to present their cases
- starts with the first speakers from each team introducing their teams and their team's view
- continues with the second speakers rebutting the previous speakers and adding new examples to support their team's view
- finishes with both third speakers rebutting the other team's case, summarising the main arguments and restating their team's view
- has arguments that only take three to four minutes.



3.6.2 Show me

How to conduct a debate

You will need:

- a sheet of lined paper
- a pen
- a team of three people.

Procedure:

A formal debate follows a set of rules. In a debating contest (for example, in school) there are two teams of three speakers, each of whom plays a defined role. One team argues in favour of the topic (the affirmative team) and the other team argues against the topic (the negative team). You can prepare for a debate by following the steps below.

STEP 1

Form a team of three people. Find out whether your team is to debate in favour of or against the topic. As a team, examine the topic carefully and discuss what you think it is about. You may need to use a dictionary to find a definition of key words contained in the topic statement.

STEP 2

Work out what arguments support your team's case. List them in order of importance.

STEP 3

Work out what arguments do not support your team's case. This will help you to anticipate what your opponents will say.

STEP 4

Carry out research to help fully develop your arguments. As part of your research, consider interviewing other students and the adults you know to learn their attitudes to the issue.

STEP 5

- (a) Divide the arguments you have collected among the members of the team.
- (b) Decide which team members will be the first, second and third speakers. Agree on what each member will say.

3.6.3 Let me do it

Developing my debating skills

Work with a partner

1. Select one of the following topics:
 - (a) 'Our legal system should not presume that an accused person is innocent.'
 - (b) 'Judges should participate in finding evidence and questioning witnesses in criminal trials.'
 - (c) 'Legal aid should be provided to all people accused of a crime.'
2. Work on your own to compile a list of as many arguments as you can for each side of the topic.
3. Convince your partner in two minutes that you support the topic.
4. Your partner has two minutes to question you about the topic.
5. Reverse the roles in steps 3 and 4 above.

Class debate

As a class, decide on the topic to be debated. Follow the steps given above to prepare for and conduct the debate.

Evaluating the debate

Use the following list to evaluate the performance of each team:

1. The team's viewpoint was clearly outlined.
2. Speakers' statements were well researched.
3. Speakers gave clear reasons to support their view.
4. Examples were used to support arguments.
5. Responses to arguments made by the other team were effectively made.
6. The concluding statements were convincing.
7. Speakers spoke loud enough to be heard.
8. Speakers made good eye contact with the audience.
9. Speakers spoke at a good pace (not too fast or too slow).
10. The overall performance of the team was effective.

Questions

1. How did you decide what your point of view would be?
2. What aspect of compiling a list of arguments did you find relatively easy and what did you find more challenging?

3.7 Review

3.7.1 Summary

Every individual has the right to access justice in Australia. Our legal system exists to make sure that any person accused of a crime receives a fair trial. The accused is presumed to be innocent by a court until the prosecution proves that he or she is guilty. Both the prosecution and defence will have the opportunity to present evidence and question witnesses before a judge who is competent, independent and unbiased.

Everyone has the right to be represented by a lawyer in court, regardless of whether or not they can afford it or even understand the law.

- Presumption of innocence means that any accused person who appears before a court is presumed to be innocent until the prosecution proves that they are guilty beyond reasonable doubt.
- A fair trial occurs when evidence is examined at a committal hearing before proceeding to a trial, when both sides present their case, when the judge is independent, and when strict procedures and rules of evidence are followed.
- Ordinary citizens can play a part in a fair trial in their roles as witnesses (providing evidence to the court) and jurors (making decisions about the guilt of the accused based on the law and the evidence presented to the court).
- Legal aid can be provided to people involved in a dispute or criminal matter who would otherwise be unable to afford legal representation or access to the law.
- People can be made aware of the law through education, information and the media.

3.7.2 Your turn

1. Read the following case study and then answer the questions.
 - (a) Why do you think that Victoria wanted to introduce changes to its jury directions laws?
 - (b) Does Victoria's Attorney-General seem to think that juries are important? What makes you believe this?
 - (c) In what way will shorter and simpler jury instructions affect jurors and the right to a fair trial?

In July 2009, Victorian Attorney-General Robert Clark launched a report by the Victorian Law Reform Commission on jury directions. The report found that the process used for judges giving instructions to juries in Victoria encouraged errors in the justice system.

A Jury Directions Advisory Group had been established earlier to explore whether change could be made to the system. The main focus was the lengthy and complicated instructions that judges give to juries.

'Complex jury directions lead to unnecessary appeals and retrials that are a significant cause of delay in the court system, as well as unnecessary trauma and stress for victims, witnesses and others,' Mr Clark said.

Research suggests that instructions to juries in Victoria were approximately two hours longer than in Queensland, South Australia and Western Australia. Estimates for New South Wales were reasonably similar to Victoria.

After the review, Victoria's parliament introduced new laws which encourage shorter and simpler jury instructions that focus on the important issues that juries must focus on in a trial.

2. Group work

Work in groups of three or four. Identify one factor that can improve access to justice and legal representation (for example, legal aid). Create a storyboard that explains this factor and outlines how it can improve access to justice and legal representation. Produce a video presentation that will engage viewers. Show the video to your class.

learn on RESOURCES – ONLINE ONLY

 Try out this interactivity: The legal system and you crossword (int-5314)

UNIT 2

PRODUCING AND CONSUMING

4 Consumers and producers 49

5 Entrepreneurship 64

6 Working for a living 81

TOPIC 4

Consumers and producers

4.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

4.1.1 Your role in the economy

On television news, current affairs programs and other media, we frequently hear politicians and commentators referring to the ‘Australian economy’. What is the ‘economy’ and how does it work? In simple terms, the Australian economy is the total of all activities undertaken within Australia, for the purpose of producing, distributing and consuming goods and services.

You are an important part of the economy because you spend money whenever you choose to buy goods and services to satisfy your needs and wants. (Even if you don’t spend the money yourself directly, other people — such as your parents — may spend money on your behalf or for your benefit; for example, by paying for your visits to the doctor or dentist, clothes, food and education.)

Businesses rely on consumers like you to buy their goods and services. By choosing to spend some of your money, you send a signal to **producers** to keep making the products you buy and to continue employing people to make the products or provide the services you buy. Employees who work in a business are also **consumers** because they spend the money they have earned on the goods and services they wish to buy.

So, as a consumer, your purchase of an item of clothing, an iPod, a snack or any other good or service makes you a part of the economy. Similarly, any work that you do, whether as a part-time or casual employee, involves you in the production side of the economy. Your contribution may not be as great as a shipload of coal, or have the same impact as that of a large business or full-time employee, but it does have an influence on the way the economy works.

FIGURE 1 Goods and services bought by or for you make you an important part of the economy.



FIGURE 2 Many teenagers have part-time jobs that contribute to the economy.



Starter questions

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

1. Identify three items you have purchased in the last week. How do you think the choices you made have affected businesses that you bought from?
2. How do you think your choices have affected businesses you have not bought from?
3. In what way do you think the choices you make can affect the Australian economy as a whole?

4. Do you shop around at a number of different places to find the best price for something you wish to buy? Explain why you do or do not follow this practice.
5. Australia is very involved in trading with other countries. How many items have you bought lately that have come from other countries? What sort of effect do you think these purchases might have on the Australian economy?

INQUIRY SEQUENCE

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learn on RESOURCES – ONLINE ONLY

 Watch this eLesson: What is economics? (eles-0253)

4.2 The importance of businesses as producers

4.2.1 Producers and consumers

It is sometimes said that ‘money makes the world go around’. Of course this is not physically true, but it does sum up the way the economy works. In simple terms, the economy consists of producers, who make and sell goods and services, and consumers, who buy the goods and services. Producers pay their employees with money, and also hope to make money themselves out of what they sell. This money is used to buy goods and services from other producers. Producers rely on consumers to buy from them, and consumers rely on producers to provide the goods and services they want. Money allows this relationship to work.

4.2.2 Needs and wants

Imagine you have survived an aeroplane crash and find yourself alone on a desert island. In order to survive, you will have to find those things that are essential for survival — food, water and shelter from the weather and from danger. These are the basic **needs** that we must all have whether we are on a desert island or in the comfort of our home.

As well as these needs, there are additional things we might like to have on the desert island to make life more comfortable. These could include a bed, a torch, a fishing rod, a comb or a toothbrush, and a table and chair. These things are called **wants**. Although we would like to have these possessions, we could survive without them.

FIGURE 1 Even on a desert island, you have basic needs that must be satisfied if you are to survive.



TABLE 1 Needs versus wants

	Definition	Examples	Properties
Needs	Goods or services that are essential for life	Water, food, shelter, air, clothing, medication	<i>Finite list:</i> <ul style="list-style-type: none">• They must be satisfied if life is to continue.• They remain throughout life.• They temporarily wane when satisfied.
Wants	Non-essential goods and services	Torch, bed, fishing rod, armchair, toothbrush	<i>Unlimited list:</i> <ul style="list-style-type: none">• Life can continue without them.• Wants change throughout life.• New wants arise once others are satisfied.

4.2.3 Goods and services

In order to satisfy our needs and wants, we purchase goods and services. **Goods** are classified as the physical items that satisfy our needs and wants, and that we can see and touch. They include food, TV sets, cars, refrigerators, bottles of soft drink and clothing. **Services** are classified as the actions done for you by others, which are designed to satisfy needs and wants. They include the services provided by doctors, dentists, banks, mechanics and teachers. If you are stranded alone on a desert island, you will have to

find or make all the things you need and want. In effect, you would be a one-person economy because you would be responsible for both producing and consuming all the goods and services. In a modern economy, we generally rely on businesses to provide us with goods and services.

FIGURE 2 In a modern economy, we generally rely on businesses to provide us with goods and services.



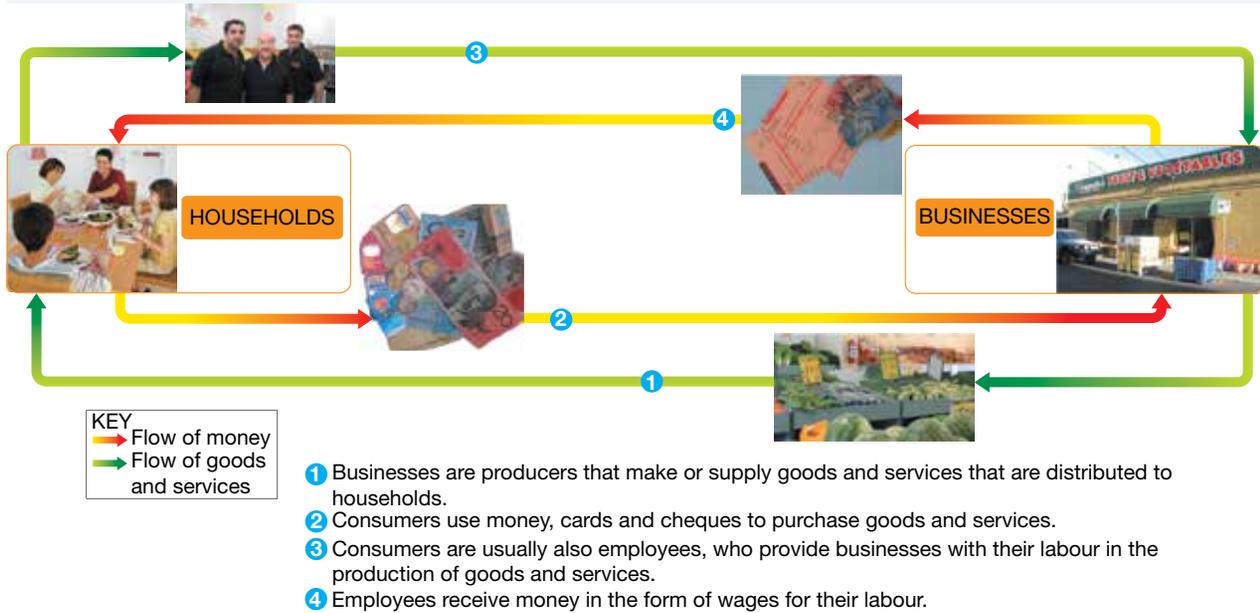
4.2.4 The relationship between businesses and consumers

In the Australian economy, we satisfy our needs and wants by working to earn money and then buying goods and services from businesses that produce them. When we are working, we are providing our **labour** to contribute to the process of producing goods or services for other consumers to buy. When we are spending our money, we are consumers, purchasing goods and services that others have produced in order to satisfy our needs and wants.

In order to satisfy needs and wants, consumers like you make economic decisions every day. For example, you may decide to buy milk from a supermarket rather than from a dairy, catch a bus to school rather than walk, use a loose-leaf folder rather than a bound notebook, buy a can of Australian tinned food rather than one from overseas. Your decisions influence what businesses produce and therefore affect the economy.

We can examine the relationship between businesses and consumers by looking at the model in figure 3. It demonstrates how labour is exchanged for money, and how that money is used to purchase goods and services.

FIGURE 3 The interrelationship between consumers and business



4.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is the difference between needs and wants?
2. What do we mean by the term 'labour'?
3. Name three types of business that provide goods.
4. Name three types of business that provide services.

Explain

5. In what ways can an individual be both a producer and a consumer in an economy?
6. In what ways are producers and consumers dependent on each other?

Predict

7. Could the relationship between producers and consumers succeed without money? What do you think might have to happen if there was no such thing as money?

Think

8. List five goods and five services that you or members of your family have purchased in the last week.
 - (a) Identify one good from your list, and name the business that most benefited from that purchase.
 - (b) Examine the components that make up that particular good. Identify any other businesses that might have benefited indirectly from the purchase of that good.
 - (c) Identify a service from your list, and name the business that most benefited from that purchase.
 - (d) What equipment did the supplier of that service use? Identify any other businesses that might have benefited indirectly from the purchase of that service.

4.3 Responding to consumer demand

4.3.1 What consumers want

Any producer wishing to be successful in business must supply goods or services that correspond with the needs and wants of consumers. It is no use trying to sell something that nobody wants to buy. The ability to understand and act on consumer preferences is an important skill for anyone wishing to go into business.

4.3.2 The marketplace

A market is any organised exchange of goods and services for money. This can occur in a physical marketplace such as a shopping centre, but it can also occur without any actual physical location. When we purchase goods or services online or over the telephone, we are still participating in a market.

A market has to provide a means for consumers to find out about the goods and services available. This can occur when consumers physically walk into a shop and examine the goods on display. It can also occur when consumers visit a website, or look up different businesses in a telephone directory such as the Yellow Pages.

A market also has to provide a means for consumers to pay for the goods or services they are purchasing, and a means for them to receive those goods or services. In a physical shop, this is fairly simple: we visit the premises, receive the good or service, and then pay (by handing over cash or using a card or smartphone) as we leave. An online market usually requires some means of online payment, and a postal or other delivery service to bring the goods to the consumer.

We usually think of a market in relation to the particular goods and services being sold. For example, there is a market for groceries, where different businesses compete with each other to provide consumers with different products. There is a market for takeaway food, with different restaurants offering a variety of choices for consumers. If one shopping centre has two or more hairdressers, this constitutes a market for hairdressing services.

4.3.3 Responding to consumer demand

How does a business owner find out what consumers want?

- *Analyse the business's sales.* There is no point in stocking products that no-one wants to buy, so a business owner will always be monitoring sales to identify the most popular products and ensure that sufficient quantities of them are held in stock.
- *Carry out market research.* This includes surveys of consumers to identify possible future consumer preferences.

FIGURE 1 The internet is an important tool that allows consumers to find out about goods and services available to them.



FIGURE 2 Hairdressers compete with each other in a market for hairdressing services.



- *Examine social trends.* This requires finding out what sorts of issues people are concerned about and then responding to those concerns. Examples include the desire for a healthy lifestyle, environmentally friendly products and organic food.

Healthy lifestyle

We regularly see and hear stories in the media suggesting that much of our modern lifestyle is harming our health. Obesity is a growing problem, and eating unhealthy foods and not exercising are seen as a danger to wellbeing. As consumers become more aware of possible health issues, they are likely to look for healthy options when buying goods and services. Producers respond to these concerns by trying to make their products appear as healthy as possible.

We see this most commonly in food packaging. Phrases such as ‘low in cholesterol’, ‘98 per cent fat-free’ and ‘no added sugar’ are all designed to appeal to the health-conscious consumer. Packaging laws in Australia require that all ingredients are listed on food packets, so we have a way of checking some of these claims and comparing different products. While not all health claims on food packaging are necessarily honest or accurate, competition between similar products in the marketplace allows consumers to make the healthiest choices if they wish to do so.

Concerns about health also lead to new goods and services being introduced into the economy. Next time you visit a supermarket or pharmacy, take note of the huge number of vitamins and other dietary supplements on sale. This has been an area of enormous growth in recent years, with millions spent on TV advertising to promote the latest products. In addition, gyms and personal trainers have increased in number as consumers try to adopt healthier lifestyles. All of this growth in the businesses providing such goods and services is an example of the way markets can respond to consumer preferences.

Environmentally friendly products

Over the past 40 years, we have become more aware of our impact on the environment and the need to reduce pollution. Businesses that can demonstrate that they used environmentally friendly methods to produce the goods and services they provide might be more appealing to consumers. You may have seen cans of tuna with the claim ‘pole and line caught’ on the packaging. For many years, tuna fishers have used methods that accidentally caught many other types of fish, some of them endangered species. Pole and line fishing allows only tuna to be caught, and so is more environmentally friendly. Consumers have shown a preference for this type of product.

FIGURE 3 Gyms and personal trainers have increased in number as consumers become more health conscious.



FIGURE 4 Consumers have shown a preference for environmentally friendly methods of catching tuna.



Other examples of environmentally friendly products include cosmetics produced by The Body Shop, which endorses environmentally sustainable production methods and has always promoted the fact that none of its products are tested on animals. Washing detergents will often advertise that they are biodegradable and so will not harm the environment. Electrical goods are often sold with a sticker indicating their level of energy efficiency. All of these are examples of producers responding to consumer concern for the environment.

Organic food

Combining both environmental concerns and a desire for healthy food options is the growth in demand for organic food. It is generally understood that food labelled as 'organic' has been grown without the use of pesticides and other chemicals, and so is a more healthy choice. In addition, if the grower has not used these chemicals, there is less risk of them causing damage to other plants or animals, or harming the environment in other ways. As well as fresh fruit and vegetables, many packaged foods now carry the word 'organic' on their packaging to appeal to consumers.

Successful businesses will always make sure they are aware of consumer preferences, and will attempt to adapt their goods and services to meet these preferences.

FIGURE 5 Organic fruit and vegetables are seen to be both healthier and more environmentally friendly.



4.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is a market?
2. Outline two ways in which a business owner can find out what consumers want to buy.

Explain

3. Identify and explain two conditions that are required for a market to work.
4. Explain one way in which producers have responded to consumers' desire for a healthy lifestyle.
5. Why does the demand for organic food demonstrate both a desire for healthy food options and an awareness of environmental issues?

Discover

6. Visit your local supermarket and identify four food products that claim to be healthy options.
 - (a) Explain what particular claim is made for each product.
 - (b) How does the labelling for each product attempt to get across a healthy message?
7. Use internet resources to find:
 - (a) how pole and line fishing is more environmentally friendly than other methods
 - (b) the name of three brands of canned tuna that use fish caught by pole and line.

Think

8. The types of businesses that operate in the hairdressing market include hairdressing salons; manufacturers of shampoo, conditioners and hair dyes; manufacturers of scissors and combs; suppliers of electrical goods such as hairdryers and electrical trimmers; towel suppliers; and furniture businesses. Identify as many businesses as you can that operate in the following markets:
- (a) takeaway food market
 - (b) bicycle sales and repairs market
 - (c) gymnasium and fitness market.

4.4 Determining prices

4.4.1 Deciding on price

One of the most important decisions that any business owner has to make is how much to charge for their goods and services. This will have a major impact on the success of the business, as prices set too high may drive away potential customers while prices set too low may make it difficult to achieve a **profit**.

Businesses can determine their prices by using the recommended retail price, following price leaders, using percentage mark-ups, pricing according to what the market will bear, or offering quotes to customers.

4.4.2 Recommended retail price

Sometimes the manufacturer of a product may provide a recommended price that can be used by **retail** businesses selling that product to consumers. Manufacturers of electrical goods often do this. This price is known as the recommended retail price (RRP). Such a price can only be a recommendation, as it is illegal in Australia for any manufacturer to dictate the price at which any product can be sold to the public. Nevertheless, the RRP can provide a useful guide to the retail business owner, particularly when starting a new business.

4.4.3 Price leaders

Some businesses are more influential in a particular market than others. These businesses are often price leaders — they tend to set the prices rather than follow the prices set by others in the market. In the food and grocery market, the two big supermarket chains (Coles and Woolworths) tend to be price leaders. To survive, smaller supermarkets must be competitive with at least some of the prices of those larger stores, so their owners will carefully monitor the price leaders. All businesses need to adjust their prices from time to time to ensure their prices are competitive when compared with the prices charged by other suppliers in the same market. They will often look to price leaders as a guide to what is a reasonable price.

FIGURE 1 Electrical goods often have a recommended retail price.



FIGURE 2 Large supermarkets are often price leaders in the grocery market.



4.4.4 Percentage mark-ups

Using a **percentage mark-up** is a common way of determining prices. If it costs a certain amount for the retail business to buy the product, a percentage can be added to that cost to ensure the retailer makes a profit. Assume a clothing store has a percentage mark-up of 25 per cent. A pair of jeans is bought by the business for \$100. With a 25 per cent mark-up, the jeans will have a selling price of \$125. This \$25 is used to cover the other costs of the business, such as wages and electricity bills, and to contribute to the business' profits. The business owner has to calculate an appropriate percentage mark-up to allow this to happen.

4.4.5 What the market will bear

When setting prices according to what the market will bear, the seller attempts to get as high a price as possible while ensuring that the price is not too high for consumers to pay. The best example of this type of price setting can be seen at an auction. Many houses and other properties are sold through this method. People attending the auction determine the price by bidding against each other until one of two things happens: either one bidder outbids all other buyers and becomes the successful buyer, or the property does not sell because no-one is prepared to pay the price the seller wants. In the latter case, the seller and the highest bidder can come together after the auction to negotiate a price that is acceptable to both of them.

Of course, not all businesses can sell their goods or services through an auction process, so determining prices based on what the market will bear often comes down to the experience of the business owner. An ability to understand consumer preferences is an important skill for a business owner. Listening to customers, following what is happening to the products throughout the market, and monitoring the prices charged by competitors are all important activities for a business owner.

FIGURE 3 The percentage mark-up on products is used to cover business expenses and provide a profit to the business owner.



FIGURE 4 House auctions are a good example of prices being determined by what the market will bear.



FIGURE 5 Listening to customers can help a business owner to determine what level of prices the market will bear.



4.4.6 Quotes

Many service businesses will set a price by offering a quote to a consumer to perform certain work. A business such as a plumber or electrician might find that the amount of labour and the cost of materials used can vary from job to job. Preparing a quote for each new job may be a better way to determine the price. A quote is an estimate of the costs involved in an individual job, plus a certain amount so the business makes a profit. Consumers will sometimes seek out quotes from a number of competing businesses before choosing one.

FIGURE 6 Tradespeople such as plumbers often use quotes as a means of determining the prices they charge.



4.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is a recommended retail price?
2. What makes a business a price leader? Give one example of a price leader.
3. How would a tradesperson calculate a quote for a customer?

Explain

4. Why can't a manufacturing business force all retailers that sell its products to sell at the recommended retail price?
5. What factors does a business owner have to take into account when calculating a percentage mark-up to apply to goods for sale?
6. Explain why an auction is a good example of a price being determined by what the market will bear.

Think

7. A business selling lawnmowers pays suppliers \$400 for each mower it buys for resale. It sells 10 mowers per week. Each week the owner pays \$1000 in wages to an assistant, \$800 in rent on the shop, and has gas, electricity and water bills of \$200. For each of the following percentage mark-ups, calculate how much profit the owner would make in a week:
 - (a) 50 per cent mark-up
 - (b) 75 per cent mark-up
 - (c) 100 per cent mark-up.

4.5 Influencing overseas producers

4.5.1 Exports and imports

Australia is a major trading nation. Australian businesses import (buy goods and services from other countries) and export (sell goods and services to other countries) in order to meet the needs and wants of Australian and overseas consumers. Producers all over the world will not only try to satisfy the demands of consumers within their own country, but will also look for every opportunity to sell goods and services to consumers in other countries as a means of increasing profits.

4.5.2 Exports and Australia

Australia has always been involved in trade, ever since the colonial days. From the 1820s we exported wool to many other countries, particularly Great Britain. In the 1850s, the discovery of large deposits of gold meant that we became one of the world's largest exporters of this precious metal. We have also always imported many of the goods we want. With a comparatively small population, it has always been expensive to set up factories in Australia to make the goods we need, so it has often been cheaper to import goods from other countries.

FIGURE 1 Australia was a major exporter of wool for more than 100 years.



Why are exports important?

According to recent government statistics:

- More than 44 500 different businesses in Australia are currently exporting goods and services to other countries.
- Exports bring in over \$300 billion in income for Australian businesses each year.
- Almost 25 per cent of Australia's total income comes from exports.

It is through exports that much of our national wealth is created.

In addition, money that we earn from our exports can be used to pay for imports of the goods and services we need.

FIGURE 2 Australia is a major trading nation, exporting and importing many different goods and services.

4.5.3 Imports and Australian consumers

Australia imports a wide range of products. There are many reasons for this, but the cheaper cost of imported goods is usually a major factor.

Australian manufacturers may not be able to make a product as cheaply as it can be made in another country, so they simply import the product. Most of the electrical goods that we buy, for example, are manufactured in various Asian countries. Everything from flat-screen TVs to washing machines and air conditioners are manufactured in countries such as Japan, South Korea and China. It is difficult to find an Australian-made product in these categories.

Many imports are brought into the country as cheaper alternatives to the Australian-manufactured products. You can see this on the supermarket shelves, where the cheaper home-brand version of a particular type of food is often an imported alternative to the Australian-made product. Imported ingredients or components



are often used in products that are assembled in Australia. For example, Australian juice companies that use fruit from local suppliers may still import juice concentrate from overseas and mix it with the local product.

Australian consumers influence overseas businesses

Most imported goods coming into Australia are purchased by Australian retail businesses expecting to sell these on to local consumers. Although consumers in this country are increasingly buying goods from overseas themselves through online purchases, it is mostly retail businesses that import large container loads of electrical goods, footwear, clothing, toys, sporting equipment and other goods from producers in other countries. Just as Australian manufacturers are influenced by Australian consumer preferences to produce particular types of goods and services to match those preferences, businesses that import goods must also be aware of those preferences. This means they will only order goods from overseas producers that they know Australian consumers will buy. Those overseas producers may have to be aware of consumer preferences in a variety of different countries (not just Australia) if they are to be successful.

Advantages and disadvantages of importing goods from overseas

Importing goods and services can have both positive and negative effects on the Australian economy. This is illustrated in table 1.

FIGURE 3 Electrical goods such as flat-screen TVs are usually imported from Asian countries.



FIGURE 4 Workers in a textile factory in Laos manufacture clothes to sell in Australian shops.



TABLE 1 Advantages and disadvantages of imports

Advantages	Disadvantages
<ul style="list-style-type: none"> • There is a much larger range of goods and services for consumers to buy. • It forces Australian producers to make goods and services more efficiently, as they have to compete against cheaper imported products. • Importing goods from other countries can encourage people in those countries to buy products from us. • Australian workers have the opportunity to live and work overseas and learn other languages and cultures. • Trade between countries encourages peaceful relationships between those countries. 	<ul style="list-style-type: none"> • Australian jobs may be lost to countries with lower wages, particularly in manufacturing. • Australian industries have found it difficult to compete with the lower production costs of some overseas countries. This has led to a closure of industries, such as motor vehicle manufacture. • Money leaves the country, adding to the wealth of overseas producers instead of remaining in Australia. • We may become too dependent on imported goods and lose the skills to produce these ourselves. • Harmful animal species as well as diseases, such as bird flu, may inadvertently be brought into the country on ships bringing in imported goods.

4.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is the difference between imports and exports?
2. Give two examples of goods that Australia imports.

Explain

3. Give two reasons why exports are important for the Australian economy.
4. How would an overseas manufacturer know what products to sell to Australian consumers?

Discover

5. Follow the **Australian Government Department of Foreign Affairs and Trade** weblink in the Resources tab to help you answer the following questions:
 - (a) Which country is the major source of our imports?
 - (b) What percentage of our exports went to the United States?
 - (c) Which country provides Australia's largest source of export income?
 - (d) Which country is the largest supplier of services to Australia?
 - (e) Which countries are our top three trading partners?
 - (f) What was the value of our total exports in the most recent year in the statistics, and what was the total value of our imports for the same period?

Think

6. Using the information in table 1, design a poster to encourage Australians to buy Australian-made products rather than imported products.

learnon RESOURCES – ONLINE ONLY



Explore more with this weblink: Australian Government Department of Foreign Affairs and Trade

4.6 SkillBuilder: Communicating

4.6.1 Tell me

In subtopic 4.4 we discussed the different methods of determining prices for goods and services, including 'what the market will bear'. This method of price setting usually involves some interaction between buyers and sellers, where the buyers want to pay as low a price as possible while the sellers would like to charge as high a price as possible. From these two different sets of preferences, the market will usually arrive at a price that is acceptable to both buyers and sellers. We can demonstrate how this works by using simple tables and graphs.

4.6.2 Show me

Imagine a fruit and vegetable market such as the Queen Victoria Market in Melbourne, Paddy's Markets in Sydney, or the Fremantle Markets in Western Australia. These markets have a number of different businesses all competing against each other, allowing buyers to browse the different stalls and compare prices and quality. All stalls sell potatoes, and most sellers agree on the following:

- If they could charge \$10/kg, they would happily supply 100 kg of potatoes for sale each day.
- If they could only charge \$5/kg, they would only provide 50 kg for sale a day.
- If they could only charge \$2/kg, they would only supply 20 kg of potatoes for sale a day and concentrate on selling other fruit and vegetables that would make a bigger profit.

Buyers have a different point of view: they want to buy at the cheapest price possible. They agree on the following:

- If potatoes cost \$10/kg, only a small number would buy potatoes and then only in small quantities: a total of 20 kg in any given day.
- If the price dropped to \$8/kg, buyers might purchase 30 kg a day.
- If the price fell to \$6/kg, buyers might purchase 40 kg a day.
- If the price fell to \$4/kg, buyers might purchase 60 kg a day.
- If the price fell to \$2/kg, buyers might purchase 80 kg a day.

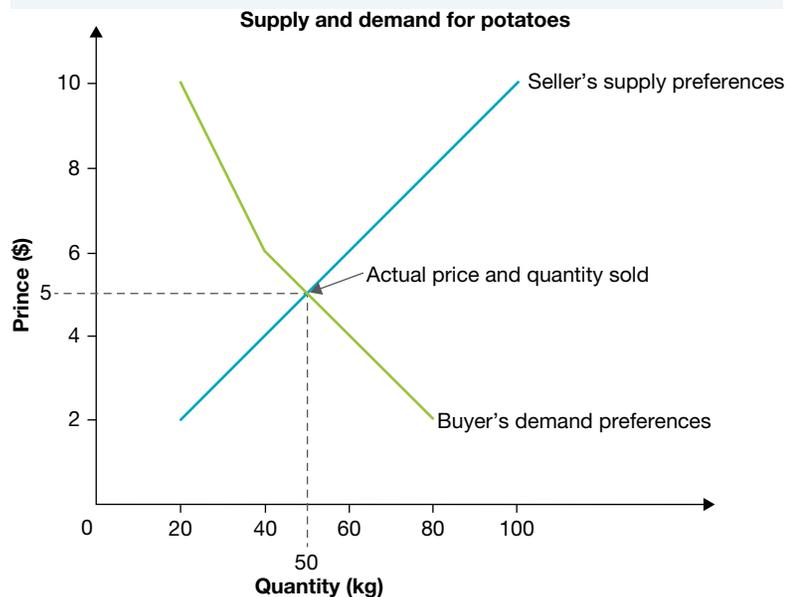
We can see that as the price rises, suppliers will supply more but consumers will demand less. As the price falls, consumers will demand more but suppliers will supply less. What is the likely price that will be acceptable to both buyers and sellers? We can start to answer this by putting the above data into tables:

Sellers' preferences	
Price	Quantity supplied
\$2	20 kg
\$5	50 kg
\$10	100 kg

Buyers' preferences	
Price	Quantity purchased
\$10	20 kg
\$8	30 kg
\$6	40 kg
\$4	60 kg
\$2	80 kg

The data from these tables can now be entered into a graph (see figure 1). If we place the different prices along the vertical axis and the different quantities along the horizontal axis, we can plot the preferences of both buyers and sellers on the graph. The sellers' preferences are shown with the blue line, while the buyers' preferences are shown with the red line. The point at which the two lines intersect will be the price that the market will bear. The market for potatoes will settle at a point where 50 kg of potatoes will be sold each day at a price of \$5/kg. Sellers know that if they have 50 kg of potatoes in stock on any given day, they will be able to sell them all at this price.

FIGURE 1 Supply and demand graph for potatoes



1.6.3 Let me do it

In the same fruit and vegetable market, tomatoes are also subject to similar buyer and seller preferences.

Sellers agree on the following:

- If they could charge \$14/kg, they would happily supply 140 kg of tomatoes for sale each day.
- If they could only charge \$7/kg, they would only provide 70 kg for sale a day.
- If they could only charge \$3/kg, they would only supply 30 kg for sale a day.

Buyers generally agree on the following:

- If tomatoes cost \$14/kg, buyers would demand a total of 30 kg in any given day.
- If the price dropped to \$10/kg, buyers might be prepared to purchase 40 kg a day.
- If the price fell to \$8/kg, buyers might purchase 60 kg a day.
- If the price fell to \$6/kg, buyers might purchase 80 kg a day.
- If the price fell to \$4/kg, buyers might purchase 100 kg a day.

(a) Draw up a table showing the different quantities that sellers would be prepared to supply at each price level

(b) Draw up a table showing the quantities that consumers would demand at each price level.

- (c) Enter the data from these tables onto a graph that shows both sellers' supply preferences and buyers' demand preferences.
- (d) What is the price per kilogram that the market would bear, and what quantity would be sold at that price?

4.7 Review

4.7.1 Summary

The Australian economy is the total of all activities undertaken within Australia for the purpose of producing, distributing and consuming goods and services. We participate in the economy in many ways:

- We purchase goods and services to satisfy our needs and wants.
- Employees provide labour to businesses and receive money in return, enabling them to purchase goods and services from other businesses.

Much of our participation occurs in a market:

- A market is any organised exchange of goods and services for money, with many different markets operating in the economy as a whole.
- Markets in Australia are influenced by what consumers wish to buy, including products that are healthy and environmentally friendly.

When participating in a market, we are concerned about the price we have to pay:

- Businesses can determine their prices by using the recommended retail price, following price leaders, using percentage mark-ups, pricing according to what the market will bear, or offering quotes to customers.

Some of our participation in the economy involves trade:

- Australia is a major trading nation, with large volumes of exports and imports traded with countries all over the world.

learn on RESOURCES – ONLINE ONLY

 Try out this interactivity: Consumers and producers crossword (int-5418)

4.7.2 Your turn

Vanessa operates a kitchenware business. She sells cooking utensils, plates, cutlery and kitchen appliances. Vanessa employs three people in her shop, which is located in a busy shopping centre. There is no other specialist kitchenware retailer in the shopping centre, but there is a supermarket that sells some kitchen utensils and an electrical retailer selling some kitchen appliances.

1. Explain two ways in which Vanessa is participating in the economy.
2. Outline how her employees contribute to the economy.
3. What advantages might Vanessa have in the local market for kitchenware?
4. Identify and explain one method Vanessa can use to identify the preferences of her customers.
5. Which businesses in this market are likely to be price leaders in the kitchenware market? Give reasons for your answer.
6. If Vanessa decides to use percentage mark-ups to determine the prices she charges, what are two factors she will have to consider in her calculations?
7. Explain one way in which Vanessa's business is probably participating in international trade.
8. Identify and explain one advantage and one disadvantage of this participation.

TOPIC 5

Entrepreneurship

5.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

5.1.1 It starts with an idea

All businesses originally start with an idea. That is how Bakers Delight began. Roger and Lesley Gillespie established Bakers Delight in 1980 as a small bakery on Glenferrie Road in Hawthorn, a suburb in Melbourne. There are now more than 700 Bakers Delight bakeries around the world. The success of the Gillespies' business comes down to their hard work and their apparent lack of the fear of failure. The owners state that the name 'Bakers Delight' originated from the belief that bakers should be delighted by the product they bake and that every customer should be delighted by the service they receive. This idea still drives what Bakers Delight does today.

FIGURE 1 Roger and Lesley Gillespie from Bakers Delight



Starter questions

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

1. Why do you think that Roger and Lesley Gillespie started Bakers Delight?
2. Would you like to start your own business? What would you sell?
3. At what age do you think you are allowed to start a business?
4. How would you feel if you started a business and it became very successful?
5. What does an entrepreneur do?

INQUIRY SEQUENCE

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 Explore more with this weblink: Small business entrepreneur video

5.2 What is an entrepreneur?

5.2.1 Turning ideas into a business

Not everyone knows how to turn their ideas into a **business**. A person who is willing to take a risk and has the qualities required to turn an idea into a successful business is called an **entrepreneur**. An entrepreneur's methods are sometimes regarded as groundbreaking and innovative. For these people, the opportunity to explore untapped markets with no guarantee of success can be motivation itself. However, for those whose ideas translate into a successful business venture, the **profits** are often huge.

5.2.2 So what is an entrepreneur anyway?

An entrepreneur is someone who could be just like you.

Entrepreneurs:

- have great ideas and do something about them
- hunt for opportunities to promote their ideas
- thrive on the challenge of creating their own successful business
- make money out of solving problems and selling their ideas
- usually start up their own businesses.

How old do you have to be?

Any age! If you have a great idea and the determination to make it happen, you could join this list of young entrepreneurs who enjoy some huge success stories:

- Eagle Boys Pizza was created by a 23-year-old from Albury, New South Wales.
- Subway sandwiches were the brainchild of 17-year-old US-based Fred DeLuca.
- Rip Curl, an Australian company, was started up in the Australian backyard of surfers Brian Singer and Doug Warbrick.
- Dell Computers was set up when 18-year-old Michael Dell realised it was a lot cheaper to build computers than to buy them ready made.
- Poppy King founded Poppy Industries Pty Ltd at age 18 after recognising there was a gap in the market for matte lipstick.
- Molly Whiticker-Ferrie was aged 14 when she started her Melbourne-based business, Fairy Friends Forever, which specialises in birthday parties for girls.
- Taylah Golden and Ellie Jordan were only 12 years old when they started their online sleepwear business called Jordan Taylah.

5.2.3 Who are some successful entrepreneurs?

There are many examples of youthful entrepreneurs who have gone on to be successful business owners. A famous one is Sir Richard Branson, chief executive officer of the Virgin Group. He started his first business,

FIGURE 1 Could you be an entrepreneur? If you have most of these attributes and skills, your chances of entrepreneurial success look good.



FIGURE 2 Richard Branson with his daughter Holly



a student magazine, when he was aged 16 and still at school. Another example is Bill Gates, co-founder of Microsoft. His interest in computers and computer software began when he was 13 years old.

Richard Branson

Richard Branson is the founder of the Virgin group, which comprises hundreds of companies including an airline, a train company and a mobile phone network. He started his first business at the age of 16. You may have seen Richard Branson in the media because he is famous for his publicity stunts whenever Virgin launches a new business or project. One of Richard Branson's current big ideas is commercial space travel.

If you have heard Richard Branson speaking, you will know that he is passionate and enthusiastic. He listens to staff and customers, carrying a notebook with him wherever he goes so that he can write down what he sees and hears. He then follows up on the ideas. He shares Virgin's future plans with his staff, and his vision inspires people to perform at their best.

Mark Zuckerberg

Mark Zuckerberg is a famous American entrepreneur. He is one of the founders of the very successful social media site Facebook. Mark Zuckerberg is a computer programmer who began creating websites while he was at college. In 2004, he launched Facebook and it has grown in popularity ever since. As of December 2015, there were more than one billion daily users of Facebook (according to the Facebook website). His business has been successful because he has specialised skills and was willing to take a risk to develop a unique business idea.

Mark Zuckerberg believes in the open and free flow of information between people. Facebook has allowed this to occur, but it has also created controversy throughout its years of operation. As a result of Facebook's success, Mark Zuckerberg has been able to donate significant amounts of money to charitable causes.

FIGURE 3 Mark Zuckerberg



Carolyn Creswell

Carolyn Creswell is the founder of Carman's Fine Foods. She scraped together \$1000 when she was 18 years old to buy out the homemade muesli business that she worked for. Today, Carman's products are sold in supermarkets across Australia and exported to more than 30 countries.

Some people suggest that the business is an overnight success, but Carolyn Creswell responds that she has been successful because of hard work.

She learned everything she knows about the business while working on the job, and she believes this makes it easier for her to empathise with staff. Carolyn Creswell is driven by passion rather than the desire to make money. She believes it is vital to have a clear vision of where the business is heading and to consider that when making every decision.

FIGURE 4 Carolyn Creswell



Lorna Jane Clarkson

Lorna Jane Clarkson is the founder of workout fashion business Lorna Jane. She began making leotards while she worked as a dental therapist and realised that there was a demand for fashionable activewear. Lorna Jane Clarkson and

her husband, Bill, opened their first store in 1993. There are now more than 150 Lorna Jane stores worldwide.

Together with her husband, Lorna Jane Clarkson has never been afraid to take a risk. While other businesses believed that the market for fitness garments was too small to make a profit, the Clarksons decided to focus on that **niche market** anyway. The success of their business can be traced back to their vision and good management. Lorna Jane is renowned for innovative designs and for listening to customers, particularly through social networking.

FIGURE 5 Lorna Jane Clarkson



5.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. In your own words, what is an entrepreneur?
2. At what age can you be an entrepreneur?

Explain

3. Outline the sort of personality and qualities that a successful entrepreneur is likely to have. Suggest why these might be needed.
4. Select one of the entrepreneurs discussed in this section and answer the following questions:
 - (a) Why is this person an entrepreneur? Has he or she been successful so far? Explain.
 - (b) How did they put their business idea in place?
 - (c) If you were the entrepreneur's business adviser, what three tips would you give them for continued business success? Discuss these with a partner.

Discover

5. Choose an entrepreneur — from this section or one that you know — and investigate the behaviours and skills that they bring to their business. Use the questions below to help you.
 - (a) What business did this entrepreneur start, and at what age?
 - (b) Why did this person become an entrepreneur?
 - (c) What behaviours does this person display that make them an entrepreneur?
 - (d) What skills does this entrepreneur have?

Predict

6. What do you think would happen to Australia's economy if we had no entrepreneurs?

Think

7. Do you think you have 'got what it takes' to be an entrepreneur? Explain, drawing attention to what you see as your strengths and weaknesses for such a career.
8. In small groups, come up with an original business idea. Through discussion, develop a strategy for launching your new product. You will need to consider how it will be promoted (e.g. advertising and publicity), distributed (e.g. online or shopfront) and priced (e.g. interest-free loans or 'cheaper than all competitors' promises). Present your concept to the class using a PowerPoint or Keynote display. Negotiate the task each group member will perform.

5.3 Business owner or entrepreneur?

5.3.1 Are they different?

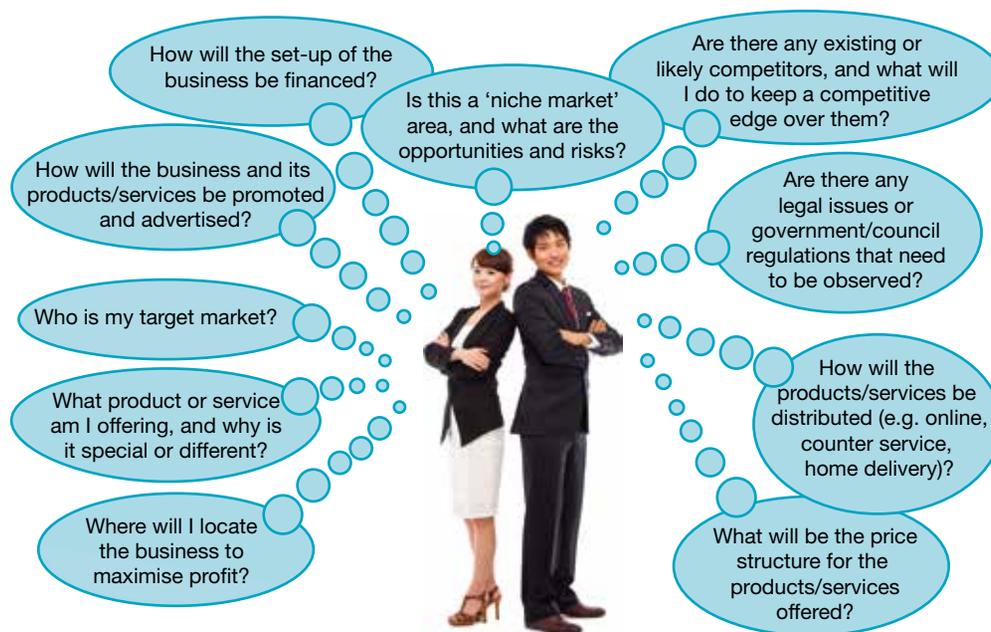
We have looked at some examples of well-known entrepreneurs. But what is the difference between a business owner and an entrepreneur? Unfortunately, there is no easy answer to this question. Both business owners and entrepreneurs run businesses. The difference is best seen in the behaviours and skills that entrepreneurs bring to a business that people who simply run businesses do not have.

5.3.2 Business owners and entrepreneurs

Business owners play an important role in the economy, just as entrepreneurs do. A business owner might start their own businesses, just as entrepreneurs might. Business owners might purchase an existing business and run that, just as entrepreneurs also run businesses.

However, business owners tend to be content with simply running a business on a day-to-day basis so that it makes a profit. They prefer to minimise risks and make calculated decisions where the outcome is reasonably clear. However, entrepreneurs do much more than that. As we know, entrepreneurs seize opportunities and take risks. Entrepreneurs also establish a shared vision and demonstrate initiative, innovation and enterprise. A business owner might have an idea for solving a problem and meeting that need in order to satisfy a **target market**, whereas an entrepreneur's vision might be to make a big change or have an impact on the world. Entrepreneurs often do not know if their ideas are achievable or not.

The typical questions that need to be considered by both business owners and entrepreneurs when starting a new business are illustrated in the figure 1.



Let us have a closer look at some of the behaviours and skills that entrepreneurs bring to a business.

5.3.3 A shared vision

When an entrepreneur has a **vision**, it means they have an understanding or hope of what the business will be like in the future. This gives the business a clear direction. Having a shared vision means that everyone in the business works together, as a team, to develop and then accomplish a goal. When this happens, it is

much more likely that staff will enthusiastically contribute to making sure the vision is achieved.

5.3.4 Initiative

When an entrepreneur demonstrates **initiative**, it means they are taking the first step in a series of actions or in a process. This is frequently done without someone prompting or telling them to take this step; an entrepreneur will usually make this decision independently. However, they might seek the help or advice of other people before they do so.

Andrew Bassat was the 2013 Australian EY Entrepreneur of the Year. EY refers to the global organisation, Ernst & Young Global Limited. Andrew Bassat displayed initiative when he co-founded SEEK Limited in 1997 even though he had very little knowledge of the internet. SEEK is now the world's largest online employment marketplace.

5.3.5 Innovation and enterprise

Innovation is either adding a new product (which can be a good or service) to an existing product line, or significantly improving an existing product or process. This is different from inventing, where a completely new product or process is developed. Innovation could simply involve changing the way a business works so that it delivers better products. **Enterprise** is the effort made by someone to creatively or boldly achieve something new. Entrepreneurs exhibit enterprise by taking risks to determine if the market is interested in their new ideas.

FIGURE 2 A shared vision is much more likely to be achieved because people who are involved in developing a vision will be more inspired to work towards the goal of achieving it.



FIGURE 3 Andrew Bassat (far right) with his SEEK co-founders



FIGURE 4 Holographic communication is widely predicted to be an innovation that will change the way we work and talk to each other over the next few years.



5.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. List some of the important questions that need to be considered by a business owner or an entrepreneur in making a business idea happen.

Explain

2. What is the difference between a business owner and an entrepreneur?
3. Outline what is meant by the following entrepreneurial behaviours:
 - (a) establishing a shared vision
 - (b) initiative
 - (c) innovation
 - (d) enterprise.

Predict

4. Describe what might happen to an entrepreneur or a business owner if their business fails.

Think

5. Why is being an entrepreneur so important to the success of a business?
6. Working in a group of three or four, use the information in this section to plan a video presentation that promotes the need for entrepreneurs. Make it interesting and catchy. Cover all the behaviours and skills that are typical of an entrepreneur. Use video editing programs and internet research as part of your planning.

5.4 Business success: quality product and location

5.4.1 Important choices

How does a small business owner make sure the product is of high quality, and how can they choose the best location that gains exposure for their business? These are important choices that will contribute to the success of the business.

5.4.2 A high-quality product

A business owner should aim to produce a high-quality product — one that meets the expectations of the customer. This means that the product will be reliable, safe and easy to use, durable, well designed and delivered to customers on time. A business owner will need to ensure that quality materials are used in the production of their good or service, and that there are no faults before it is sold to customers.

How to make a high-quality product

Just how do you produce a high-quality product? Attributes that a business owner might attempt to include in their new product before taking it to the marketplace include:

- *Premium features* — producing a product that is perceived to be superior to the products of competitors. A business owner can achieve this by making sure that the product will be considered

FIGURE 1 A clothing retailer can add a premium feature to its product, thus creating a high-quality product, by providing a tailor to adjust customers' purchases.



luxurious; for example, by being more accommodating, providing greater comfort, or by tasting better than the competitors' products. Companies such as Sony and LG often add premium features to their consumer electronics products.

- *Durability and reliability* — creating high-quality products that provide the customer with high value by lasting as long as possible. We live in a society that does not seem to value products that last for a long time, but some businesses distinguish their products from those of their competitors on this very basis. Boral, for example, is renowned for supplying durable building products and construction materials.
- *High performance* — making sure that the product performs better than the products of competitors. A business owner can achieve this by making a product that is faster, more efficient or more powerful; or by making a product that completes a task in a better way than competing products. Samsung and Apple, for example, advertise that their mobile phones offer top performance.

5.4.3 Location

Many factors must be considered when a business owner chooses a location. These include personal convenience, **zoning regulations**, the suitability of the **premises** for the business and the potential for expanding those premises. Other important factors discussed in detail below are:

- visibility
- accessibility
- competitor location
- cost
- area reputation.

Visibility

Exposing the product and the business to potential customers is essential for a retail business or one providing a service to the public. Businesses such as music stores and hairdressers rely heavily on **passing trade** for sales. That is why these types of businesses typically locate in shopping centres or on shopping strips.

Accessibility

A business generally needs to locate as close as possible to its customers or suppliers. The importance of each of these considerations depends on the nature of the business. A retail business needs to be close to customers, with convenient parking or access to public transport nearby. For this reason, a clothing store

FIGURE 2 Many people today run businesses online from home so there is no physical location for their business.



FIGURE 3 An example of a shopping centre and a shopping strip: Melbourne Central shopping centre (left) and Liverpool Street in Hobart (right)



might decide to locate in a shopping centre or a shopping strip. For a business that manufactures goods, being close to suppliers might be more important. A car parts manufacturer would need to be close to transport networks, such as freeways or railway lines, so that it can easily receive raw materials from suppliers and then distribute the finished goods.

Competitor location

For a retail business or service provider, it does not usually make sense to locate close to competitors. If an antique furniture shop is already established in a shopping centre, it might be a bad idea to set up another one there unless there is a huge demand for antique furniture. It would make more sense to locate near other businesses that sell different products, and feed off the customers that are drawn in by the variety of choices or by the attraction of a large brand name. This is why many businesses choose to locate in a large shopping centre with well-known businesses such as Coles, Woolworths, Target and Big W nearby.

However, some businesses choose to locate in an area where there are other businesses selling the same product. They will do this because customers are attracted by the competition and choices offered by the collection of businesses. Examples of this include furniture stores or car yards located together along a busy highway.

Cost

When considering the cost of a location, the business owner must decide whether to rent or purchase the premises. In general, the cost of the location will be affected by the location's size, quality, visibility, accessibility and the amount of passing trade. For example, locating in a shopping centre

is usually more expensive than locating on a shopping strip. For the business owner, an ideal location would be one where costs are kept to a minimum, taking into account all of the other location factors. A restaurant relying heavily on passing traffic might find that locating in a low-cost site with low visibility is ultimately not a successful strategy.

Area reputation

A location with a low cost might initially seem attractive, but it could be relatively cheap because of its poor reputation. An area with a poor reputation might have a high crime rate and be perceived as an unsafe place. Potential customers may not be prepared to visit a business located in such an area.

FIGURE 4 Many businesses choose to locate in large shopping centres because they can then feed off the large number of customers who are drawn in by the wide variety of products and competitive prices offered in one location.



Online businesses

Online businesses can be located in any location; they do not even need to be located in the same country as the market that they operate in! Rent may be higher for online businesses in inner-city areas; however in these areas they may be able to attract higher-skilled workers to work for them. Consideration should be given to the location of the warehouse where goods are shipped from. Increasing numbers of online businesses are also moving to set up in a physical location after establishing their reputations online.

5.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Briefly outline the attributes a business owner might consider when developing a high-quality product.
2. What is passing trade?

Explain

3. Explain the following factors in a high-quality product:
 - (a) premium features
 - (b) durability and reliability
 - (c) high performance.
4. Draw a diagram explaining the factors that a business owner will need to consider when choosing a location

Discover

5. Select a site in your local area that has shops (businesses), houses and perhaps industrial areas and complete the following:
 - (a) Draw the site plan, detailing traffic flows and the location of shops and houses.
 - (b) Explain the reasons for the location of each business.
 - (c) If you were to open a new business here, such as a café, where would you locate your business? Give reasons for your answer.

Predict

6. What might happen to a business that does not sell a high-quality product?
7. What do you think would happen to a business that chose an unsuitable location? List five possible consequences of choosing the wrong location.

Think

8. List the factors that need to be considered when deciding the location of the following businesses:
 - (a) a car manufacturer
 - (b) a restaurant
 - (c) a supermarket
 - (d) a health food store
 - (e) an online T-shirt supplier
 - (f) an importer of exotic plants.
9. Why are location and a high-quality product so important to a business's success?

5.5 Business success: service and management

5.5.1 Meeting customer expectations

Providing quality service and using sound management practices allow a small business to meet customer expectations.

5.5.2 Quality service

Quality service leads to customers being satisfied with the product of the business. Highly satisfied customers obviously generate profit, but by returning to the business they can also bring other customers with them. This is referred to as **word-of-mouth** business.

A business can make sure that it provides quality customer service by seeking feedback from customers. One way to collect feedback is through a **customer survey**. Many businesses use customer loyalty programs, which allow them to build a database on their customers and stay in contact with them. Discounts and giveaways can be used to reward customers. Another way that businesses can provide quality service is by training staff.

FIGURE 1 Quality customer service will make sure that customers keep returning to buy the business's products.



5.5.3 Sound management practices

Sound management practices require that business owners exercise four crucial management roles, manage the finances of the business, and manage the business in an ethical and socially responsible manner.

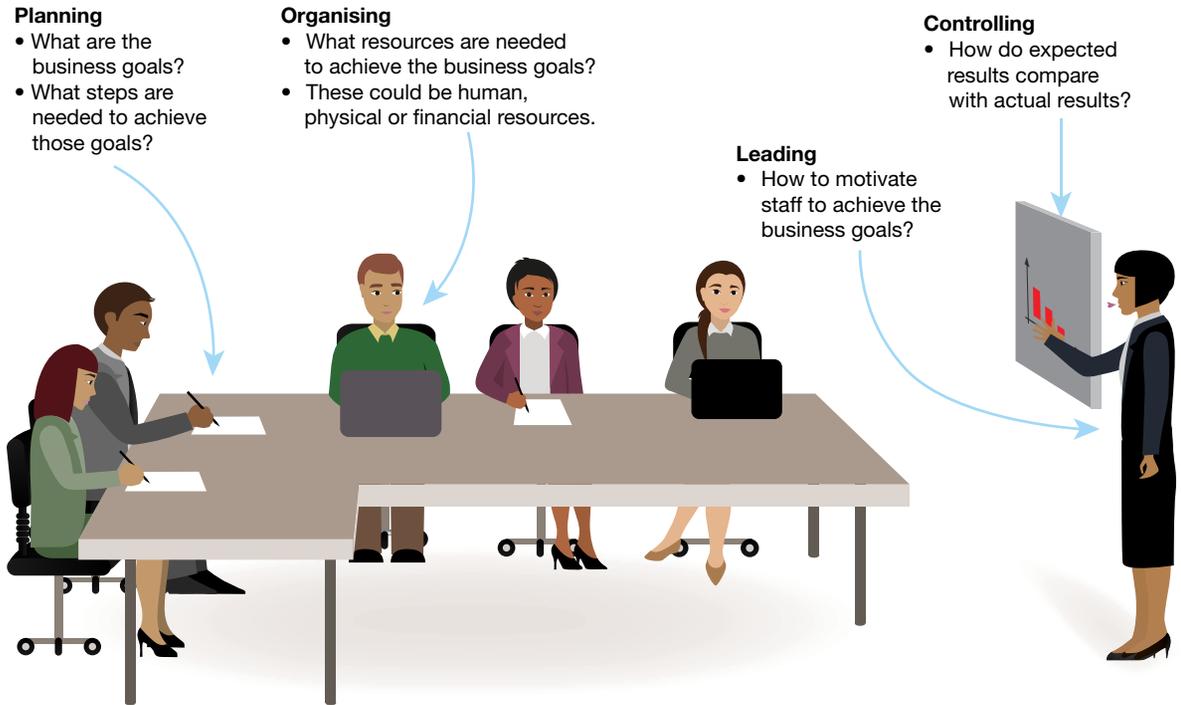
Management roles

Four crucial management roles must be fulfilled if a business is to be effectively and efficiently managed:

- **planning** — This is the process of identifying goals for the business as well as the steps that will need to be followed to achieve those goals. For example, a manager might set a goal that the business will introduce a new product over the next 12 months.
- **organising** — This is the process of working out what resources are necessary to complete the tasks that need to be performed so that the goals of the business are achieved. These might be human, physical or financial resources. For example, a manager might assign a particular task or responsibility to a worker in the business.
- **leading** — This is the process of motivating or inspiring staff in the business to achieve the goals of the business. For example, a manager might explain to staff what the goals of the business are and why it is important to achieve those goals. This might influence staff to work hard to achieve those goals.
- **controlling** — This is the process of comparing what was expected to be achieved with what was actually achieved. For example, a manager would look at sales figures for the new product to see how the business was progressing towards achieving its goal of introducing a new product over the next 12 months.

These roles are illustrated in figure 2.

FIGURE 2 The four crucial management roles



Financial management

It is vital that the business owner manages the finances of the business. **Cash flow** needs to be maintained. Cash is one of the most important resources for a business. Without cash, the business would not survive. Only by tightly controlling and monitoring the business's cash position will the business succeed.

The business owner also needs to make sure that the business is making a profit. Regular profit reports should show that a business is earning more revenue than expenses. If the business is not making a profit, or if cash flow is poor, the business owner needs to review what is happening in the business and make changes.

Ethical and socially responsible management

A modern business cannot just consider its financial position. Today, people expect that businesses will do the right thing when making decisions and show concern for society in their actions. **Ethical management** occurs when a business applies moral standards to decisions made; for example, by being honest in the way they deal with other businesses. **Socially responsible management** occurs when a business shows concern for the social welfare of the community, including customers, staff and the environment. Society expects that a business will treat employees fairly, show respect to customers and look after the environment.

5.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is word-of-mouth business?
2. List the four roles of management.

Explain

3. Describe how a business can develop quality service.
4. Explain the difference between financial management and ethical and socially responsible management.
5. Complete the following table to explain how each sound management practice contributes to a successful business.

Sound management practice	How it contributes to a successful business
Planning	
Organising	
Leading	
Controlling	
Financial management	
Ethical and socially responsible management	

Discover

6. Invite a successful business owner to your school to speak to your class about their business and the sound management practices they use that have led to the success of their business.

Predict

7. Describe a scenario where a business provides poor customer service and predict the possible outcomes of that poor service.
8. What will happen to a business that does not make use of sound management practices?

Think

9. Role play the situation described below in which a customer is receiving poor service. At the very least you will need someone to play the part of an unhappy, irate or angry customer and someone will need to play the part of an employee or a business owner. However, choose characters to suit your situation. Set the classroom up like a business and see if the business owner or employee can keep the customer satisfied!

Chris walks in to a clothing store with some friends and starts to browse. The group is laughing while they look through the racks of clothes. A sales assistant, believing that they are making fun of the clothes, asks them to leave while telling them, 'You don't belong in a store as expensive as this one!'

5.6 SkillBuilder: Writing a business case study

5.6.1 Tell me

What is a business case study?

A business case study is a description of a real life business requiring you to explore the main issues affecting the business and how the business owner has responded. These issues and responses need to be analysed and related to your economic and business knowledge. Conclusions can then be drawn about why the issue occurred and how to best respond to them, based on what the business owner did.

Why is writing a case study useful in economics and business?

Writing a business case study is a way to apply the theoretical knowledge that you have learned about economics and business to a real-life business. It can develop research skills. Writing a case study requires you to carefully investigate and critically analyse an issue.

CASE STUDY

Boost Juice

Who is Boost Juice?

Boost Juice Bars is a global chain of retail stores selling fruit juice and smoothies. Boost Juice also sells snacks, including banana bread, wraps and yoghurt. Janine Allis and her husband Jeff started the business in 2000 when they opened an outlet in South Australia.

Reason for Boost Juice's success

Janine Allis and her husband Jeff chose the perfect time to launch a great product.

Janine was inspired by a trip to the United States, where juices and smoothies were common. Back in Australia Janine found, 'In shopping centres, there was nowhere to get something healthy.' Using her trip to the US as research, Janine explains, 'I studied the concept of smoothies and juice and took what I liked to develop a new concept in Australia called Boost.' The business started small with just one shop in Adelaide, giving them the chance to trial and test their products.

Janine has been hands-on in setting up the business — developing the structures, business plan and ethics that were needed to grow the business. But in the early days, it meant getting involved in every aspect: 'I flew to Adelaide to open the first store; I ran it, scrubbed the floors and really learned the business.'

This modest start gave Janine the chance to test the market, using a popular radio station to reach Boost's target market. To reach their goal of expanding their brand, Janine focused on strong branding as a way to lure the best franchisees and to win customers. 'I never had the intention of opening just one store, but you have to open the first one to work out the cost of goods, your wages, expenses and income and work out if you have a viable business.'

Running her own business was a risk, but it gave Janine a way to try to balance her work and home life and the opportunity to work from home in the early days when her children were young. 'When the time came to expand with a building program on 15–18 sites, we sold the house and put the money into the business. We're a company where you don't necessarily have to wear a suit or have a degree to be promoted and you can bring your children in when you have them. It's the sort of company where you can have both.'

Other information about Boost Juice

- 2000: Opened first Boost Juice (Adelaide)
- 2002: \$1 million annual turnover
- 2008: 213 stores and on track for \$100 million annual turnover
- 2014: 300 stores in 10 countries and annual turnover of more than \$135 million
- 2016: More than 350 stores in 17 countries
- Highest grossing company stores: Sydney and Melbourne airports
- Highest grossing company franchisees: Chadstone and Pacific Fair Shopping Centres
- Ethical and social responsibility: Boost uses paper cups that are renewable, sustainable and biodegradable which are printed using non-toxic, food-safe inks and are not harmful to the environment. Boost Juice has a school fundraising program.

FIGURE 1 Janine Allis and her husband Jeff



Elements of a good business case study

A good case study:

- includes a profile of the business (the trading name and the products it sells)
- explains some of the history of the business
- gives reasons the business has been successful
- covers any other issues or questions as required
- includes extra information about the business

- is of reasonable length (approximately 300 words)
- is easy to read
- is well presented.

5.6.2 Show me

How to complete a case study

You will need:

- a sheet of lined paper and a pen, or your computer/tablet device
- a team of three to four people.

Procedure:

To write a business case study, you will need to gather information about the business. The best way to do this is to interview the owner or someone who works at the business. If you cannot speak to someone who knows about the business, you will need to complete research on the internet or use magazines and newspapers.

STEP 1

Form a team of three to four people and establish the goals of your group. (In this case it will be to choose an appropriate business owner to interview.)

STEP 2

Work out the interview questions you will need to ask the business owner, manager or employee. Use the questions in the 'Let me do it' section of this SkillBuilder as a guide.

STEP 3

Visit the business and interview the owner, the manager or an employee. Be polite. Do not try to interview them if they are busy. You might need to ask them if you can come back at a more convenient time. Explain why you are doing the interview and what will happen to their responses. Remember to thank the person for their time.

STEP 4

Complete any further research that may be needed to address all the items listed in the 'Elements of a good business case study' section of this SkillBuilder. You could complete your research on the internet or using magazines and newspapers.

STEP 5

Write your report using proper sentences and headings. Present it so that it is easy to read.

5.6.3 Let me do it

Developing my skills

Working in your group, use a report format to write a case study on a successful business. Use the following questions to guide you:

1. What is the name of the business and what products does it sell?
2. When and why did the owner start the business?
3. Does the owner consider himself or herself to be an entrepreneur?
4. What are the reasons for the success of the business?
5. Is there any other information or issues that need to be covered? These might include:
 - (a) where the business is located and why it is located there
 - (b) how it develops or developed a high-quality product
 - (c) how it maintains quality service
 - (d) the promotion or advertising it uses
 - (e) the number of staff it employs

- (f) who gave the business support and advice when the business was getting started
- (g) whether the business has a business plan (or ever had one)
- (h) who manages the finances of the business and how they are managed
- (i) in what ways the business is ethically and/or socially responsible.

Questions

1. How did your group decide on the business you researched and the questions asked of the owner, manager or employee?
2. Did anyone in your group display entrepreneurial behaviours while participating in the gathering of research? Explain your answer.
3. Reading the Boost Juice case study, would you say that Janine Allis is an entrepreneur? What makes you say this?
4. Explain how Janine Allis' entrepreneurial behaviour resulted in Boost Juice becoming so successful.

Checklist

I have:

- included a profile of the business (the trading name and the products it sells)
- explained some of the history of the business
- given reasons the business has been successful
- covered any other issues or questions as required
- included extra information about the business
- written a report of reasonable length (approximately 300 words)
- written a report that is easy to read
- written a report that is well presented.

5.7 Review

5.7.1 Summary

An entrepreneur is a person who is willing to take a risk and has the qualities required to turn an idea into a successful business. An entrepreneur is different from a business owner. Entrepreneurs seize opportunities and often do not know if their ideas are achievable or not. They also establish a shared vision and demonstrate initiative, innovation and enterprise. Choosing the right product and the best location are very important for ensuring the success of the business. Providing quality service and using sound management practices allows a small business to meet customer expectations and also ensures the success of a business.

- An entrepreneur takes on a risk by starting any business with an idea, hoping to make a profit through initiative and enterprise.
- Any person, of any age, can be an entrepreneur as long as they have a great idea and the determination to make it happen.
- Business owners run businesses on a day-to-day basis to make a profit. They minimise risks and make calculated decisions where the outcome is reasonably clear. A business owner might have an idea for solving a problem and meeting a need in order to satisfy customers.
- A high-quality product is one that meets the expectations of the customer: the product is reliable, safe and easy to use, durable, well designed and delivered to customers on time.
- When locating a business, the owner needs to consider personal convenience, zoning regulations, the suitability of the premises for the business and the potential for expanding those premises, as well as visibility, accessibility, location of competitors, cost and reputation of an area.
- Businesses need to provide quality service so that customers will continue to return to the business.

- Business owners need to use sound management practices including the four crucial management roles, financial management, and ethical and socially responsible management to make sure that their business is successful.

learn on RESOURCES – ONLINE ONLY

 Try out this interactivity: Entrepreneurs and successful businesses crossword (int-5424)

5.7.2 Your turn

A self-titled success

A set of big dreams, a sense of naivety, determination, a generous splash of creativity and lots of hard work with persistence and time, in fact 12 long years, is all it took for Samantha Wills™ and her self-titled accessories (jewellery) company to become an ‘overnight success’.

What started as a hobby is now an international brand stocked in eighty countries around the world. With a \$12 million annual turnover the primarily online business sells through department stores and boutique retailers, without any real plans to have bricks and mortar shops.

Seventy per cent of the annual turnover comes from product sales in Australia, while the rest comes from the United States, Japan, France and Korea. The jewellery adorns celebrities such as Eva Mendez, Katy Perry, Lady Gaga and Taylor Swift.

With no formal business training, Wills attributes much of her success to sheer tenacity and being passionate about her product. Wills says to be a successful entrepreneur you need to have a passion for what you are doing and stick with it, no matter what gets thrown at you.

Starting from scratch was not easy for Wills who faced many hurdles before she found success. Without any formal business education, she learnt the hard way ‘on the job’. She learnt to surround herself with people who possessed the qualities and skills she doesn’t.

It was with this in mind that she set up the Samantha Wills™ Foundation: for empowering women in business, with the aim of information sharing and developing a sense of community for young women wanting to start their own business. She regularly writes a blog and answers the questions of newer entrepreneurs starting out. Will believes it is important to give back and often speaks at conferences encouraging other women to become entrepreneurs.

Wills moved to Sydney at the age of 21. While many women her age were off having fun, she was concentrating on developing her business. During the day she worked in retail, going home each night to make jewellery to sell at markets. A friend offered her a spot on a showroom wall during the 2004 Australian Fashion Week. Investing her last \$500, Wills hoped to make enough sales on the day to cover the costs of the stall. A sudden influx of orders worth \$18 000 plunged her into \$80 000 of debt. Promising customers that orders would be filled within two weeks she quit her job the next day and threw everything she had at getting those orders out. It was naivety and not bravery that urged her on to becoming a success.

Read the above case study and then answer these questions:

1. What business did Samantha Wills start and at what age?
2. What behaviours and skills does she display that make her an entrepreneur?
3. How have these entrepreneurial behaviours affected her business?
4. In what ways is Samantha Wills socially responsible?

TOPIC 6

Working for a living

6.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

6.1.1 The importance of work

Can you imagine what life would be like if you couldn't buy new clothes, the latest phone, laptop or computer game? Or call your best friend on your mobile, or Skype or Snapchat them? Having access to these things is only possible if you (or your parents) work to earn an income to pay for them. Life would be quite different from what it is today if people did not work. Food production would stop and people would begin to starve. Other supplies such as electricity, gas and

clean water would dry up. Houses and other buildings would not be constructed. Buses, trams and trains would stop running. Petrol production would cease, making it impossible for us to drive cars. The very nature of society would change, as would Australia's ability to trade with other countries.

For many individuals, work is how they make a living and generate the income needed to buy food for the table, clothes to wear or even the newest song to download. For others, it is their way of contributing to their own wellbeing and, by helping others to improve their lives, to the wellbeing of the wider community.

Every day, people perform mundane but vital tasks that make life easier for us all. Often they are paid for performing these tasks; sometimes they perform them voluntarily. We call these tasks 'work' or 'labour'. Work is more than getting up in the morning and going to a factory or an office. You can be working and still be at home — washing dishes, gardening, looking after your siblings or even cleaning your room. Most of these tasks can be physically exhausting for the body or even exhausting for the mind, and many of them are time and energy consuming.

The introduction of new technologies such as washing machines, computers, scanners and industrial robots has made work less physical and more intellectual. Today, people are more likely to use machines to perform the tasks that would previously have required the use of human muscle.

FIGURE 1 Some activities, although fun, can still be considered work.



FIGURE 2 Bar scanners have made work easier for shop assistants.



FIGURE 3 Robots are increasingly replacing people on the assembly line, taking over tasks that used to be performed manually.



Starter questions

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

1. Make a list of ten jobs that would need to be performed on a daily basis in order for you to attend school. For each one, explain how it affects you (for example, a baker would need to bake bread for you to eat your toast in the morning).
2. Examine figure 3. Technology has affected how cars are produced. Can you think of any other types of product or work processes that have changed due to technology? Give examples.
3. 'If people around you didn't work, it would make no difference to your life.' Discuss.

INQUIRY SEQUENCE

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6.2 What is work?

6.2.1 Why we work

We all dream of being wealthy and able to buy the things we want, when we want them. For most of us, this means we get up and go to work each day to earn a **wage** or **salary**. It is this work or labour that has improved our lives and made us more comfortable.

6.2.2 Labour, then and now

In early times, people performed activities such as hunting for food, gathering berries, planting seeds and picking fruit, all of which required manual labour. Today, labour requires the use of modern technology and an education at school, university or TAFE. The modern labour force includes scientists, graphic designers,

Examples of the types of activities people perform that can be classified as work



architects, journalists, web developers, dentists, doctors, pharmacists, shopkeepers, managers and factory workers.

6.2.3 The importance of labour

When we think of the term **labour**, our first thought will often be ‘work’. In very general terms, **work** is defined as human labour — whether paid or unpaid, voluntary or involuntary. A more complex definition is the performance of laborious tasks (mental and physical) and/or the provision of time and effort in exchange for money. If you are working, then you are part of the **labour force**.

In Australia people are considered to be in the labour force if they are:

- over 15 years of age
- and either **employed** or looking for work.

Note that anyone who is not working and not looking for work is not considered to be in the labour force.

The main reason we work is to get paid: to receive a wage or salary or other **remuneration** for the work that we perform or the services we provide. When someone is working, they are considered to be employed. According to the Australian Bureau of Statistics (ABS), a person is employed when they are engaged in some form of work for at least one hour a week. Specifically, it classifies a person as being employed if they work for one hour or more for pay or profit or an **income**. This includes everyone who works — from teenagers working part-time after school, to an older worker delivering advertising material in their local neighbourhood. Table 1 shows that the number of employed people increased from April to May 2016, while the number of unemployed people decreased during the same period. Sometimes the number of unemployed persons can increase even when the number of employed persons has increased. This happens when, for example, more people enter the workforce for the first time (such as school leavers and graduates) or people return to the workforce (such as parents whose children have started school).

In the past decade, Australia experienced a steady growth in both population and labour force participants. In 1999, there were 9 379 000 participants in the labour force. By 2016, this number had grown by more than 3 million to 12 627 800. Figure 2 displays the numbers of participants in Australia's labour force. From this graph, we can see a steady growth in the total labour force during the period 1999–2016.

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FIGURE 1 Doing your own household chores is classified as unpaid work.

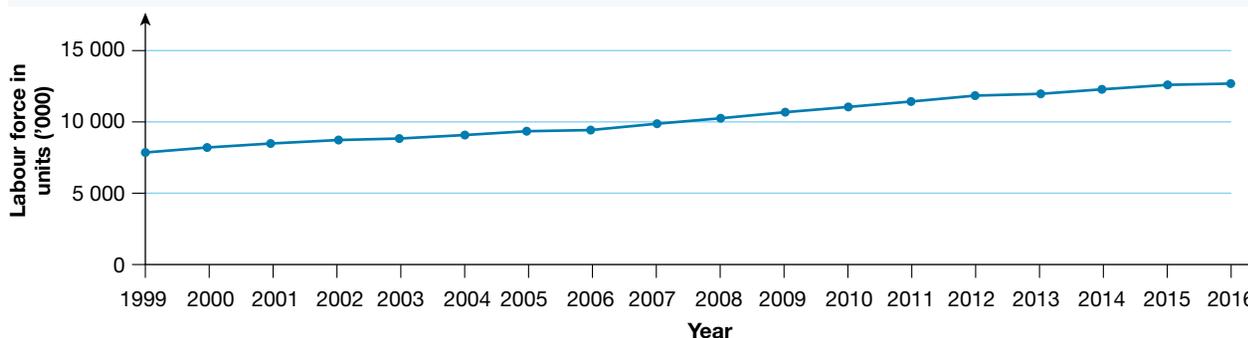


TABLE 1 Labour force figures in Australia, April–May 2016

	April	May
Employed persons ('000)	11 915.7	11 919.4
Unemployed persons ('000)	726.5	724.3
Unemployment rate (%)	5.7	5.7
Participation rate (%)	64.9	64.8

Source: Australian Bureau of Statistics, *Labour force, Australia, May 2016* (cat. no. 6202.0).

FIGURE 2 The Australian labour force 1999–2016



Source: Graph based on data compiled from Australian Bureau of Statistics, *Australian social trends, data cube — Work* (February 2013) (cat. no. 4102.0); *Eco3: Labour Force status, Jan 2007 to Jan 2014*; and *Labour force, Australia, May 2016* (cat. no. 6202.0).

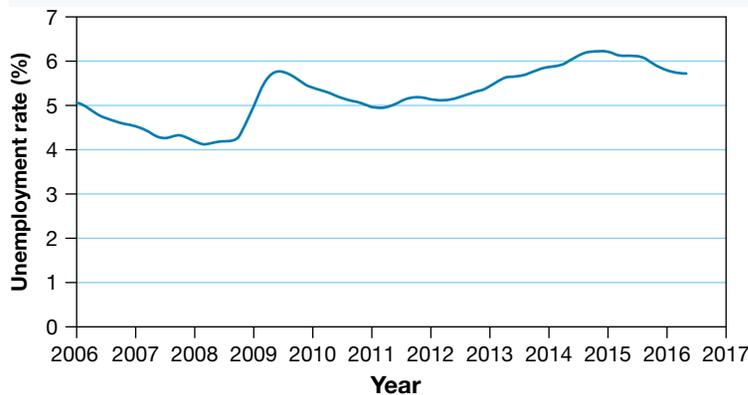
Table 2 shows that between 2001 and 2015 the number of females entering the workforce grew steadily, increasing by almost 5 percentage points compared with an increase of just 0.2 percentage points for males. In 2014–15, the labour force participation rate for males was 78.3 per cent compared to 65.1 per cent for females.

6.2.4 The importance of unemployment

When the ABS examines growth in labour, it also examines unemployment levels. This is because the total labour force is made up of both employed people and people looking for work.

The level of unemployment is an indicator of the number of people unsuccessfully trying to get into the workforce. Figure 4 shows that over the past decade, the unemployment rate (the percentage of the labour force actively looking for work) varied up and down gradually — except in 2009, when it spiked. This major spike can be attributed to the start of the global financial crisis. After the global financial crisis, the unemployment rate drifted downward again until 2011, when a steady increase began. Since 2015, the unemployment rate has again been trending down.

FIGURE 4 Unemployment rate in Australia, 2006–16



Source: Graph based on data from Australian Bureau of Statistics, *Labour force, Australia, May 2016* (cat. no. 6202.0).

TABLE 2 Labour force participation rates based on gender in Australia, 20–74 years, 2001–15

Year	Males (%)	Females (%)
2001–02	78.1	60.3
2002–03	77.9	61.2
2003–04	77.8	60.9
2004–05	78.2	61.9
2005–06	78.7	63.0
2006–07	79.1	63.7
2007–08	79.3	64.4
2008–09	79.3	65.0
2009–10	79.2	64.7
2010–11	79.5	65.1
2011–12	79.1	65.2
2012–13	78.8	65.1
2013–14	78.4	65.0
2014–15	78.3	65.1

Source: Data compiled from Australian Bureau of Statistics, *Gender indicators, Australia, February 2016* (cat. no. 4125.0).

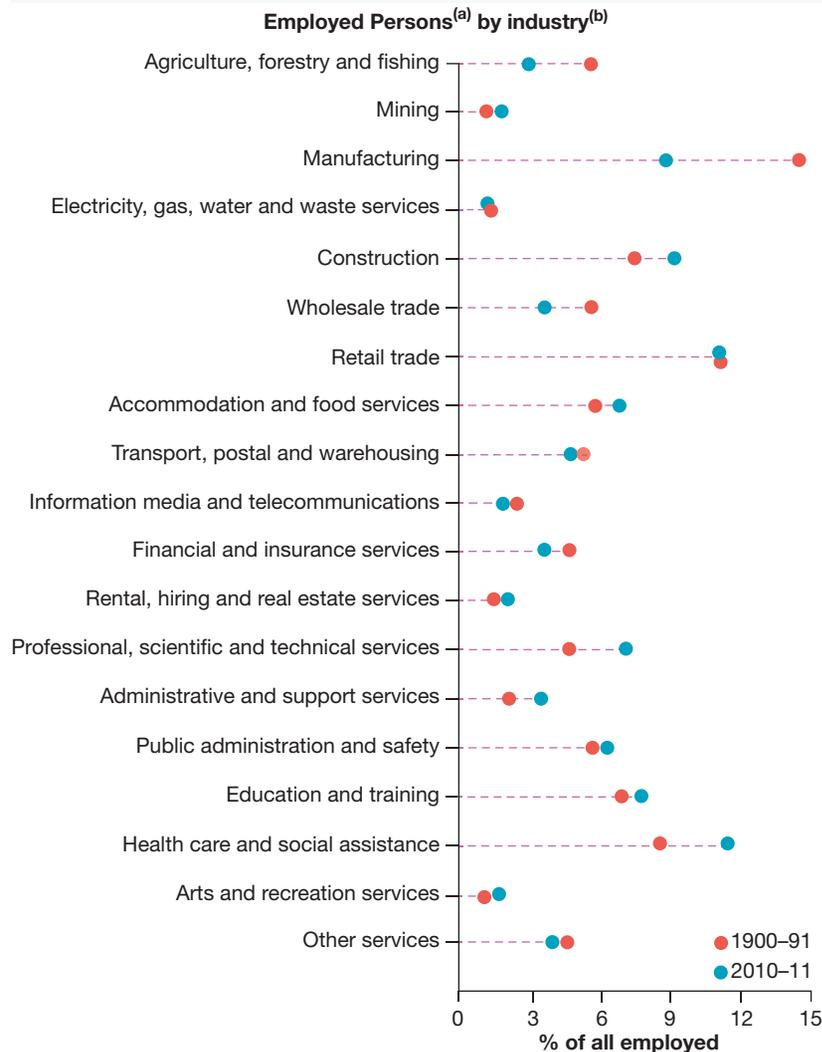
FIGURE 3 Young people often have higher unemployment rates because of the difficulty of getting experience to land that first job.



6.2.5 Industries people work in

When gathering data, the ABS splits the areas in which people work into 19 industries. These are made up of mining, manufacturing, retail, construction, education, health and 13 more industries. Figure 5 shows

FIGURE 5 Number of people employed by industry in Australia, 1990–91 and 2010–11



(a) Annual average of quarterly data.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1.0) (1292.0).

Source: *Labour force, Australia, Detailed, Quarterly (6291.0.55.003)*

Source: Graph redrawn from Australian Bureau of Statistics, *Year Book Australia, 2012* (cat. no. 1301.0).

these industries and compares the number of people employed in each industry in 1990–91 and 2010–11. Notice that over the past two decades, the number of people employed in manufacturing decreased from about 14 per cent to 9 per cent.

The very nature of work has changed dramatically over the last century. Much of this change has been driven by advances in technology, the movement of women into the workforce, and major shifts in society’s values and attitudes. In the past, the vast majority of the paid workforce was made up of men. Now we see an increasing number of women entering paid employment in preference to staying at home and engaging solely in unpaid work.

FIGURE 6 The ABS classifies an ambulance officer as part of the ‘Health care and social assistance’ industry.



6.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. How does the ABS define work?
2. Why do you think the ABS definition requires a minimum of one hour of work per week?
3. Why is remuneration important for someone who is working?
4. Are the following statements true or false?
 - (a) Pocket money is a form of income.
 - (b) If you work only three hours a week, you are not employed.
 - (c) A full-time employee works, on average, about 40 hours per week.

Explain

5. Examine the images in section 6.2.2 and answer the following questions:
 - (a) Identify the types of activities that each person performs.
 - (b) State whether the activity would be voluntary or involuntary in each case.
 - (c) Explain how technology may have affected how the work depicted is done.
 - (d) How may these jobs change in the future? Give examples.
6. Examine table 1 and answer the following questions:
 - (a) Was there an increase or a decrease in the number of people employed? By how much?
 - (b) Was there an increase or a decrease in the number of people unemployed? By how much?
7. Examine figure 4. To what can you attribute the spike in 2009 after a steady drop during 2006–08?
8. Examine figure 5 and answer the following questions:
 - (a) Has manufacturing increased or decreased? To what can you attribute this change?
 - (b) What other industries have shown a drop in numbers?
 - (c) Which industries have grown?
 - (d) Which industry shows the greatest change (positive or negative)?

Think

9. Examine table 2 and answer the following questions:
 - (a) When did the biggest growth in the male participation rate occur?
 - (b) When did the biggest growth in the female participation rate occur?
 - (c) When did the male participation rate decline?
 - (d) When did the female participation rate decline?
10. Choose three industries from the list in figure 5. For each chosen industry, make a list of five jobs that could be found in that industry. For example, the 'Health care and social assistance' industry would include doctors, nurses, physiotherapists, IT specialists and administrative assistants — but you have to think of your own examples!

6.3 Why work?

6.3.1 Work to earn a living

How many times have you heard the saying, 'Money doesn't grow on trees'? As you get older, the importance of money and its uses becomes clearer. For example, you need money when you catch up with friends and plan a day out to the movies, ice skating, rollerblading, visiting the art gallery or any other exciting or interesting activities. You need money to fund your lifestyle.

So where does the money you need come from? If you said your parents, well you know that the money comes

FIGURE 1 Going to a concert with your friends is just one of the many activities for which you need money.



from your parents going to work. Once you leave school, though, chances are you will enter the workforce if you haven't already started working while at school. Being part of the workforce will enable you to start earning money, which you can then use to buy things that you want. Earning a living is often the primary reason that people work. It is, however, not the only one.

6.3.2 Why do people work?

Imagine for a moment that you are unbelievably rich. You have so much money that you will never have to worry about working to earn more. What would you do? Most likely you are imagining a life of non-stop fun. Now it's time for a reality check! Even the wealthiest people in the world often choose to work. This is because

there are many personal benefits to be gained from working aside from financial benefits. Non-financial benefits of participating in the workforce include:

- the opportunity to use your skills and abilities in a positive way
- meeting and mixing with new people
- doing something you love and are passionate about
- increasing your self-esteem and confidence
- developing your natural strengths and talents
- wanting to be part of a group or a team at work
- having friends at work
- contributing to the Australian economy
- being happy.

The financial benefits can include:

- earning an income
- exchanging money for goods and services
- being a consumer
- having the ability to buy what you need and want
- creating and maintaining a good standard of living for your family.

6.3.3 Benefits of paid work

The main reason that people work is to be paid — to receive an income — but there are other reasons too. Let's look at some of the most common ones.

To earn money

To survive, we must have money. Most people sell their labour to an **employer** and receive an income in return. The most common forms of income are wages and salaries. While earning money, many workers will struggle to maintain some degree of balance between work and leisure, known as the **work–life balance**. This need for work–life balance is important to many workers and can form the foundations of a good life and a worker's sense of **wellbeing**.

FIGURE 2 Jobs provide income that is used to buy goods and services.



To improve living standards

Imagine a teenage girl who has just received her first pay packet from a part-time job. On her way home, she decides to visit a shopping centre and buy new clothes. The income from her job has allowed her to improve her **standard of living** and given her a brand new wardrobe.

Working generates an income that enables consumers to satisfy their needs and wants. What if those needs and wants are intrinsic? That describes something inside the individual that will motivate them to want to go to work — for example, to be happy, to have a good life, to feel valued for the work they perform, and to pass on their knowledge and skills to the next generation. A July 2006 study found:

With societies becoming more affluent and the nature of work changing there has been a change from a focus on extrinsic work values (pay, working hours — the benefits a job has for the employees' lives outside of work), to a focus on intrinsic work values (the quality of the work itself).

Source: FDS International, *What workers want: a worldwide study of attitudes to work and work-life balance*.

What this means is that workers are no longer so preoccupied with pay rates. Instead, they are more concerned as to whether the work they do will make them happy and improve their wellbeing.

To gain status and prestige

The type of work a person does is often used to measure that person's status and prestige within our society. In other words, their status comes from their occupation. The value we place on a person's job determines his or her income. For example, a heart surgeon's highly skilled work is valued more than a labourer's, so the surgeon receives a higher income. This is partly due to the education and training needed to become a surgeon.

To obtain self-satisfaction

Two hundred **employees** of a factory were asked to write down the most important aspect of their work. The responses revealed that it was not money: 67 per cent of the employees said that knowing they had done the job well and received some praise from the supervisor were the most rewarding

FIGURE 3 Earning money is important for most workers, but achieving a work-life balance is necessary for wellbeing.



FIGURE 4 The work of a heart surgeon is well remunerated because it is held in high value by society.



aspects. Both job satisfaction and self-satisfaction were seen as important. This doesn't mean that money is not important; it is. However, there are many other rewards you can get from a job.

To make friends

Work provides the opportunity to meet other people and make friends. Sometimes workplaces have social clubs that employees can join to make friends and have fun.

To help others

Voluntary workers play an essential role in our society. Many people in the local community work for voluntary agencies such as country fire brigades, Meals on Wheels or the State Emergency Service. They receive no financial payment, but do it for pleasure and the satisfaction of being able to help others.

FIGURE 5 Volunteers, such as lifesavers, receive no payment for their work but offer their services to the community freely.



6.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Are the following statements true or false?
 - (a) Five important reasons why people work are to earn an income, to improve their standard of living, to gain prestige and status, to obtain self-satisfaction and to make friends.
 - (b) The primary reason why people work is to earn a living.
 - (c) One benefit of working is to have your own office.
 - (d) Feeling a part of the work environment is important to workers.
 - (e) Most people sell their labour to an employee.
 - (f) The most common form of income is pocket money.
 - (g) The type of work someone does is often used to measure that person's status and prestige.
 - (h) Voluntary workers play a very small role in our society.
2. List three examples of voluntary work.

Explain

3. Look at the reasons given in this section for why people work. Do you agree with them? Explain your answer.
4. Explain how the teenage girl with her first pay packet was able to improve her standard of living.

Think

5. Complete these sentences:
 - (a) We purchase goods and services to _____.
 - (b) Voluntary work is just as important as paid work because _____.
 - (c) The income I will earn from my job will help me to _____.

- (d) We can improve our standard of living by _____.
- (e) Self-satisfaction is important because _____.
6. Rank each of the following occupations according to their level of status and prestige on a 1 to 10 scale, where 1 is the highest status and 10 the lowest. Compare your list with other class members.
- Entertainers
 - Doctors
 - Teachers
 - Bankers
 - Firefighters
 - Scientists
 - Police
 - Athletes
 - Plumbers
 - Computer programmers
7. In groups of four or five, discuss the following statement: 'What a person does is more important than what she or he is paid'.

Discover

8. Conduct a small survey of your family and friends to find the reasons they go to work. Present your information in a table similar to the one shown at right. What are the top three reasons people work? Present your results to the class and discuss your conclusions.
9. If you had the opportunity to be a volunteer worker, what would you do and why?
10. You have been hired by a voluntary agency such as Lifeline to prepare a float display in a forthcoming street procession. The display must raise the status of the agency's volunteer workers. Work in groups to design and present a float display for your selected voluntary agency. Consider your message, costumes, roleplay actions, banners, decorations and music. Incorporate constructive feedback provided by the class in deciding how you could improve a future display.
11. Using the Yellow Pages or internet resources, prepare a list of five volunteer agencies that operate in your area.

Reasons for working	
Person 1	
Person 2	
Person 3	
Person 4	

6.4 Different types of work

6.4.1 Paid and unpaid work

As we have already discovered, paid work is defined by the Australian Bureau of Statistics as performing services for one hour or more per week in return for receiving money or income, while unpaid work comprises those tasks performed without receiving an income. Jobs such as cooking, cleaning and gardening are all work, but you cannot argue that you are employed when you are cleaning your room! Household chores do not earn an income, although your parents may reward you with pocket money or an

FIGURE 1 Paid work is work carried out in exchange for income.



allowance for performing them. In the world of economics, however, pocket money is not considered an income. Other examples of unpaid work are family duties, school, voluntary work and community service.

6.4.2 The labour force and its workers

Australia's labour force is made up of people who are working and people who are actively looking for employment, whether it is **full-time**, **part-time**, **casual** or **seasonal**. As we saw in subtopic 6.2, the labour force is made up of people aged 15 and over who are either employed (including self-employed people) or unemployed. People not regarded as part of the labour force include:

- pensioners
- people with a physical or mental disability who are unable to work
- full-time students who do not work
- full-time carers at home looking after children
- volunteers working without pay in institutions such as the State Emergency Service and charities.

A small percentage of the labour force (just under 6 per cent in 2016) is unemployed. This group is still included in the statistics on employment rates in Australia.

To be considered employed, you must fulfil all these requirements:

- be aged 15 years or over
- have worked for at least one hour in the week, or have a job even though you were not at work in the week
- have received pay, profit, commission, or payment of some kind for your work.

In Australia we have **industry-wide awards** that set out the minimum wages and **working conditions** for all employees in an entire industry or occupation. These awards also set out the award hours, which are the minimum weekly hours of work that a person covered by that award must be given.

Types of workers

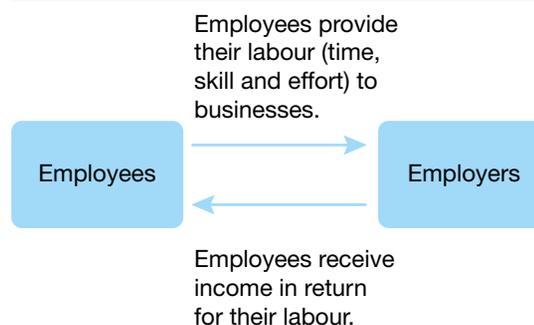
In Australia, workers are classified as full-time or part-time, permanent or casual, seasonal, or even on and off. The three main categories are described in table 1.

TABLE 1 Different types of workers

Type of worker	Features
Full-time worker	<ul style="list-style-type: none"> • Ongoing employment • Number of hours per week is 35 or more
Part-time worker	<ul style="list-style-type: none"> • Ongoing employment • Number of hours per week is fewer than 35 • Number of hours may be fixed or variable
Casual worker	<ul style="list-style-type: none"> • Employed on an 'as needed' basis • No permanent weekly roster • Hours vary from week to week; for instance, 10 hours one week and 3 hours the next • May work for more than one employer

In recent years, the number of casual and part-time workers has grown, with an increasing number of women in the workforce. According to the ABS, working women outnumbered working men in May 2014, with females comprising 50.5 per cent of the total working population while males made up 49.5 per cent.

FIGURE 2 The employment relationship



The same survey found that full-time workers made up 60.0 per cent of all employees, while only 40.0 per cent of employees worked on a part-time basis. Here there are striking differences between working men and women: 76.6 per cent of male employees worked full-time but only 43.7 per cent of female employees did so (see table 2). The majority of female employees worked part time (56.3 per cent), and a greater proportion of female employees (25.6 per cent) were casual than were male employees (17.4 per cent). Responsibility for the care of children is a likely factor for women finding it more difficult to work full time or overtime.

TABLE 2 Work differences between the sexes

	% of male employees	% of female employees	% of total labour force
In full-time work	76.6	43.7	60.0
In part-time work	23.4	56.3	40.0
In casual work	17.4	25.6	21.6

Source: Data compiled from Australian Bureau of Statistics, *Employee earnings and hours, Australia, May 2014* (cat. no. 6306.0).

The unemployed

The unemployed are those people who are actively looking for work but are not presently employed. It includes people who have lost their jobs due to changes in the economy, those about to start a new job, and those who are between jobs (e.g. fruit pickers and ski-resort workers). Remember that not all work is paid. Volunteers freely give up their time and energy to help the community, and parents stay at home to look after small children. These people are performing important work but they are not counted as part of the labour force.

Table 3 compares unemployment rates across three countries. It shows that the unemployment rate for Australia spiked in 2008–09 during the global financial crisis (GFC), then remained fairly steady for the next three years before starting an upward trend. In contrast, the US unemployment rate has shown a steady decline after a massive jump in 2009. This jump can be attributed to the GFC, which has also contributed to the trend towards an increase in the number of part-time jobs.

FIGURE 3 Ski instructors are seasonal workers who are employed only during winter.



TABLE 3 Unemployment rates (annual percentage) across three countries

	Australia	Japan	USA
	%	%	%
2007	5.1	4.0	5.1
2008	4.2	4.0	5.8
2009	5.6	5.1	9.3
2010	5.2	5.0	9.6
2011	5.1	4.6	8.9
2012	5.2	4.3	8.1
2013	5.7	4.0	7.3
2014	6.1	3.6	6.2
2015	6.1	3.4	5.3

Source: OECD (2016), *Unemployment rates*.

Permanent, casual and seasonal workers

Permanent workers are those who as part of their working conditions are entitled to either paid holiday leave or sick leave, or both. Casual workers are those who as part of their working conditions are not entitled to either paid holiday leave or sick leave, or both. Seasonal workers are usually workers who are employed during a season, such as summer or winter. For example, apple fruit pickers would only work during the apple harvesting season and ski instructors would only work during the cold winter season when there is snow.

6.4.3 Voluntary work

When we look at Australia's labour force we tend to focus on who is employed, who is unemployed or who is seeking employment. Often we neglect to acknowledge the valuable contributions made by groups that do not fit into these categories. These groups include:

- volunteers, such as country firefighters or medical specialists working with Doctors without Borders (Médecins Sans Frontières)
- a grandparent caring for a grandchild
- parents caring for a sick or disabled child
- parents who stay at home to raise the family.

Voluntary workers play a significant role in society. Their contribution to the economy is vital, necessary and valuable. Many people work on a part-time basis for non-profit agencies such as the Country Fire Authority (CFA), Meals on Wheels, State Emergency Service, help lines, and with community support groups such as those helping the aged, reading to pre-school children, or even handing out pamphlets for political parties on election day. These workers will usually not receive any payment for the work they perform. They freely volunteer their time and effort to help others in the community, yet in many cases are undervalued and do not receive the recognition they deserve.

6.4.4 Self-employment

The majority of people employed in Australia — almost 57.3 per cent — work for medium and large **organisations** which have between 100 and 1000 employees and are involved in **business activities**. About 23.3 per cent are employed by small businesses with fewer than 20 employees. However, a minority of people find it more fulfilling to run their own businesses rather than work for someone else. They prefer to be self-employed.

People who believe they have the necessary skills and knowledge to start up their own business are called risk takers or **entrepreneurs**. Entrepreneurs often display **enterprising behaviours** by starting businesses in new markets — locally, nationally or globally. They usually have high skills in a number of areas

FIGURE 4 City ambassadors are volunteer workers who provide assistance to tourists in Melbourne.



such as manufacturing, design and production, accounting, management, marketing and **entrepreneurship**. Entrepreneurship is the ability to demonstrate the skills and risk taking related to the creation, organisation and management of a business or enterprise (think back to your work on entrepreneurs in subtopic 5.2).

The ABS reports (in cat. no. 8165.0) that as of June 2015 there were 2 121 235 actively trading businesses, or businesses involved in some element of business activity, in Australia. This was a 1 per cent increase from 2014. In the 2014–15 year, 12.4% of all businesses exited the market. The vast majority of failed businesses were small businesses. This means that although many people see themselves as having the necessary skills, ability and knowledge to start a business of their own, the chances are high that they will not succeed and will end up seeking employment elsewhere.

CASE STUDY

Bremmera Foods

Bremmera Foods is owned by two young entrepreneurs, Bill Kondoleon and Denis Keno, who saw a niche in the yoghurt market and took advantage of it to start up their own factory that produces Greek-style yoghurt. The men, well aware of the constant appetite the community has for new and healthy products, noticed a void in the industry for good quality yoghurt. Within 18 months, they had grown big enough to move into a factory quadruple the size of their original operations. Today, they offer a range of healthy and new products to consumers.

Source: Adapted from *Neos Kosmos* (English edition) 13 April 2009, p. 4.

6.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Distinguish between paid and unpaid work.
2. How many hours a week must an employee work to be considered working full time?
3. List three examples of volunteer work.
4. Match the following terms to the statements listed.

Term	Statement
Part time	Thirty-five hours a week are worked.
Full time	Working two hours each day from Monday to Friday.
Casual	The hours of work change each week.

Explain

5. Explain the difference between:
 - (a) casual work and part time work
 - (b) paid and unpaid work.
6. Tom stays home and looks after the house and children all week, and Janet works as a doctor. Who is working? Explain your answer.

Think

7. Unscramble the following words and then use them in a sentence to explain what they mean.
 - (a) cofer lbrauo
 - (b) ryopmlee
 - (c) okwr
 - (d) moicen
8. Why do you think the role of women in the workforce has changed since the 1970s?

9. Use table 4 to answer the following questions.

TABLE 4 International comparisons of employment and unemployment figures in 2010

Selected countries	Economically active population		Participation rate		Employment	Unemployment	
	Persons '000	Males %	Females %	Persons %	Persons '000	Persons '000	Rate %
Australia	11 867.7	72.5	58.7	65.5	11 247.0	620.8	5.2
Canada	18 525.1	71.7	62.4	67.0	17 041.0	1 484.1	8.0
France	28 378.5	62.2	51.9	56.8	25 735.8	2 847.2	9.8
Greece	5 017.4	64.2	44.1	53.9	4 388.6	628.7	12.5
Hong Kong (SAR of China)	3 675.9	na	na	na	3 518.3	157.6	4.3
Indonesia	116 262.8	na	na	67.8	107 806.7	8 456.1	7.3
Italy	24 974.7	59.4	38.2	48.4	22 872.3	2 102.4	8.4
Japan	65 898.3	71.6	48.5	59.6	62 563.3	3 335.0	5.1
Korea, Republic of (South)	24 746.9	73.0	49.4	61.0	23 828.8	918.1	3.7
Malaysia	11 679.1	na	na	62.9	11 291.4	387.7	3.3
New Zealand	2 332.5	74.4	62.1	68.1	2 180.3	152.2	6.5
Singapore	3 128.2	na	na	na	3 063.3	64.8	2.1
Sweden	4 960.6	73.9	67.3	70.7	4 545.3	415.3	8.4
United Kingdom	31 381.8	69.1	56.0	62.4	28 941.5	2 440.2	7.8
United States of America	153 888.7	71.2	58.6	64.7	139 063.9	14 824.8	9.6

Source: ABS 1301.0 — Year Book Australia, 2012; International Labour Organization, LABORSTA database.

- Which country has the greatest number of unemployed people?
 - Which country has the highest rate of unemployment?
 - Which country has the greatest number of employed people?
 - Which country has the lowest participation rate for all persons?
 - Which country has the highest male participation rate?
 - Which country has the highest female participation rate?
10. Undertake a quick survey of your class to see how many people have parents who work for a living. List the type of work they do and present this information in a table.
11. Conduct a survey of your family and friends on the hours they work. Present your information in the following table and discuss your conclusions with the class.

Work arrangements	Number of hours per week	Reasons for work arrangement
Full time		
Casual		
Part time		
Other (describe)		

12. Why do the greatest majority of people who work full time happen to be men, while the greatest proportion of part-time or casual staff are usually women? Discuss.

Discover

13. Australian Bureau of Statistics has a graph that plots the changes in the proportion of people participating in the labour market from 1966 to 2013. Use the **ABS labour statistics** weblink in the Resources tab to view this graph and then describe the changes in the labour market that it illustrates.

6.5 Work, the economy and society

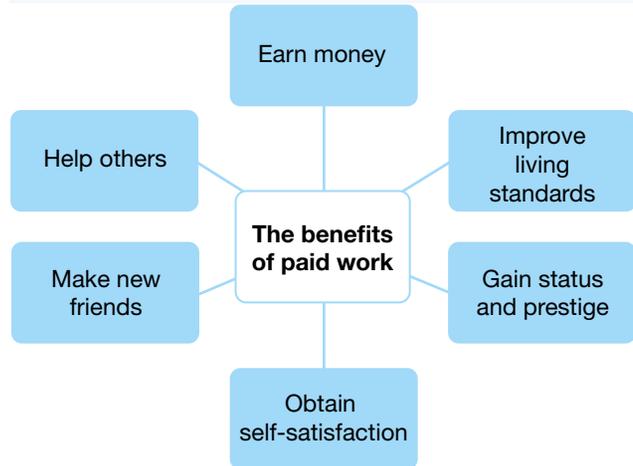
6.5.1 The benefits of work

Much of this topic has focused on the importance of work for individuals. However, work also plays an important role within the Australian economy and wider society. The work that people do is what keeps the Australian economy ticking over.

Work affects the economy in a number of ways such as:

- avoiding poverty
- improving productivity
- generating income.

FIGURE 1 There are many benefits of paid work.



6.5.2 Poverty

When you use the term ‘poverty’ to describe a person’s living conditions, what do you imagine? Do you think that poverty only exists in developing countries? Is it only unemployed people who live in poverty?

For a wide variety of reasons, many people live in poverty, both in Australia and globally. Work is important because it reduces the likelihood of a person living in poverty. In saying this, there are people who work and still struggle to meet their basic needs. Some groups such as single parents, young people and people with a disability face a higher risk of living in poverty (see table 1).

It is quite difficult to measure poverty. In particular, it is difficult to compare the experience of people living in poverty in Australia with that of those living overseas. This is because the income of people and the cost of living varies greatly from country to country. When measuring poverty, it is useful to consider both absolute poverty and relative poverty.

- *Absolute poverty* is often referred to as extreme poverty. This condition refers to an individual or family’s inability to pay for basic necessities in life such as food and shelter. Australia is a very wealthy country and therefore the number of people living in absolute poverty is much lower than in developing countries such as China and India. Governments and charities (e.g. the Salvation Army) provide assistance to people who cannot afford basic needs.

FIGURE 2 Having a job usually reduces the likelihood of living in poverty.



- *Relative poverty* is a measure of a person or family's income compared to the income of others. It is measured by working out the median (middle) income and then setting a 'poverty line' — usually a proportion of the median income. For example, it may be determined that a person earning less than 50 per cent of the median income is living below the poverty line.

Table 1 shows that certain groups in Australia are at a high risk of living in poverty. For example, 27.4 per cent of people with a disability were living in poverty in 2011–12. They were considered to be living in poverty because they earned less than 50 per cent of the median income.

TABLE 1 Groups in Australia at high risk of poverty, 2011–12

Specific group	Proportion of each group earning less than 50% of the median income
Unemployed households	61.2%
Single adults over 65 years of age	25.2%
Households whose main income is a welfare payment	40.1%
People with a disability	27.4%
Single-parent families	33.0%
All people	13.9%

Source: Adapted from Australian Council of Social Service, *Poverty in Australia 2014*.

A person's employment status (full-time, part-time or unemployed) also greatly affects their likelihood of living in poverty. Table 2 shows that only a small number of full-time workers (4.7 per cent) were living below the poverty line in 2011–12. However, 61.2 per cent of unemployed people were considered to be living below the poverty line. This shows that working greatly reduces the risk of poverty.

TABLE 2 Risk of poverty based on employment status, 2011–12

Specific group	Proportion of each group earning less than 50% of the median income
Employed full-time	4.7%
Employed part-time	15.9%
Unemployed	61.2%

Source: Adapted from Australian Council of Social Service, *Poverty in Australia 2014*.

6.5.3 Work and productivity

Productivity is an important indicator in our economy. It tells us how efficiently inputs (such as labour and machinery) are being used to produce outputs (finished products). Businesses are always striving to improve productivity because this will help them be more profitable.

In our work, whether at school, at home or in a workplace, we are always looking for ways of improving how we do things. At school you may use tools such as a diary or a computer to help you with your work. The aim of these tools is to help you do things more efficiently and to a higher quality. They help you become a more productive student.

One of the most important ways to increase productivity is to improve the education, training and skills of workers. This can be seen in the case study below relating to Stephen. While Stephen was still the same worker after completing a training course, and he was still using the same tools, the extra training allowed him to become a more productive worker. This would also help generate greater profit for the business.

The productivity of workers can also be improved by introducing technology that helps with the tasks they are performing.

CASE STUDY

Stephen improves his productivity

Stephen is a hairdresser. On average, Stephen was able to complete 2 haircuts per hour when he started working. Stephen's boss sent him to a training course to enhance his confidence and expertise. At the course, Stephen learned a number of strategies and skills that helped him perform his job more effectively. After the course, Stephen was able to complete 3 haircuts per hour. His level of productivity had increased.

FIGURE 3 Stephen's new skills improved his productivity.



A common way to measure a country's productivity is to calculate how much is produced by the entire workforce per hour worked. This is called labour productivity. In Australia, labour productivity is calculated by the Australian Bureau of Statistics as Gross Domestic Product per hour worked. Generally, the more that is produced by each worker in a given period of time, the more productive the country is.

6.5.4 Generating income

As we discovered earlier in this topic, work is the main way that people earn income. This income is important as it allows people to satisfy their needs and wants. A large proportion of a person's income is spent on goods and services to improve the quality of their life. The productive work of people also helps businesses to generate income in the form of profit.

Governments rely on individuals and businesses to generate income in our economy. When a person earns an income, part of it is paid to the government as taxation (see table 3). Similarly, when a business makes a profit, part of its income is taxed. Governments use the money collected from taxation to pay for collective services such as roads, hospitals and education. These services benefit all people in society and therefore improve our standard of living. They also help to reduce poverty.

TABLE 3 Individual income tax rates, 2015–16

Taxable income	Tax on this income
0–\$18 200	Nil
\$18 201–\$37 000	19c for each \$1 over \$18 200
\$37 001–\$80 000	\$3 572 plus 32.5c for each \$1 over \$37 000
\$80 001–\$180 000	\$17 547 plus 37c for each \$1 over \$80 000
\$180 001 and over	\$54 547 plus 45c for each \$1 over \$180 000

Source: Australian Taxation Office (ATO) website, *Individual Income Tax Rates*.

FIGURE 4 Governments use taxation to build infrastructure such as roads.



6.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Identify some ways that work contributes to the economy and society.
2. Define the term *productivity*.

Explain

3. Explain the difference between *absolute poverty* and *relative poverty*.
4. Explain some strategies that a business may use to increase the productivity of its workers.

Think

5. Examine the current rates of income tax in Australia shown in table 3. Do you believe that these rates are set at an appropriate level? Justify your answer.

Discover

6. Undertake research on an Australian or international business (or industry) that has seen an improvement in its level of productivity. Use your research to:
 - (a) identify the business or industry
 - (b) provide statistics or other evidence which prove that productivity levels have increased
 - (c) outline some of the strategies that have been used to improve productivity.

6.6 Alternative sources of income

6.6.1 Where does income come from?

Income can come from many sources. The main form of income for most people is the wage or salary they earn from their job. A person who receives a wage is paid an hourly rate for each hour they work. This may vary from week to week. However, a person on a salary receives a set amount of pay regardless of how many hours they work.

As well as wages and salaries, there are a number of alternative forms of income. Some of these alternative sources of income are outlined in table 1.

TABLE 1 Alternative sources of income

Alternative source of income	Description
Superannuation	Superannuation is the money that people save for their own retirement. Money is deducted from a person's weekly income and placed into a superannuation fund. People are able to access their superannuation upon retirement. Given that Australia's population is ageing, superannuation will become an increasingly important form of income. (It will be dealt with in more detail in section 6.6.2.)
Commission	People such as real estate agents may earn a commission. This means that for every sale they make they receive a small percentage of the money made. The more they sell, the larger the commission they receive.
Welfare payments	People may receive a welfare payment for a range of different reasons. Some retired people receive a pension to help them with their living expenses. Other people may receive a welfare payment if they are unemployed or if they are not working for some other reason (such as illness).
Rental income	A large number of people in Australia own an investment property. An investment property is one that the owners do not live in. Instead, they rent it out to tenants. The rent payments received from tenants provide an alternative source of income for the owners of the property.
Dividends	Some people choose to invest in companies. To do this they buy a 'share' in the company. These people will then become part owners of the business and they are known as shareholders. When the company makes a profit, they give some of the profit to the shareholders and this is called a dividend.

Various ways money is earned



- A Many teenagers start earning wages when they are 15 as casual workers at places such as supermarkets and bakeries. If you work more than your allocated hours per week, you may be eligible for overtime payments. You also may earn **penalty rates** for working on public holidays and weekends. Employees' rights are protected by awards. Taxation is payable on wages.
- B You may be financially rewarded for performing odd jobs. For example, if you helped your neighbours to build a front fence, they might pay you \$50 for a day's work. Some parents pay their children to mow the lawn, wash the car, weed the garden or walk the dog. Odd jobs require you to complete the task before you are paid. Pocket money is usually freely given to children by parents or grandparents.
- C Millions of people in Australia rely on government payments for full or partial support. These include unemployment benefits and sickness benefits.
- D Salary earners have full- and part-time jobs where the employer provides entitlements such as sickleave, superannuation and long-service leave. There is more certainty in salaried employment than in casual work, where people are paid by the hour and can be dismissed at short notice.
- E People such as real estate agents and sales assistants in car yards may elect to be paid on commission. This means they are paid according to the volume of sales they generate through their work.
- F Self-employed people make their own income. Many choose to protect the security of this income by taking out income protection insurance.

TABLE 2 Average weekly earnings of adults in full-time employment

Sex	2008	2009	2010	2011	2012	2013	2014	2015
Males	\$1232	\$1311	\$1362	\$1420	\$1492	\$1532	\$1588	\$1604
Females	\$1030	\$1081	\$1131	\$1174	\$1230	\$1271	\$1293	\$1328

Source: Adapted from Australian Bureau of Statistics, *Average weekly earnings* (cat. no. 6302.0).

6.6.2 Retirement income — a growing form of income in Australia

Planning for your future

Your parents probably started planning your future from the time they knew a baby was on the way — from how to furnish your bedroom, to what sort of education they would like you to receive and how it could be funded. As you get older, you assume the responsibility for planning your life and start to make your own plans — about buying a car, travelling overseas, undertaking further training or education, buying a house, getting married, having children, perhaps helping your children achieve their goals, and finally retiring. Your plans need not be so conventional, of course, but you cannot work all your life and you must expect to retire one day. Although that day seems like it is very far away, retirement is something you should start planning for from the time you begin working and paying taxes.

FIGURE 1 Although it will probably be decades before you retire, you should start planning for retirement as soon as you begin earning money and paying taxes.



An ageing population

Australia's population is ageing, and the Baby Boomer generation (those born in the two decades following the end of World War II) have begun reaching retirement age. Over the next few years, this will have a great impact on the nation's ability to provide support for retirees. In the past, the government has supported retirees by providing them with an income in the form of a government pension. This may no longer be an option by the time the bulk of the Baby Boomers retire because there will be more people in the non-working category than there are in the working category.

The federal government is responsible for developing retirement policies to help ensure that most Australians can live a decent life after they stop working. It has made significant changes to its retirement age policies, prompted mainly by the increased life expectancy of Australians. Advances in medicine — mainly due to technology in the form of new surgical equipment and new drug development resulting in new medicines — have enabled people to live longer. As you can see from table 3, by 2014 life expectancy at birth had reached 80.3 years for males and 84.4 years for females. Life expectancy in 1996 was lower at 75.2 years for males and 81.1 years for females.

FIGURE 2 Improvements in science and technology have decreased infant mortality and increased life expectancy, creating an ageing society.



TABLE 3 Life expectancy (in years) at birth in Australia, 2004–2014

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Males	78.1	78.5	78.7	79.0	79.2	79.3	79.5	79.7	79.9	80.1	80.3
Females	83.0	83.3	83.5	83.7	83.7	83.9	84.0	84.2	84.3	84.3	84.4

Source: Australian Bureau of Statistics, *Deaths, Australia 2014* (cat. no. 3302.0).

If you retire ... where will your income come from?

Having enough income is vital if you want to enjoy your retirement. While working, you receive a regular income which you use to pay bills and buy goods and services to satisfy your needs and wants. You adapt your spending to suit your income pattern. For example, you will probably pay your bills or buy your groceries on pay day. Taxation automatically comes out of your wage and is managed by your employer so you don't have to really worry about it. What happens when you retire — where will your income come from and how much money will you need?

CASE STUDY

How much money will you need in retirement?

The Association of Superannuation Funds of Australia (ASFA) Retirement Standard regularly releases figures showing how much an individual or a couple will need in order to live modestly or comfortably when they retire. For example, in March 2016 it estimated that a single retiree living a modest life required \$23 651 per year while a couple needed \$34 064. For a slightly more comfortable lifestyle, a single retiree would require \$42 893 while a couple would need \$58 922. A modest life is defined as having a lifestyle which is better than the current age pension but still only affording fairly basic activities, while a comfortable retirement lifestyle is defined as a lifestyle that enables:

an older healthy retiree to be involved in a broad range of leisure and recreational activities and to have a good standard of living through the purchase of such things as household goods, private health insurance, a reasonable car, good clothes, a range of electronic equipment, and domestic and occasionally international holiday travel.

Source: Association of Superannuation Funds of Australia.

Sources of retirement income include:

- superannuation
- the age pension
- private savings
- part-time work.

Superannuation

Superannuation is a way of accumulating money for retirement through a combination of employer, employee and government contributions towards a special fund for this purpose. If you earn more than \$500 a month, your employer automatically pays a contribution towards your superannuation. (You can see the amount listed on your pay slip.) In addition, you could start making your own contributions to your superannuation fund as part of a savings plan. When you retire you can then access your superannuation — but not before that time other than in exceptional circumstances.

Upon retirement you are given a choice as to how you will receive your superannuation income: as a lump sum, or as a regular weekly or fortnightly income.

Age pension

By the time you are old enough to retire, there is a real possibility that the only support for retirees will come from funds like superannuation. Your grandparents, however, were able to receive the age pension. The age pension consists of income support payments from the government to people needing social security and

FIGURE 3 Retirees can access an income from a wide variety of sources.



other related government programs. Other pensions and allowances are currently paid to the unemployed, the disabled, the sick, certain families with children, veterans and their survivors, and some students.

Australian men and women can access the age pension at 65 years of age, but by 2035 this will rise to 70 years of age. Other countries have different rules about when people can access government benefits after they retire. In France, for example, the age at which both men and women can access the pension is 62 years. Sweden has a flexible retirement age, allowing Swedes to retire and claim the state pension as early as 61 years. This is partly due to this country's strong economy and steady population.

Private savings

Another source of retirement income is any savings that you have accumulated during your working life and the interest received from banking those savings. You can then use these savings to buy an annuity (a stream of regular payments for a fixed period or for the rest of your life), or be very frugal and dip into your savings to pay your living expenses until your money runs out.

Part-time work

For many retirees, a natural progression towards retirement is to gradually leave the workforce by reducing their working hours. Simply changing from full-time to part-time employment can ease the transition towards retirement. During 2009–10, one-quarter of the total population in Australia was aged 55 years and over, and one-third of this age group was part of the labour force. The government has encouraged seniors to remain part of the workforce, and to contribute to the economy, by offering them tax benefits. It has also increased the minimum age at which they become eligible for the pension, thereby forcing many to remain at work.

Older workers — those aged between 45 and 64 years — currently account for nearly a quarter of those who are officially unemployed. In reality, this figure is likely to be even higher, as many older workers become discouraged about finding work, stop looking and 'retire'. Older workers are also much more likely to experience periods of long-term unemployment than younger workers. This is due to several factors:

- Some employers have negative attitudes towards older workers and discriminate on the grounds of age.
- Some employers believe older workers are slower and unable to adjust to new technology.
- Some employers have the attitude that older workers are likely to leave the job earlier as they are closer to retirement.
- Some older workers are reluctant to work under a younger manager.
- Some older workers are inflexible.

More men than women report that they are discriminated against on the basis of their age. The fact is there are laws that protect workers from discrimination at work on the basis of their age. Whatever our age, we all have the right to be treated fairly and to be given the same opportunities.

6.6 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Identify four reasons why a person may receive a welfare payment.
2. Define the term *commission*.

Explain

3. Explain how a *wage* is different from a *salary*.

Discover

4. Undertake research on Australia's superannuation system. Use your research to:
 - (a) identify when superannuation became compulsory in Australia
 - (b) determine the minimum amount of a person's income that must be contributed to their superannuation fund
 - (c) discuss some of the advantages of *compulsory* superannuation.

6.7 SkillBuilder: Analysing and evaluating

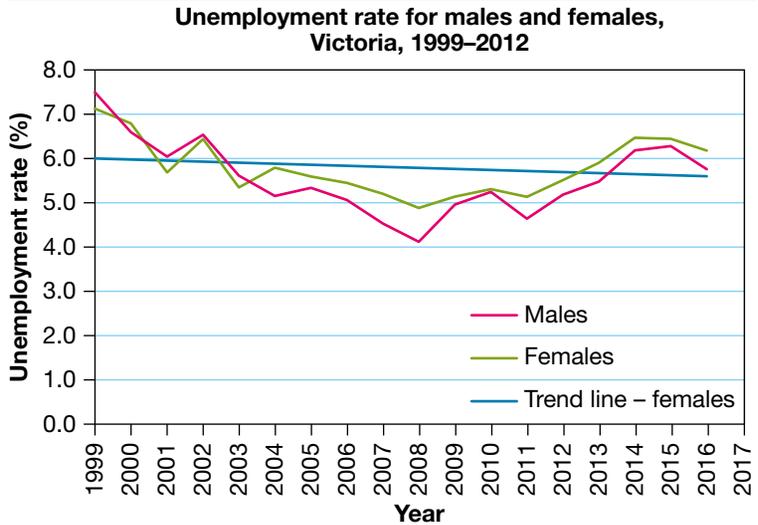
6.7.1 Tell me

Throughout this topic, you have seen different graphs displaying information about various aspects of work and income in Australia. We will now examine the line graph in greater detail.

6.7.2 Show me

Line graphs are useful for showing trends (patterns of change over time) and comparing data. When reading line graphs, find points on the graph where two variables meet to obtain specific information. For example, in figure 1 the variables being measured are the unemployment rates for males and females. We can see that the two curves cross at various points, indicating that the unemployment rate for males and females was the same at those points in time. We can see from the horizontal axis that the most recent time this occurred was in 2003 and the vertical axis shows that the unemployment rate was about 5.5 per cent, so we know that the unemployment rate for both sexes in 2003 was about 5.5 per cent.

FIGURE 1 Victoria's unemployment rate by gender, 1999–2016



Source: Graph based on data compiled from Australian Bureau of Statistics, *Labour force, Australia, May 2016* (cat. no. 6202.0).

6.7.3 Let me do it

Examine the graphs in this section and answer the questions that follow. Use what you have learned about graphs (trend line, vertical axis and horizontal axis, variables and the point at where variables meet) to analyse what each graph tells you.

1. Examine figure 2 and answer the questions that follow.

FIGURE 2 Total labour force by state, 2015–16



Source: Graph based on data compiled from Australian Bureau of Statistics, *Labour force, Australia, May 2016* (cat. no. 6202.0).

- (a) Which state employs the greatest number of people?
- (b) What state employs the least number of people?
- (c) How many people does Victoria employ?

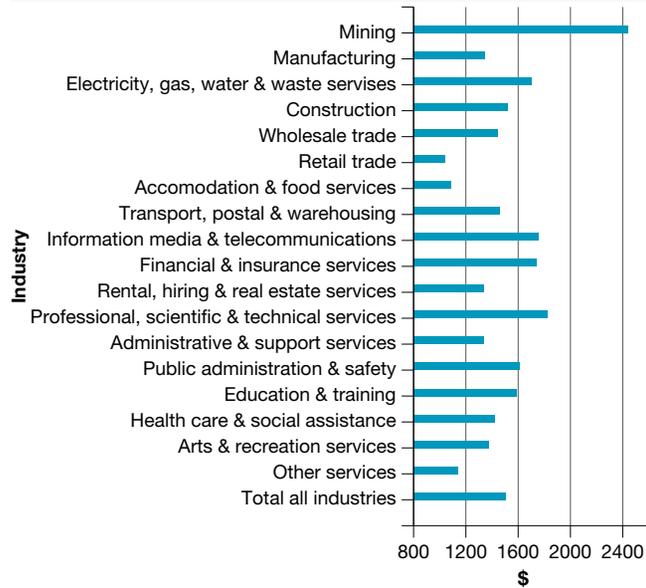
2. Examine figure 3 and answer these questions:

- (a) Which industry offers the highest average weekly earnings?
- (b) Which industry offers the lowest average weekly earnings?
- (c) What is the average weekly earnings of a person in the construction industry?
- (d) In which industry sector would a nurse be included?

3. Examine figure 4 and answer these questions:

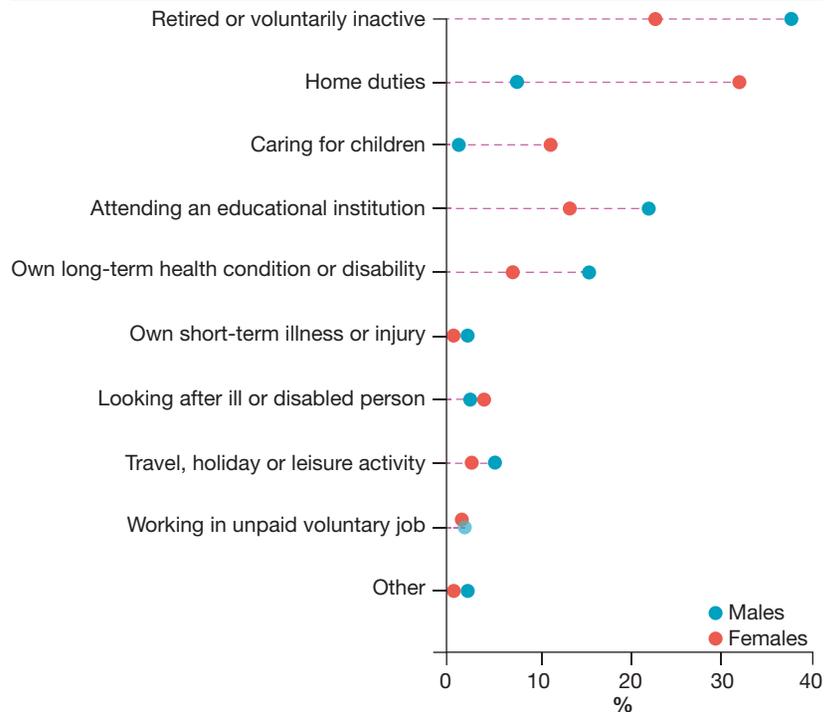
- (a) What percentage of males work in home duties?
- (b) What percentage of females work in home duties?
- (c) What percentage of males care for children?
- (d) What percentage of females care for children?

FIGURE 3 Full-time average weekly earnings, 2015



Source: Graph based on data compiled from Australian Bureau of Statistics, *Average weekly earnings, Australia, Nov 2015* (cat. no. 6302.0.).

FIGURE 4 Main activity when not in the labour force, 2010



Source: Graph redrawn from Australian Bureau of Statistics, *Year Book Australia, 2012* (cat. no. 1301.0).

4. Examine table 1 and answer these questions:

TABLE 1 Employed and unemployed persons, 2011–16

	March 2011	March 2012	March 2013	March 2014	March 2015	March 2016
Employed persons ('000)	11 196.2	11 390.0	11 485.4	11 546.1	11 766.2	11 974.8
Unemployed persons ('000)	589.8	620.4	675.8	717.0	729.9	715.5

Source: Data from Australian Bureau of Statistics, *Labour force, Australia, May 2016* (cat. no. 6202.0.).

- What trends do you see in the number of employed people during the period?
- What trends do you see in the number of unemployed people during the period?
- To what can you attribute these trends?

6.8 Review

6.8.1 Summary

Work is an important part of every person's life, necessary to fund the purchase of goods and services to meet needs and wants. Work also has non-financial benefits. The nature of work has changed significantly over the past two decades.

- Work can be paid or unpaid.
- Work can be voluntary, and volunteers make an important contribution to the community.
- It is important to have a balance between work and life.
- The labour force consists of people aged 15 and over who are able to work, and are either employed or looking for work.
- There are more males than females in full-time employment. Women tend to have more part-time or casual employment.
- Work contributes to the Australian economy by helping to reduce poverty, improve productivity and generate income.
- Alternative forms of income include superannuation, commission, welfare payments, rental income and dividends.
- The population of Australia is ageing as infant mortality falls, life expectancy rises, and new technology and medicines are developed.
- It is a good idea to start planning for your retirement as soon as you start working.
- Retirees still need to have an income.
- Retirement income streams consist of superannuation, pensions and savings.

6.8.2 Your turn

1. Discuss the benefits of being employed.
2. Explain how the concept of work has changed over time.
3. How do Australia's employment and unemployment rates compare with other countries?
4. Research one other country in terms of employment and unemployment and make direct comparisons with Australia.
5. Research one volunteer group that offers its services to the community. Examine what contributions it makes to society and how society or the community views them.

6. 'More males work full time than females.' Do you agree? Explain your response.
7. List all the activities you perform that could be classified as work but for which you don't get paid.

learnon RESOURCES — ONLINE ONLY

 Try out this interactivity: Working for a living crossword (int-5427)

UNIT 3

WATER IN THE WORLD

- 7** Geography concepts 111
- 8** Water as a resource 125
- 9** Our blue planet: water 149

TOPIC 7

Geography concepts

7.1 Overview

7.1.1 What is Geography?

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

The world around us is made up of a large range of interesting places, people, cultures and environments. Geography is a way of exploring, analysing and understanding this world of ours: especially its people and places. Studying Geography at school allows you to build up your knowledge and understanding of our planet, at different scales: the local area, our nation, our region and our world. In essence, geographers investigate the characteristics of places and the relationships between people and places.

7.1.2 Geography is ... about our wonderful world

Have you ever visited a place other than the one you live in? If so, you probably would have noticed some of the features and characteristics are similar, and some are different. Geographers aim to understand these characteristics as well as the relationship between people and the different environments around us.

As a geographer, you answer questions ranging from the local to the global, in the past, present and future. Along the way you will develop skills and inquiry methods to answer these questions for yourself.

FIGURE 1 Our planet is made up of a large variety of fascinating places, peoples, cultures and environments.



7.1.3 Geography is ... something you do

One of the best parts of studying Geography is the opportunity to visit places outside the classroom. Going on a field trip allows you to collect data and information for yourself and to work collaboratively with other members of your class.

Geographers use what is called an 'inquiry' approach. This means that you will investigate geographical questions by collecting, analysing, and interpreting information and data in order to develop your own understanding and draw your own conclusions. This helps you develop proposals for what should happen and what action should be taken in the future.

Studying Geography develops a wide range of skills that you can apply in your everyday life, in your future life and possibly in your career.

FIGURE 2 Using maps to work out locations and to plot data



FIGURE 3 Conducting a survey in the field

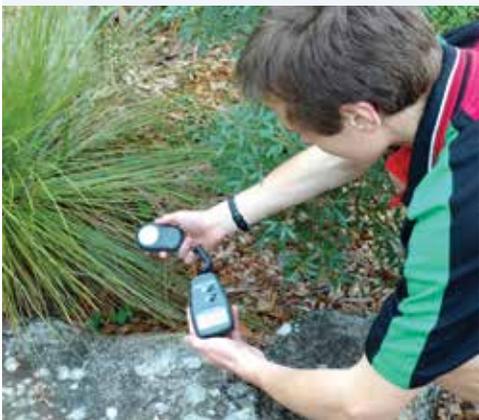


FIGURE 4 Collecting your own data and information



7.1.4 Geography is ... a way of thinking

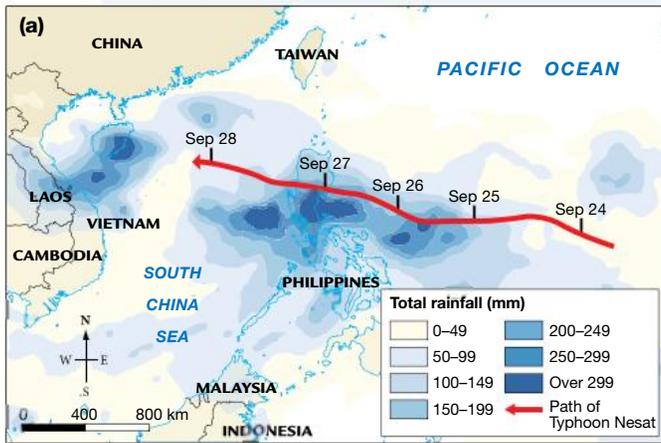
Geography is a way of thinking and a way of looking at the world. One of the key tools geographers use is a map. If you look really carefully at them, maps (such as the ones on this page and the next) contain a lot of information. As a student you will often use a variety of different types of maps produced by someone else (e.g. from this textbook, atlases and online). However, as a geographer you will produce your own maps and spatial information, by hand or digitally. Using and interpreting maps are important skills you will develop. It is also important to identify major patterns and trends in maps in order to unlock information they contain.

As a geographer you will use a set of geographical concepts to not only help you think geographically but also to investigate and understand the world.

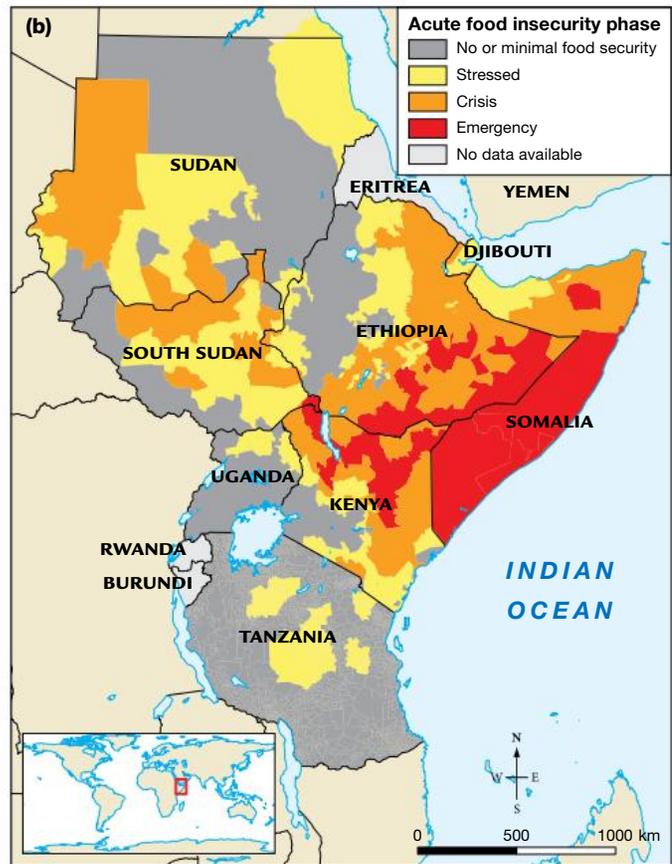
These concepts are space, place, interconnection, change, environment, sustainability and scale (see subtopic 7.2).

As a geographer you should also ask yourself: ‘What can I do and contribute as an informed and responsible citizen to make this world a better place?’

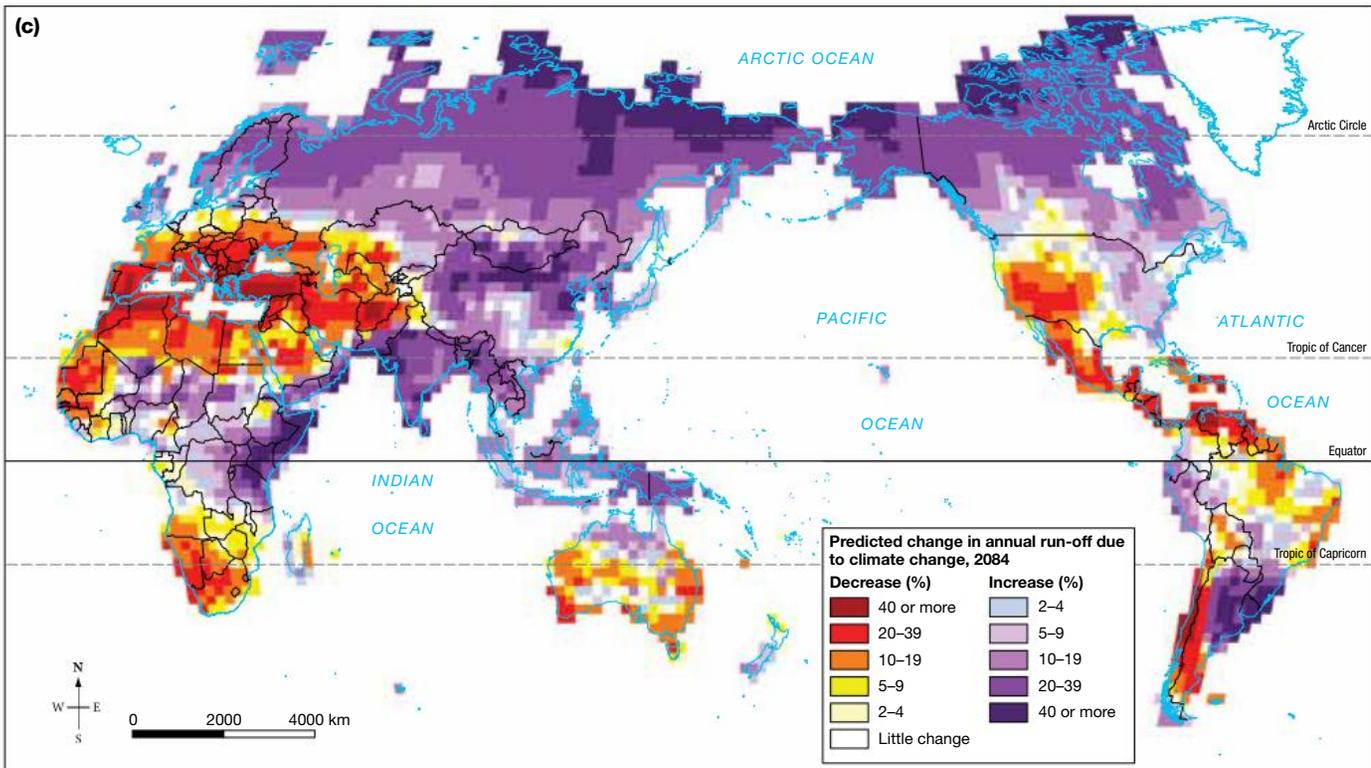
FIGURE 5 Maps: a key tool for the geographer



Source: NASA Earth Observatory

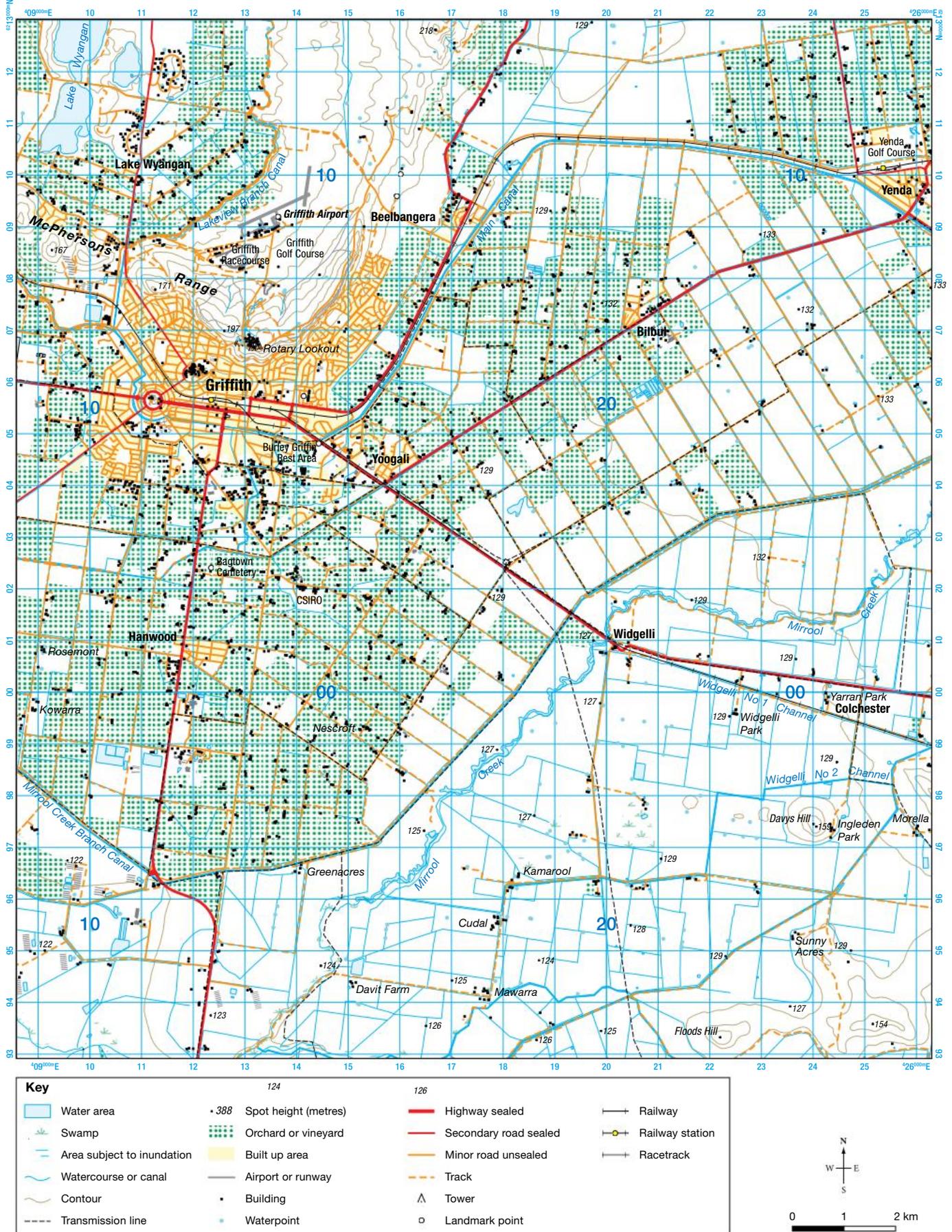


Source: USAID, FEWS NET 2011



Source: Geophysical Fluid Dynamics Laboratory, National Oceanic and Atmospheric Administration

FIGURE 6 Topographic maps are very useful for geographers as they provide a large amount of detail about places and environments.



Source: Spatial Vision

7.2 Geographical concepts

7.2.1 Overview

Geographical concepts help you to make sense of your world. By using these concepts you can both investigate and understand the world you live in, and you can use them to try to imagine a different world. The concepts help you to think geographically. There are seven major concepts: *space*, *place*, *interconnection*, *change*, *environment*, *sustainability* and *scale*.

In this book, you will use the seven concepts to investigate two units: *Water in the world* and *Place and liveability*.

7.2.2 What is space?

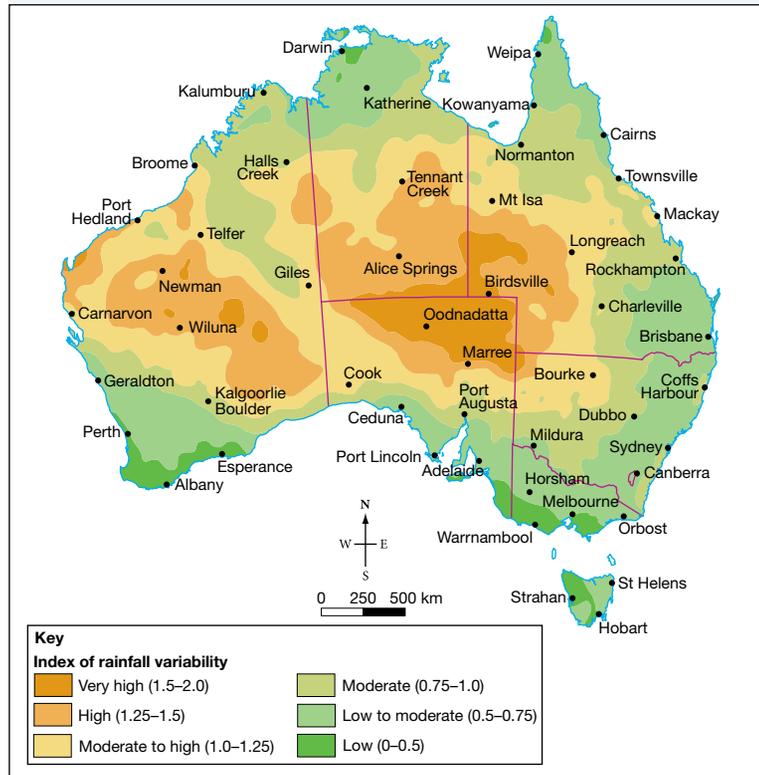
Everything has a location on the space that is the surface of the Earth, and studying the effects of location, the distribution of things across this space, and how the space is organised and managed by people, helps us to understand why the world is like it is.

A place can be described by its absolute location (latitude and longitude) or its relative location (in what direction and how far it is from another place).

FIGURE 1 A way to remember these seven concepts is to think of the term SPICES.

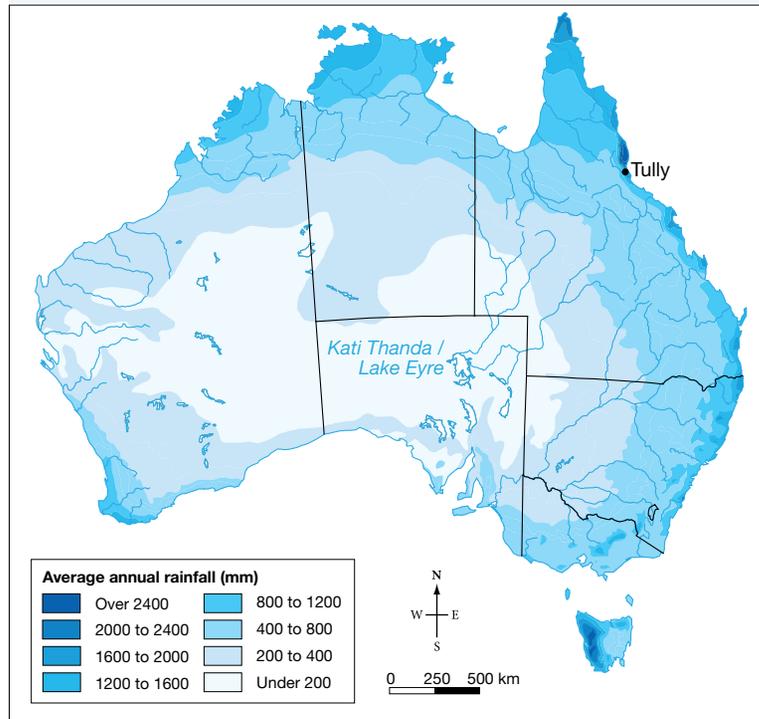


FIGURE 2 Australian annual rainfall variability, 1900–2003



Source: MAPgraphics Pty Ltd, Brisbane

FIGURE 3 The amount of rain that falls in Australia varies from place to place, as this rainfall map shows.



Source: Bureau of Meteorology, 2003, on the Australian Water Map, Earth Systems Pty Ltd

7.2.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Refer to figures 2 and 3.

1. Use an atlas to give the absolute location (latitude and longitude) of the capital city of the state/territory in which you live.
2. In which direction and how far is your capital city from Alice Springs (relative location)?
3. Describe the **spatial** distribution of capital cities in Australia.
4. Describe the distribution of rainfall across Australia. Why might one place have more or less rainfall than another?
5. How does rainfall (or lack of rainfall) help explain the distribution of Australia's major cities? What is the relationship between rainfall and population location?
6. Find where you live on the maps. How is the location of your **place** influenced by rainfall and rainfall variability?



Deepen your understanding of this topic with related case studies and questions.
 ● Space



7.2.3 What is place?

The world is made up of places, so to understand our world we need to understand its places by studying their variety, how they influence our lives and how we create and change them.

You often have mental images and perceptions of places — your city, suburb, town or neighbourhood — and these may be very different from someone else's perceptions of the same places.

FIGURE 4 Mount Tom Price township and mine in Western Australia, with fly in, fly out (FIFO) workers huts in the left foreground



7.2.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Refer to figure 4.

1. Where is this **place** located? (Refer to an atlas.)
2. What is this **place** like? (What are its natural characteristics? What are its human characteristics?)
3. How have people changed this **place**?
4. Why do you think that Mount Tom Price township was settled in this location?
5. What services and facilities are provided by this **place**? How is this different to where you live?
6. How do you think the **environment** of Mount Tom Price affects the people who live there?
7. How might this **place** change in the future?
8. How do you think this **place** affects the lives of the people who live there?



Deepen your understanding of this topic with related case studies and questions.

📍 Place

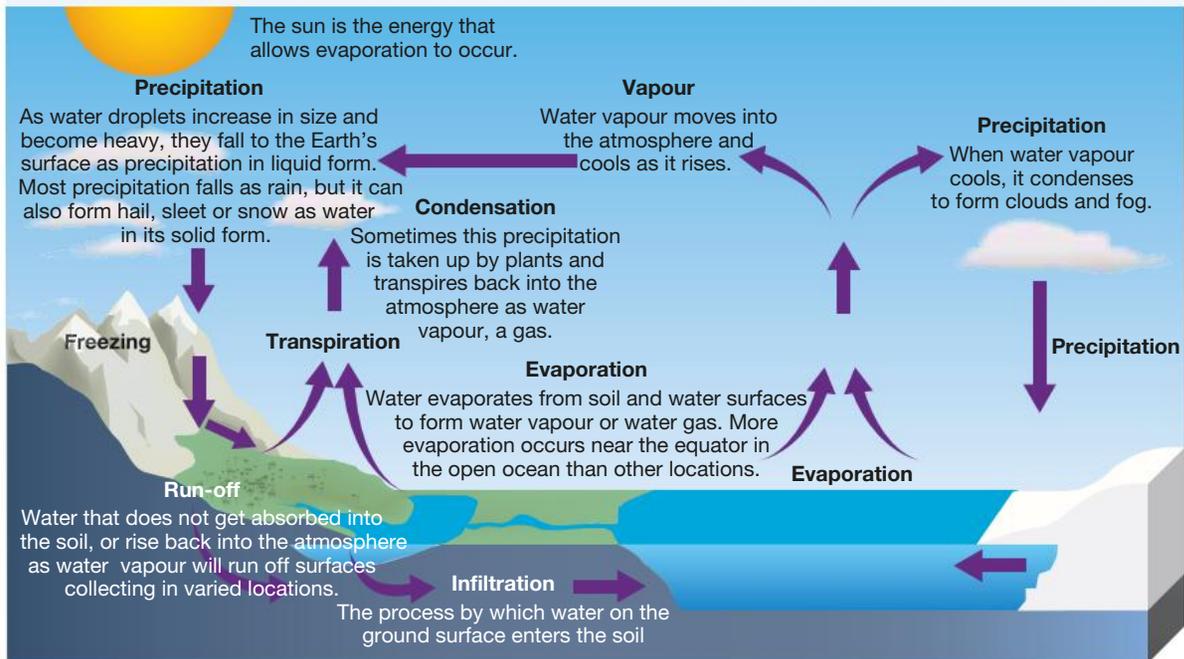


7.2.4 What is interconnection?

People and things are connected to other people and things in their own and other places, and understanding these connections helps us to understand how and why places are changing.

An event in one location can lead to change in a place some distance away.

FIGURE 5 The water cycle shows many interconnections.



7.2.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Refer to figure 5.

- Describe how the following are **interconnected** in the water cycle:
 - precipitation and condensation
 - evaporation and condensation
 - the sun (solar energy) and evaporation
 - the sun (solar energy) and transpiration.
- What would happen to the amount of evaporation if there was a drought and little or no precipitation?
- What might happen in different parts of the water cycle if rising temperatures cause ice and snow to melt?
- How would very high rainfall in a short time link **environments** and people?
- How are precipitation and vegetation linked?



Deepen your understanding of this topic with related case studies and questions.
● Interconnection



7.2.5 What is change?

The concept of change is about using time to better understand a place, an environment, a spatial pattern or a geographical problem.

The concept of change involves both time and space — change can take place over a period of time, or over an area. The time period for change can be very short (for example, the impact of a flash flood) or over thousands or millions of years (for example, the development of fossil fuel resources).

Environmental change can occur over short or long periods of time. The use of technology can result in rapid change — think of the explosions at a mining site that reveal mineral seams.

The degree of change occurring can be used to predict, or plan for, actual or preferred futures.

FIGURE 6 Port Douglas, 60 km north of Cairns, was a busy port in the 1870s, with a population over 10 000. The mining that had attracted people to this hot, wet area did not last. By the 1960s, the population was only 100. In the 1980s, road and air access to the town improved and tourist numbers to the area grew. The permanent population is now about 1300. During the peak holiday season (May to November), this number increases by four times.

(a) 1971



(b) 2009



7.2.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Refer to figure 6.

1. How and why has the population of Port Douglas **changed** over time?
2. Which economies have declined and grown in the Port Douglas area?
3. How has technology (transport links) been important in the development of this **place**?
4. How do you think the **changes** have affected the **environment**, businesses and economy in the area?
5. List five **changes** you can observe in the two photographs of Port Douglas.
6. Use evidence from the photographs to decide if the natural environment has changed faster than the human **environment**.
7. What is your preferred future for this **place**? What **changes** need to occur for your preferred future to come about?



Deepen your understanding of this topic with related case studies and questions.
Change



7.2.6 What is environment?

People live in and depend on the environment, so it has an important influence on our lives.

The environment, defined as the physical and biological world around us, supports and enriches human and other life by providing raw materials and food, absorbing and recycling wastes, and being a source of enjoyment and inspiration to people.

FIGURE 7 Pacific Islanders use traditional methods to fish sustainably.



7.2.6 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Refer to figure 7.

1. Do you think the photograph of Pacific Islanders fishing is a natural **environment** or a human **environment**? Explain.
2. Does this **environment** appeal to you? Would you like to visit this **place**? Why? Why not?
3. Which resource/s do you think people would obtain from this **environment**?
4. Describe how these people are fishing. Why might this be **sustainable**?
5. List the impacts on this **environment** if a factory was built on the edge of the water.
6. How have people changed this **environment** (for better or worse)? What are the positive and the negative aspects of this?
7. How might technology **change** this **environment** to make it less **sustainable**?



Deepen your understanding of this topic with related case studies and questions.

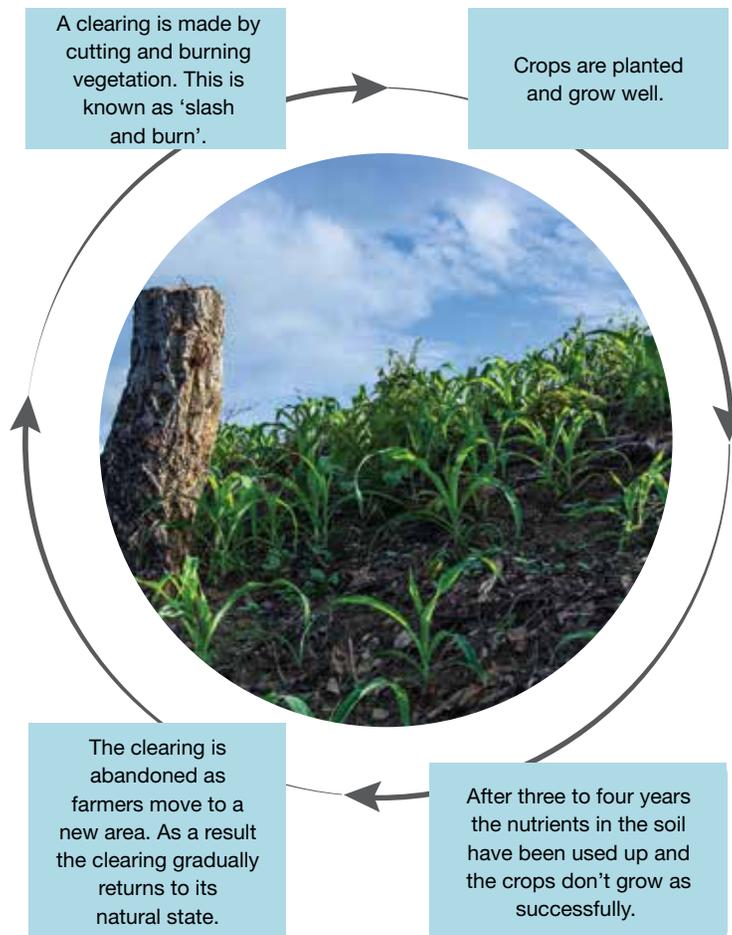
Environment

7.2.7 What is sustainability?

Sustainability is about maintaining the capacity of the environment to support our lives and those of other living creatures.

Sustainability is about the interconnection between the human and natural world and who gets which resources and where, in relation to conservation of these resources and prevention of environmental damage.

FIGURE 8 The process of shifting cultivation means that farmers move on when an area becomes unproductive, allowing the land to recover.



7.2.7 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Refer to figure 8.

1. What evidence is there that the **environment** shown in the image is being conserved?
2. How is this area being maintained so that its resources can be supplied continuously into the future?
3. Is there evidence that the aesthetic (beauty) elements of this **environment** are being protected?
4. How would the **environment** be changed if all the area shown was cleared and farmed at the same time?
Would this be **sustainable**?
5. Can you think of any farming methods that are not **sustainable**? List these.



Deepen your understanding of this topic with related case studies and questions.
Sustainability



7.2.8 What is scale?

When we examine geographical questions at different spatial levels we are using the concept of scale to find more complete answers.

Scale can be applied at personal and local levels to regional, national or global levels. Looking at things at a range of scales allows a deeper understanding of geographical issues.

Different factors can be involved in explaining phenomena at different scales. Local events can have global outcomes; for example, removing areas of forest at a local scale can have an impact on climate at a global scale. A policy at a national scale, such as forest protection, can have an impact at a local scale, such as the protection of an endangered species.

FIGURE 9 Mental map of Jayden's local place (a) by Jayden and (b) by Annette, Jayden's mother

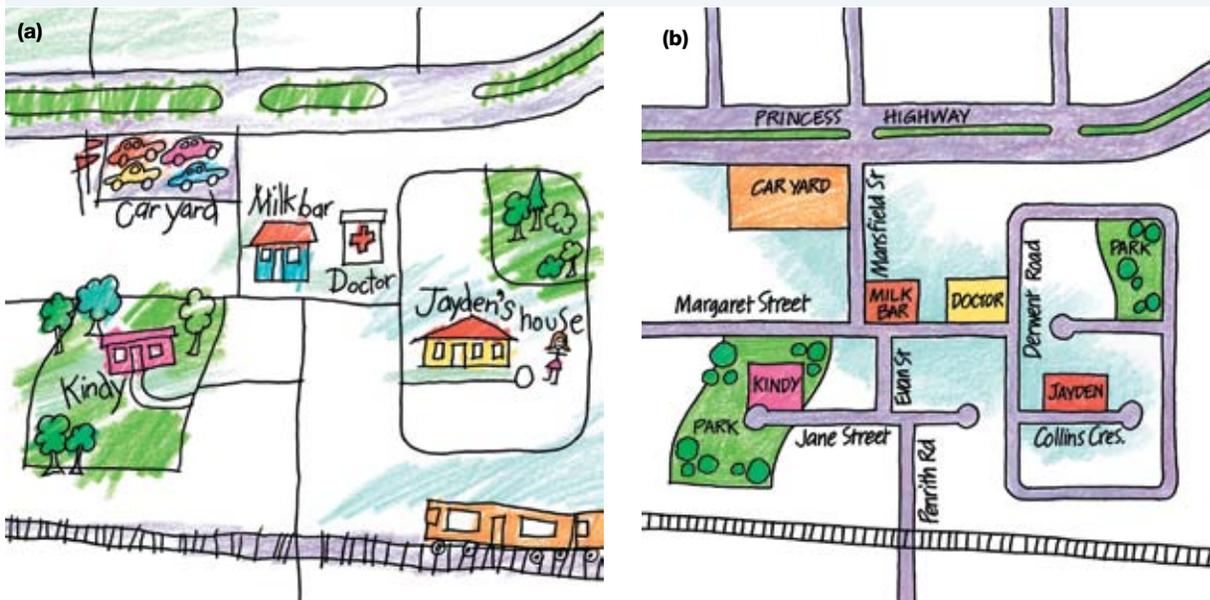


FIGURE 10 Railway route and main settlements between Sydney and Perth



Source: Spatial Vision

7.2.8 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Refer to figures 9 and 10.

1. If you were to zoom in on the areas on these maps, would you see more or less detail?
2. List the detail and information you can see on the railway map. Compare this to the local neighbourhood maps. Which gives you more information?
3. Refer to the railway map. What might be the relationship between the location of settlements and the location of the railway?
4. The railway map is of a regional **scale**. Which region of Australia is it showing?
5. Use the scale to measure the longest straight stretch of railway shown on the map. How long is it? Why is it significant?
6. What is the main information each map is trying to show?



Deepen your understanding of this topic with related case studies and questions.

• Scale

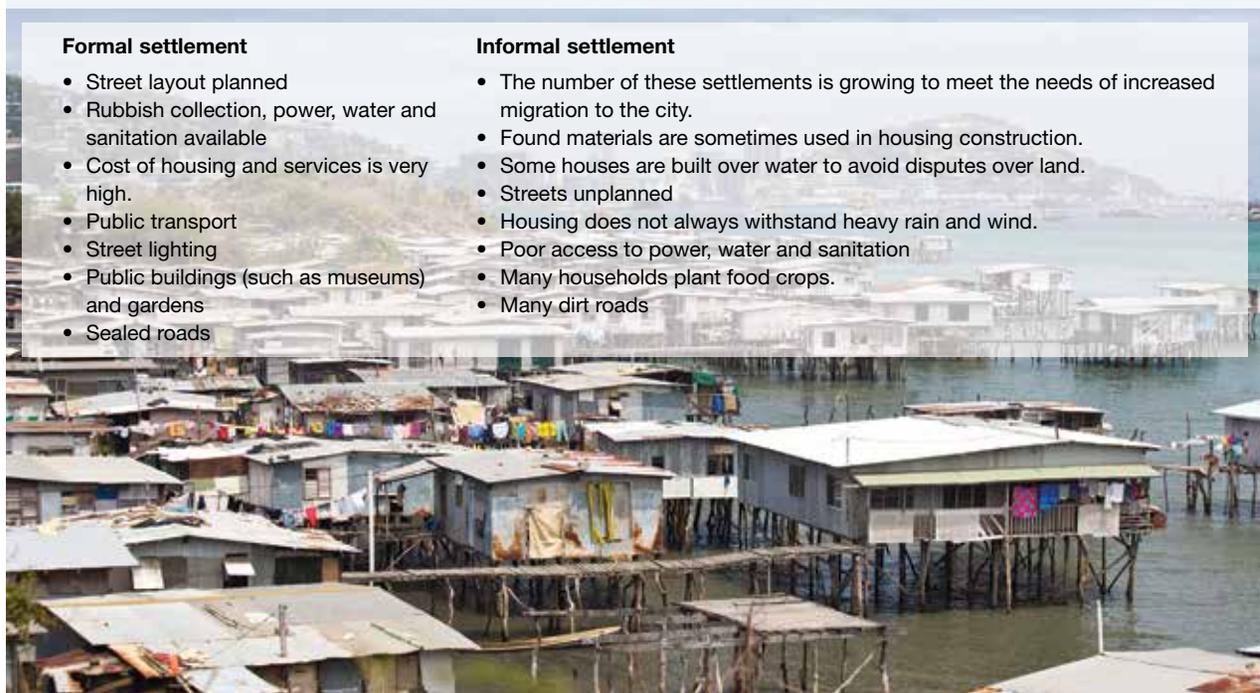


7.3 Review

7.3.1 Applying the concepts

Port Moresby is the capital of Papua New Guinea and is located on the country's south-eastern coast. With a population of approximately 350 000, the city has a mix of high-rise urbanised landscapes and village landscapes. There are both poor and rich people who live in the city. The formal settlement in this image consists of the buildings and roads in the background, which have been planned. The informal settlement consists of houses on stilts, which have been built over the water, in many cases without permits, on state land. Up to half of Port Moresby's population now lives in these squatter settlements due to a lack of affordable housing.

FIGURE 11 Port Moresby is a mixture of high-rise urbanised landscapes and village landscapes.



7.3.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Refer to figure 11.

1. Where is Port Moresby located? (*space*)
2. What is your perception (feelings) about this *place*?
3. How do you think the people living in the informal settlements might feel about their *place*? How might this compare to those living in the formal settlement?
4. Describe the human and natural characteristics of this environment. (*space*)
5. How has this *environment* been *changed* by people? Is there any evidence of the original natural environment?
6. List the resources that this *environment* provides for people.
7. How has the informal settlement met the needs of the population? (*space*)
8. How does climate affect the informal settlement? (*space*)
9. Describe the *interconnections* between:
 - (a) water and buildings in the informal settlement
 - (b) the formal and informal settlements.
10. How would people in the informal *environment* obtain their water?
11. Should people be allowed to live in the informal settlement? Is this a *sustainable* use of the local resources?
12. How does the *scale* of the buildings differ in the two settlements? How does this reflect the services each location has access to?
13. Describe five differences between the two settlements. (*scale*)
14. What is your preferred future for this place? What *changes* need to occur for your preferred future to come about?

TOPIC 8

Water as a resource

8.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

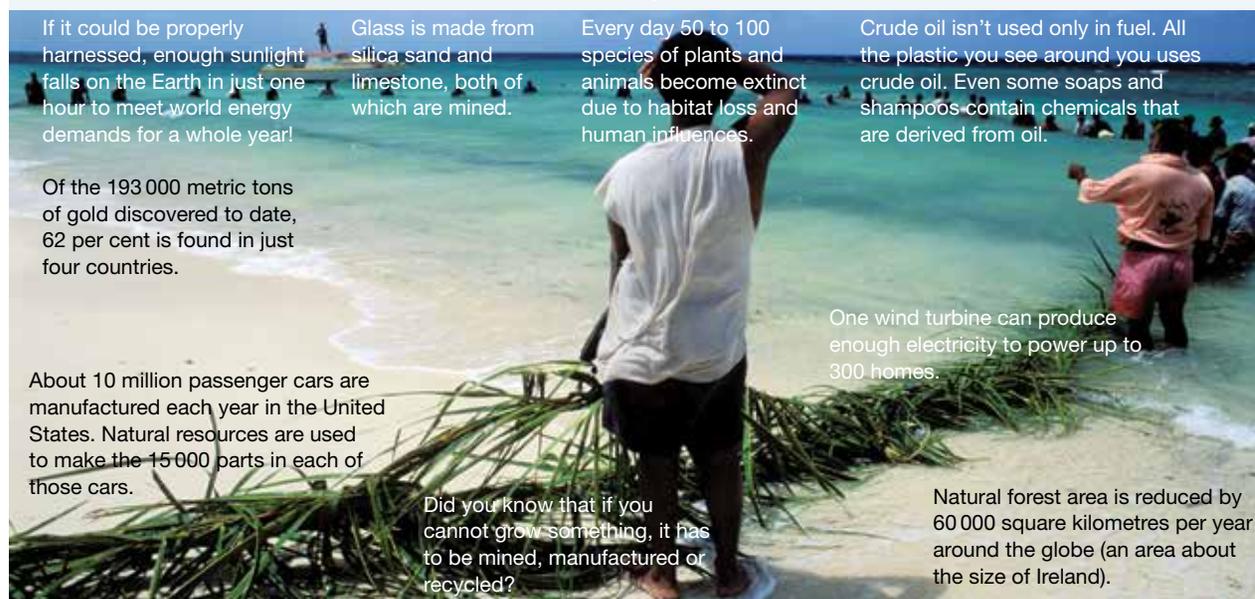
8.1.1 Introduction

Have you ever stopped to think about the resources you need to survive every day? Fortunately, the Earth supplies us with the natural resources we need for our food, shelter, clothing, and energy for our homes and factories. These resources include water, fossil fuels and mineral deposits. However, access to these supplies is not distributed equally around the planet, and attitudes towards them may differ or change over time. As the global population increases, great damage is being done to the environment as a result of using these resources. Moreover, we need to carefully manage our use of them to ensure that these resources are available for use in the future.

Starter questions

1. List some natural resources that are used by your family on a daily basis.
2. List some of the different ways water is used in our lives.
3. Look around your classroom and list items made from natural resources. In some cases, you may need to explain the links between the objects and the resources used to make them.
4. How can the natural resources that you use harm the **environment**?
5. Discuss how your family tries to reduce waste and protect resources.

Pacific Islanders use traditional methods to fish sustainably.



If it could be properly harnessed, enough sunlight falls on the Earth in just one hour to meet world energy demands for a whole year!

Glass is made from silica sand and limestone, both of which are mined.

Every day 50 to 100 species of plants and animals become extinct due to habitat loss and human influences.

Crude oil isn't used only in fuel. All the plastic you see around you uses crude oil. Even some soaps and shampoos contain chemicals that are derived from oil.

Of the 193 000 metric tons of gold discovered to date, 62 per cent is found in just four countries.

One wind turbine can produce enough electricity to power up to 300 homes.

About 10 million passenger cars are manufactured each year in the United States. Natural resources are used to make the 15 000 parts in each of those cars.

Did you know that if you cannot grow something, it has to be mined, manufactured or recycled?

Natural forest area is reduced by 60 000 square kilometres per year around the globe (an area about the size of Ireland).

INQUIRY SEQUENCE

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learn on RESOURCES – ONLINE ONLY

 Watch this eLesson: Water: a vital resource (eles-1615)

8.2 What is a resource?

8.2.1 Why do we need resources?

We depend on natural resources to survive. We need water to drink, soil to produce our food, and forests and mines to supply other materials. Natural resources are raw materials that occur in the environment and which are necessary or useful to people. They include soil, water, mineral deposits, **fossil fuels**, plants and animals.

Think about all the resources you have used today from the time you woke up until the time you reached the school gate. Perhaps you used water to shower, brush your teeth, wash the dishes or as a refreshing drink? Consider all the different foods that had to be farmed to provide the ingredients for your breakfast. Finally, how did you get to school? If you used a form of transport, there is a good chance a resource powered it!

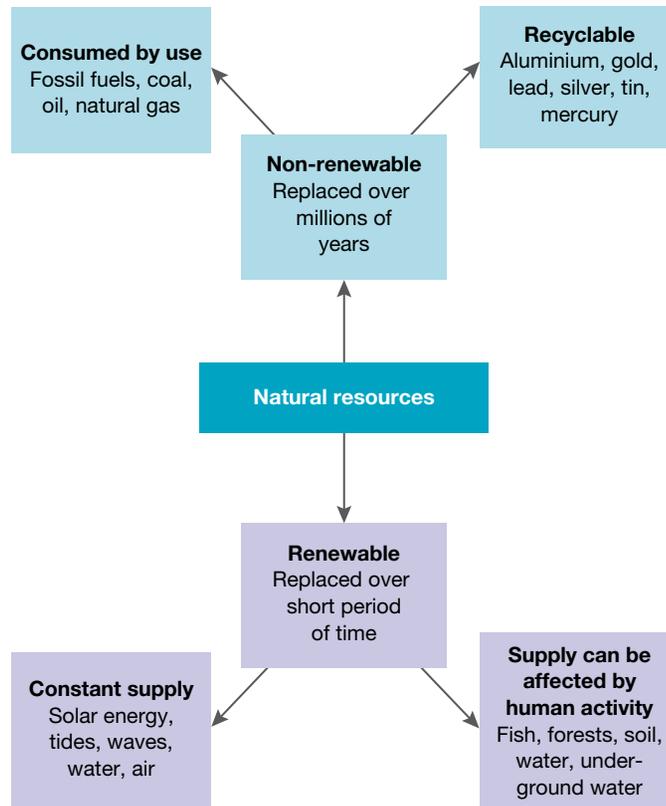
There are two types of natural resources: non-renewable and renewable.

Renewable resources are those that can be replaced in a short time. For example, solar energy is a renewable resource that can be used for heating water or generating electricity. It is never used up and is constantly being replaced by the sun.

FIGURE 1 Many resources are required to provide a family with breakfast.



FIGURE 2 Natural resources — renewable and non-renewable



Non-renewable resources are those that cannot be replaced in a short time. For example, fossil fuels such as oil, coal and natural gas are non-renewable because they take thousands of years to be replaced.

We cannot make more non-renewable resources; they are limited and will eventually run out. However, renewable natural resources are things that can grow and be replaced over time if they are carefully managed. Forests, soils and fresh water are renewable.

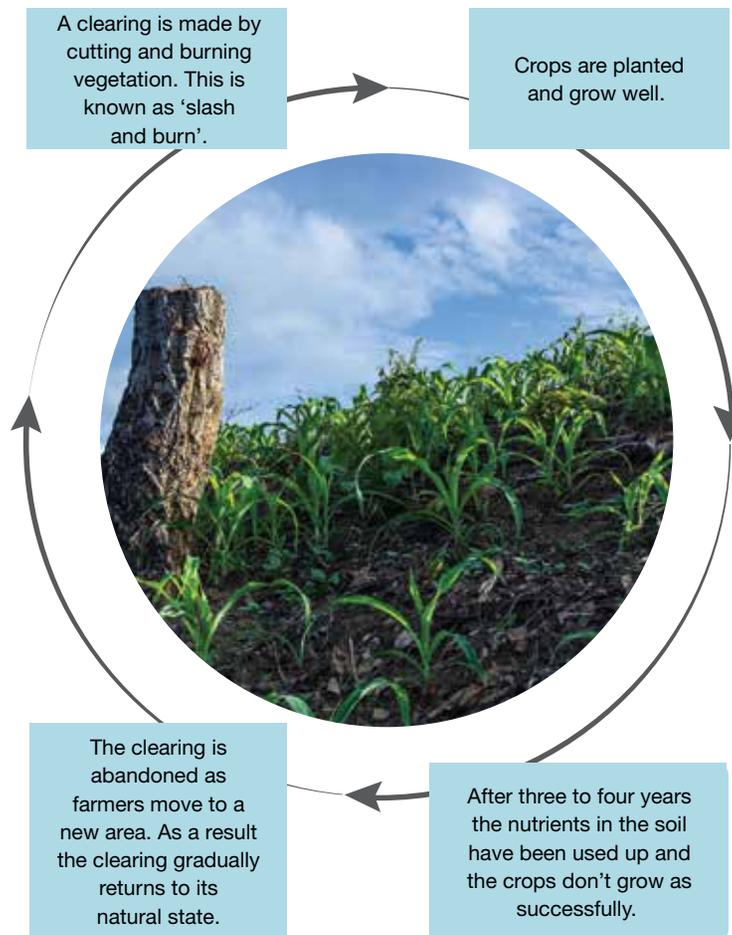
8.2.2 Global supply

The global distribution of natural resources depends on geology (the materials and rocks that make up the Earth) and climate. Some minerals are rare and are found in only a few locations. For example, **uranium** is found mainly in Australia. Several countries in the Middle East, such as Saudi Arabia and Iran, have rich oil resources but are short of water. Many countries in Africa, such as Botswana, have mineral resources but lack the money to mine and process them.

The human activities of agriculture, fishing, logging and mining all depend directly on natural resources. In developing countries, traditional forms of agriculture such as **subsistence farming** and nomadic herding are still common. These activities are sustainable if farmers move on when an area becomes unproductive, allowing the land to recover. However, poverty and population growth mean that many people now clear forests for farms and overgraze or overcrop small plots of land, resulting in deforestation and land degradation.

Farms in developed countries are usually much larger. For example, the Anna Creek cattle station in South Australia is 24 000 square kilometres, the size of Belgium. In contrast, an average intensive rice farm in Bali is only about one hectare. This is about four times the size of an Australian quarter-acre block of land. Unsustainable agricultural practices in developed countries include the overuse of water, fertilisers and pesticides. For example, fertilisers help crops to grow, but when they end up in rivers and oceans as run-off, they cause algal blooms and damage coral reefs.

FIGURE 3 The process of shifting cultivation means that farmers move on when an area becomes unproductive, allowing the land to recover.



8.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is a natural resource?
2. Outline the difference between renewable and non-renewable resources.
3. List three examples of non-renewable resources that can be recycled.

Explain

4. Which renewable resources are most affected by human activity? Why?
5. When it comes to using natural resources, there are two main problems people face. What are they and why are they important?
6. What does the **sustainable** use of natural resources mean?
7. Why is shifting cultivation a **sustainable** form of agriculture?

Discover

8. Refer to figure 3. Use the internet to research who uses shifting cultivation around the world. Choose one case study and report back to the class about their way of life. Examples of these may include tribes from **places** such as the Amazon, Congo Basin or Papua New Guinea. Compare your chosen tribe's way of life

with your way of life, and explain how it differs when it comes to using resources and accessing food. Upon completion of the presentations, discuss as a class why you think Australian farmers do not use shifting cultivation as their method of agricultural production.

Think

9. What did you have for breakfast today? What resources would have been required to provide it?
10. What are examples of fossil fuels that you use in order to maintain your lifestyle?
11. Create a table that lists 10 renewable and 10 non-renewable resources used by your family. Be specific; for example, list timber used in your furniture. From your list, note some of the waste and pollution that may be created in the use or creation of these resources. How could this be reduced to improve environmental **sustainability**? As a class develop a five-point plan how you could all be more proactive in being more environmentally **sustainable** every day.

8.3 What are Australia's natural resources?

8.3.1 A wide range of resources

Australia has more natural resources per head of population than any other country in the world. The main reason for this is that we have a small population in a very large country.

8.3.2 Minerals

Australia is rich in mineral resources. The Pilbara region in Western Australia, for example, has some of the largest reserves of iron ore in the world. Australia also produces many other minerals, including silver, copper, nickel and tin.

Australia is the world's:

- largest exporter of iron ore, bauxite, lead, diamonds, zinc ores and mineral sands
- second-largest exporter of alumina (processed from bauxite and then turned into aluminium)
- third-largest exporter of gold.

8.3.3 Soils

Australia has generally poor soils, especially when compared with those found in other continents such as North America and Europe. Most Australian soils are low in nutrients, and in some parts of the continent, particularly the more arid areas, high salt content is also a problem. Most parts of Australia are suitable only for sheep and cattle grazing, rather than **intensive agriculture**, owing to low rainfall and poor soils.

There are regions of good soil scattered throughout Australia. These include soils formed from volcanic rock, such as those on the Darling Downs in Queensland and around Orange in New South Wales, and **alluvial soils** (found in river valleys).

8.3.4 Case study: the Pilbara

CASE STUDY

The Pilbara

Most of Australia's iron ore reserves are found in the Pilbara region in north-west Western Australia. The Pilbara accounts for 98 per cent of the country's iron ore production and 96 per cent of its exports. Iron ore is the raw material from which iron is made. Although iron in its cast form has many uses, its main use is in steelmaking. Steel is the main structural metal in engineering, building, ship building, cars and machinery.

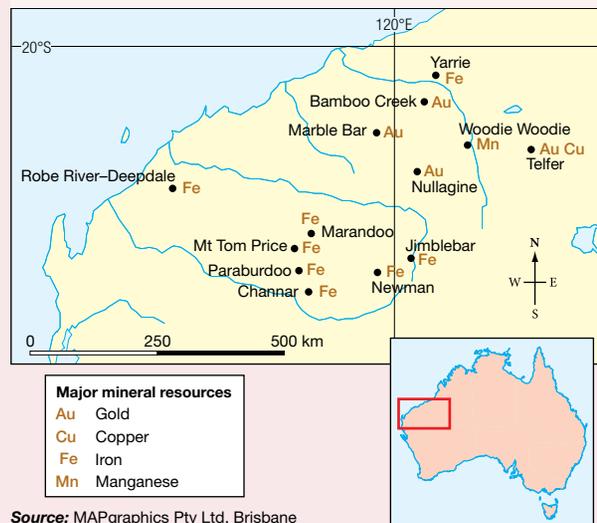
Two of the largest companies operating in the Pilbara are BHP Billiton and Rio Tinto. There are many mines in the Pilbara, including those at Mount Tom Price, Marandoo, Channar, Newman and Robe River.

The iron ore in the Pilbara is relatively easy to mine. It is also high quality, so there is strong demand for it from many countries, including Japan, China and South Korea.

FIGURE 1 The Mount Tom Price iron ore mine in the Pilbara



FIGURE 2 Mineral deposits in the Pilbara region



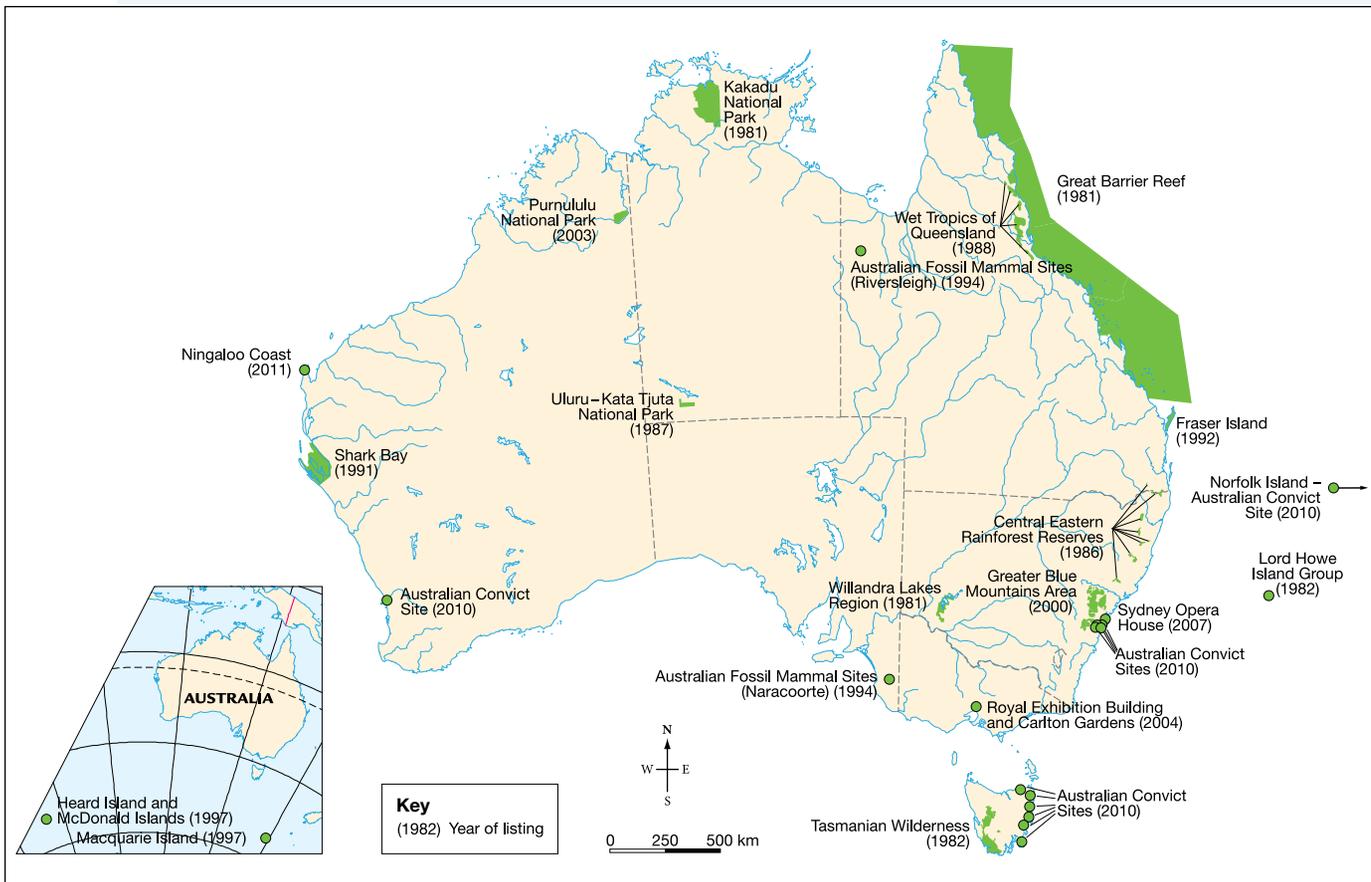
8.3.5 Natural scenery

Australia's spectacular scenery attracts tourists from all over the world, particularly to those sites that are on the World Heritage List. This means that they are recognised as being of global importance due to their great natural or cultural significance.

8.3.6 Forests

Apart from Antarctica, which has no trees, Australia is the world's least forested continent. The most common vegetation in Australia is woodland and shrubland. Before European occupation, about nine per cent of Australia was forested. Today, about five per cent of the country is forested. Even though Australia exports timber products, it also imports a lot of timber, particularly softwoods such as pine.

FIGURE 3 Australia's World Heritage sites



Source: Department of Environment and Water Resources

8.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

- List the main mineral resources produced in Australia.
- Refer to the case study of the Pilbara.
 - Where does Australia's main iron ore production take place?
 - What is the main use of iron ore?
 - Why is there strong demand overseas for Australian iron ore?
 - List three **places** in the Pilbara where there are deposits of iron ore.
- Refer to figure 3. Which state of Australia has the most World Heritage sites?

Explain

- Why are many Australian soils suitable only for grazing?
- Why does Australia's scenery attract many overseas visitors?

Discover

- Refer to figure 2. If you are at the Mount Tom Price mine, in which direction and how far are the following **places**?
 - Yarrie
 - Robe River-Deepdale
 - Telfer
 - Channar?
 What is mined at each location?
- Using the internet, research the criteria required for an area to become classified as a World Heritage area.

8. In groups of two or three, research one of the World Heritage sites found in Australia. Each group should investigate a different area. Present your group's research back to the class and accompany your presentation with a PowerPoint or other graphic presentation so your peers can see the features that make the *place* so special.

Think

9. What effects does mining have on the natural *environment*? Refer to figure 1. Create a flow diagram that illustrates how these effects relate to each other and how they can have far-reaching consequences beyond the immediate *environment*.



Deepen your understanding of this topic with related case studies and questions.
 • World Heritage sites



8.4 How do we use non-renewable energy?

8.4.1 Australia's energy use

Australia has large reserves of non-renewable energy, such as coal, natural gas, oil and uranium. Over the past 30 years, Australia's energy consumption has increased by over 200 per cent. Most of the energy we use comes from non-renewable sources, particularly coal, which is used for steel manufacturing and 73 per cent of electricity generation.

Each year, over half of Australia's energy products are exported. Australia is the world's fourth largest producer of coal. In the last five years, coal has made up approximately 15 per cent of Australia's exports. Demand for coal from Asia has increased over the last 10 years. Japan is our largest market, claiming 45 per cent of Australian coal. The next biggest importer of Australian coal is China which takes 23 per cent of the market. There is the possibility that demand for Australian coal from south-east Asia will triple in the next 25 years.

FIGURE 1 The biggest buyers in the Australian coal market, 2014

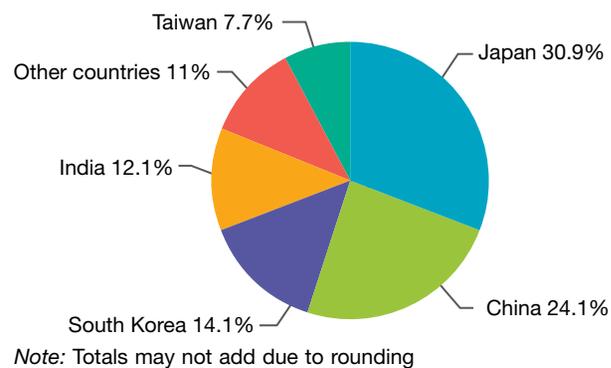


FIGURE 2 Millions of tonnes of coal are moved around Australia annually.



8.4.2 Global use

The world relies heavily on energy for transport, heating and manufacturing. The amount of energy used varies widely around the world. The world's most commonly used energy sources are oil, coal and gas (all fossil fuels), hydro-electricity and nuclear power.

Internationally, there is more trade in oil than any other product. Oil is

unevenly distributed, with most reserves located in the Middle East. As a result, other nations need to buy their oil from this region.

Oil is a fossil fuel and a non-renewable resource. It is believed that oil reserves will eventually run out, probably within 40 to 80 years. Between half and two-thirds of oil production is used in transport. It is also used to produce energy and to **manufacture** products such as plastic, nail polish, lipstick, synthetic textiles and whitegoods.

Every day, 92 million barrels of oil are used around the world; the United States uses 19 million barrels per day while the second highest consumer of oil, China, uses 11 million barrels per day. Australia consumes almost 1 million (or 998 thousand) barrels per day.

Oil is exported to countries that can afford to pay for it. For example, even though the United States has only five per cent of the world's population, it consumes around 20 per cent of global supplies. Some countries import oil because they use more than they produce.

8.4.3 Fossil fuel winners and losers

Governments, oil companies and individuals make billions of dollars from oil. For example, Saudi Arabia's Crown Prince and the Sultan of Brunei are oil billionaires, and large oil companies are some of the most profitable companies in the world.

Oil generates economic growth and can improve people's living standards in producer countries. However, while oil may bring wealth to governments and corporations, wealth does not always trickle down to local populations. Venezuela is one of the world's top 10 oil producers, yet 32 per cent of its population lives below the poverty line.

FIGURE 3 Extraction of coal carries a high environmental cost.



FIGURE 4 Australian non-renewable energy consumption by fuel

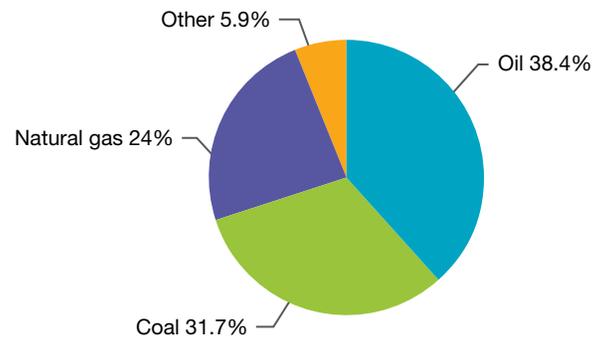


FIGURE 5 World energy production

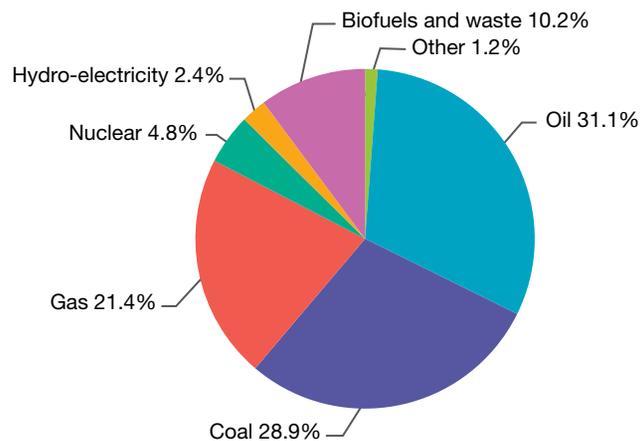
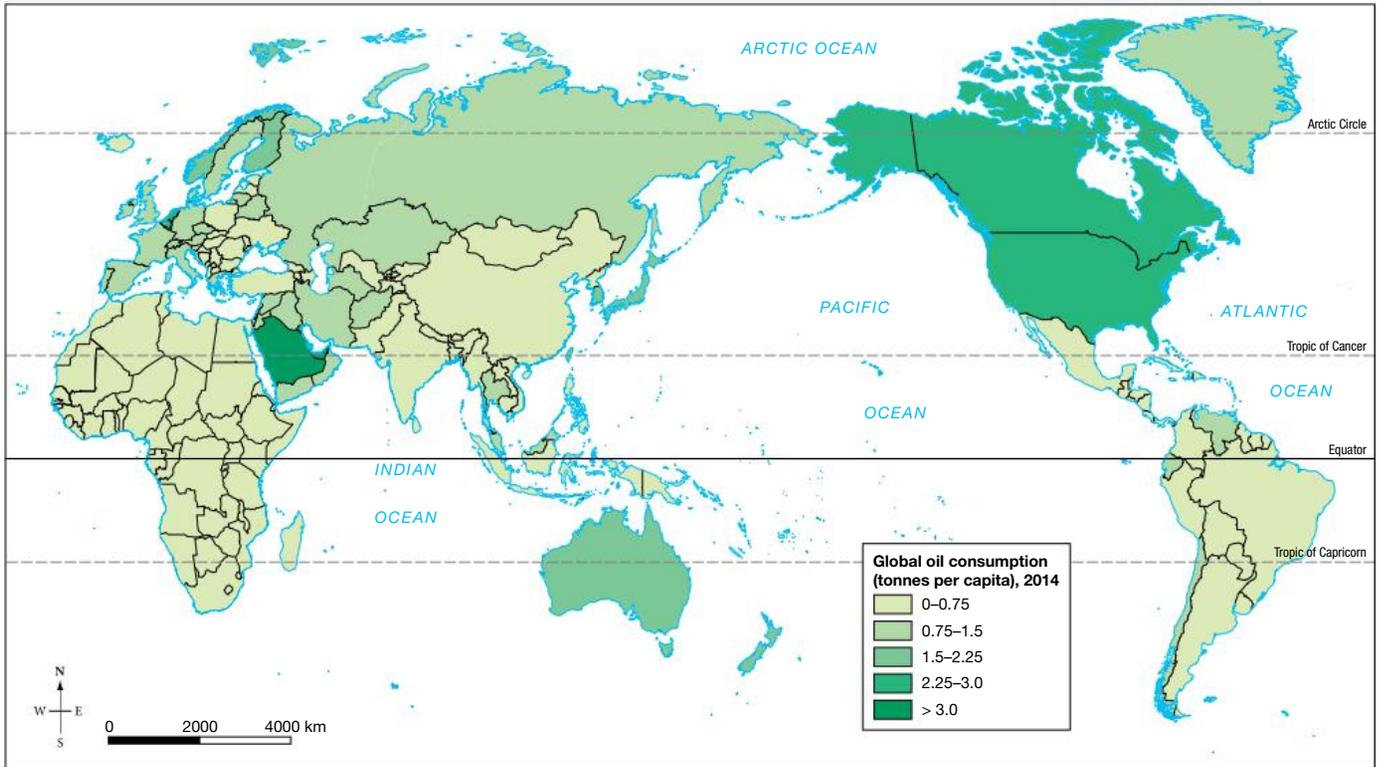


FIGURE 6 Global oil consumption



Source: Spatial Vision

8.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Refer to figure 1.
 - (a) In which geographic region are these nations located?
 - (b) How many more per cent of coal does China import than Taiwan?
2. Other than energy, what other products are manufactured from oil?
3. How many more barrels of oil does the United States use than Australia per day?

Explain

4. Why doesn't the money made from the sale of fossil fuels, such as oil, always benefit the local people in the country that sells the product?

Discover

5. The **extraction** of fossil fuels can have negative impacts on the **environment**. Using the internet, research the 2010 BP oil disaster off the coast of Mexico. Create a poster that illustrates the causes of the event and its effects, and explains the clean-up methods used to try to contain the damage. Ensure your presentation is visually appealing by using a variety of maps, photos and graphs.

Predict

6. What will happen to Australian coal reserves if demand from other countries continues to grow? What could be some of the impacts of this? Does this raise any ethical dilemmas?



Deepen your understanding of this topic with related case studies and questions.

World energy

8.5 Should Australia focus on using renewable energy?

8.5.1 Australia's renewable energy

Australia has many potential renewable energy sources: hydro-electric, wind, solar, tidal, geothermal and **biomass** energy. Although the use of these is increasing, renewables provide us with only about six per cent of our energy needs. In 2015, the Australian Government reviewed its Renewable Energy Target and set the goal that by 2020 at least 33 000 gigawatt-hours, or 23.5 per cent of Australia's electricity, would come from renewable sources. This would be enough electricity to power approximately five million homes for a year. Other benefits may include billions of dollars of investment, the creation over 15 000 jobs and, in the long term, it could even save every Australian household \$140 off their electricity bill annually.

Australia is a large country with a number of different environments that are suited to supplying renewable energy. There has been an increase in public and government concern over global warming and greenhouse gas emissions, so more research into and development of renewable energy resources may help to minimise these concerns.

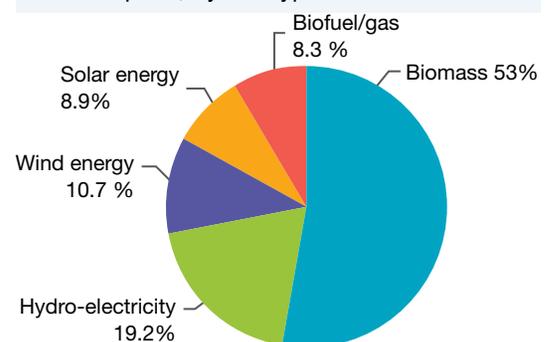
8.5.2 Different types of energy

Some types of renewable energy that could be sustainable in Australia include the following.

- *Geothermal energy.* Australia has huge underground energy resources known as 'hot rocks'. Water can be heated by pumping it underground through these hot rocks. The resulting steam then drives a **turbine** to generate electricity.
- *Wind power.* A typical wind turbine can meet the energy needs of up to 1000 homes.
- *Tidal power.* Waves can drive turbines to produce electricity. Tidal power is especially suitable for powering **desalination** plants, though Australia does not use this system.
- *Biomass energy.* This is produced from the combustion of organic matter, such as sugar cane and corn crops. Biomass can be used to produce electricity as well as liquid fuels like ethanol and biodiesel.
- *Solar power.* Solar energy technologies harness the sun's heat and light to provide heating, lighting and electricity. Two types of solar technologies are currently under development in Australia.
 - Photovoltaic cells convert solar energy directly into electricity. These can be placed on roofs in order to collect direct sunlight.
 - Solar thermal systems use the sun's heat to generate electricity by first heating a fluid such as water to create steam, which drives a turbine to generate electricity. Australia has abundant solar radiation, and therefore great potential for the development of solar energy. Germany is currently the highest consumer of solar electricity in the world.
- *Hydro-electric power.* Most of Australia's hydro-electric power is generated in Tasmania and by the Snowy Mountains Hydro-Electric Scheme in New South Wales. Around six per cent of Australia's electricity comes from hydro-electric power, but there are limited opportunities for increasing this because of the lack of water resources, and because building dams can be controversial.

The use of sustainable energy is still in its early stages but is growing rapidly in China, the United States and Europe. Fossil fuels are currently cheaper and more convenient to produce than renewable energy sources. The reason for this is that we do not pay the real cost of their use — we do not pay for the

FIGURE 1 Australia's renewable energy consumption, by fuel type



Note: Totals may not add due to rounding.

huge cost of releasing waste products into the **atmosphere**. In future, a carbon tax or restrictions on the use of fossil fuels will increase their cost, perhaps making renewable energy a more attractive option for consumers.

FIGURE 2 Some sources of renewable energy: (a) solar (b) biomass (c) wind (d) hydro-electric (e) geothermal (f) tidal



8.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. In which renewable energy resources is Australia (a) rich and (b) poor?
2. Define the term 'renewable energy'. List the main forms of renewable energy.
3. What are the two types of solar technology?

Explain

4. Why is renewable energy not widely used in many countries?

Discover

5. Refer to the pie graph in figure 1.

- What type of renewable resource provides the greatest source of energy in Australia?
- Australia is a sunny country, so why does only 8.9 per cent of our country's renewable energy come from the sun?

Predict

6. List some of the likely positive and negative consequences if Australia stopped using non-renewable energy resources altogether and replaced them with renewable energy sources.



Deepen your understanding of this topic with related case studies and questions.

Energy in Australia

8.6 SkillBuilder: Constructing a pie graph

online only

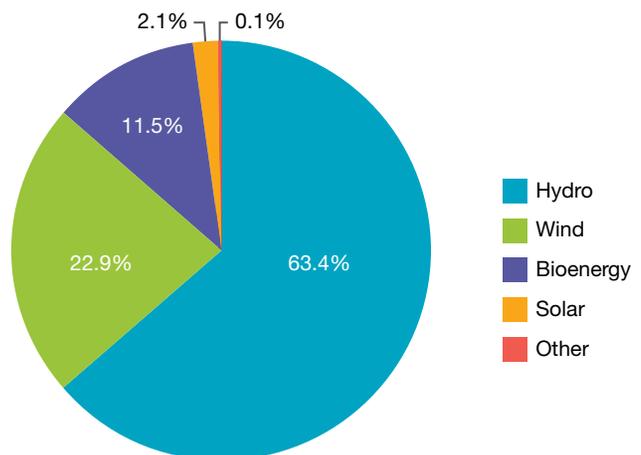
WHAT IS A PIE GRAPH?

A pie chart, or pie graph, is a graph in which slices or segments represent the size of different parts that make up the whole. The size of the segments is easily seen and can be compared. Pie graphs give us an overall impression of data.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 Percentage of electricity generated from renewables in Australia by energy source (2010)



Note: 5.2% of total energy consumption in Australia is from renewable sources.

Source: Clean Energy Council, Clean Energy Australia 2010, p. 6.

learn on RESOURCES – ONLINE ONLY



Watch this eLesson: Constructing a pie graph (eles-1632)



Try out this interactivity: Construct a pie graph (int-3128)

8.7 Is water a renewable resource?

8.7.1 Water as a resource

The amount of water on Earth has not changed since the beginning of time; there is only a finite, or fixed, amount. The water used by ancient and extinct animals and plants millions of years ago is the same water that today falls as rain. The amount of water cannot be increased or decreased. It is cycled and recycled, and constantly changes its state from gas, to liquid, to solid, and back.

Water is a resource. Like any other resource, it has no value in itself, but has great value when a use is found for it. Environments where water is found are also a resource. A river can be the site of a settlement that provides transport as well as food. A **riverine environment** that includes fish, birds, wildlife, wetlands, plants and micro-organisms is also valuable as a living system and can therefore be regarded as a resource.

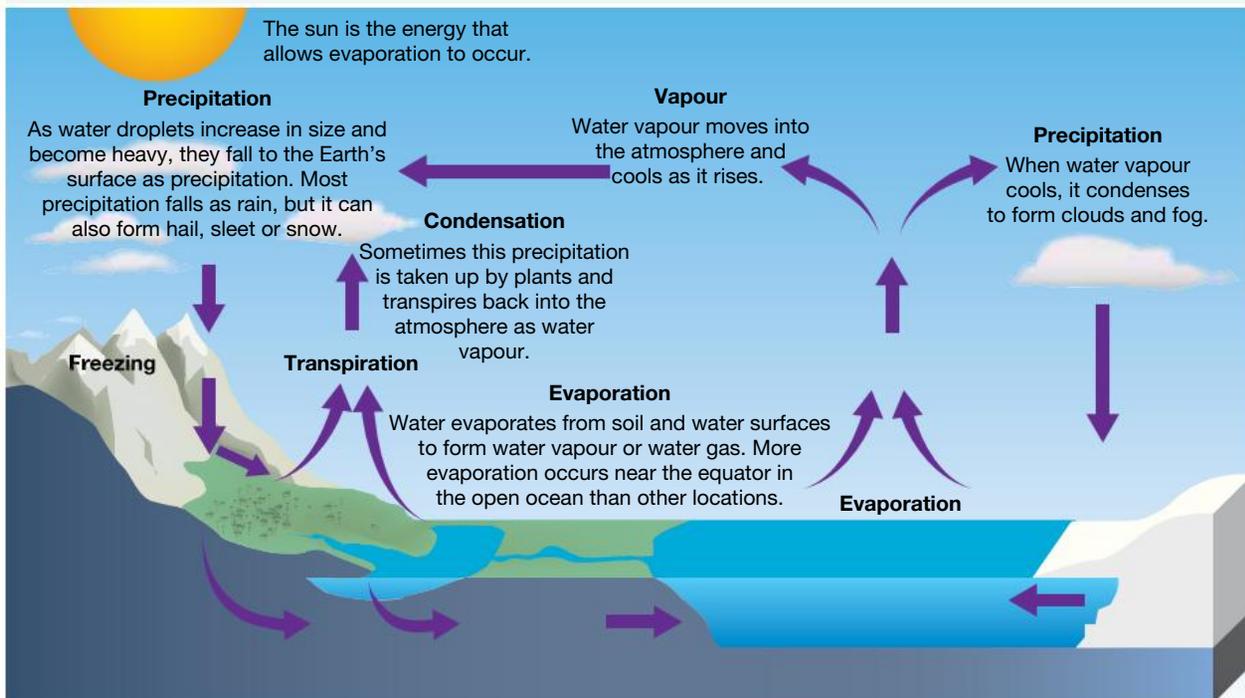
8.7.2 The water cycle

All the water on Earth moves through a cycle that is powered by the sun. This cycle is called the water cycle, or **hydrologic cycle**. Water is constantly changing its location (through constant movement) and its form (from gas, to liquid, to solid). Evaporation, condensation and freezing of water occur during the cycle.

8.7.3 How long does water stay in the one place?

Water can stay in the one place very briefly or it can stay for many thousands of years. It has been calculated that water stays in the atmosphere for an average of nine days before it falls again to Earth as precipitation. Water stays in soil for between one and two months. If you live in an area that has experienced drought or a very long summer without rain, you may have noticed that the soil dries out and forms cracks. Once the seasons change and it begins to rain, the soil absorbs water again and the cracks disappear.

FIGURE 1 The water cycle



Water spends between two and six months in snow and rivers but a lot longer in large lakes, glaciers, oceans and **groundwater**. The longest time water stays in one place is in the Antarctic ice sheets. Some ice core samples in Antarctica contain water that is 800 000 years old, but the average is about 20 000 years.

The length of time water spends as groundwater can be an average of 10 000 years if it is very deep, but it can stay much longer.

FIGURE 2 A scientist working with ice core samples in Antarctica. Some of the longest records of our climate have come from large ice sheets over three kilometres thick in Greenland and Antarctica. They produce records going back several hundred thousand years.



8.7 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Is water a renewable or a non-renewable resource?
2. List all the ways that water can be used as a resource.
3. Name two **places** where water stays in the same **place** for the longest.

Explain

4. Using the information about the water cycle, write and present 'The incredible journey of water'. Focus on various **interconnections** between water and the **environment**. Include diagrams and photographs, and present your story electronically, as a poster, a written piece, a drama piece or a song.
5. How does the water cycle prove that we are using the same water that the dinosaurs used — in other words, that it is finite (limited)?

Discover

6. Use the internet to find all the information that is discovered by reading ice core samples. Choose two of the most interesting facts and share them with your class on a blog or wiki.

Predict

7. With a global population that is increasing by about 75 million people each year, how will it be possible for the finite water on Earth to be shared fairly?

learnon RESOURCES — ONLINE ONLY

 Try out this interactivity: Water works (int-3077)

8.8 SkillBuilder: Annotating a photograph

online only

USING ANNOTATED PHOTOGRAPHS IN GEOGRAPHY

Photographs are used to show aspects of a place.

Annotations are added to photographs to draw the reader's attention to what can be seen and deduced.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 Campaspe River near Axedale



Source: Taken by Mattinbgn, 17 March 2012. © Creative Commons

learn on RESOURCES — ONLINE ONLY

 Watch this eLesson: Annotating a photograph (eles-1633)

 Try out this interactivity: Annotating a photograph (int-3129)

8.9 How is groundwater used as a resource?

8.9.1 What is groundwater?

An important part of the water cycle, groundwater is the water that is found under the Earth's surface. Many settlements — especially those in arid and semi-arid areas — rely on groundwater for their water supply.

When rain falls to the ground, some flows over the surface into waterways and some seeps into the ground. Any seeping water moves down through soil and rocks that are permeable; that is, they have pores that allow water to pass through them. Imagine pouring water into a jar of sand or pebbles; the water would settle into the spaces between the sand or stones.

Groundwater is water held within water-bearing rocks, or **aquifers**, in the ground. These work like sponges. They hold water in the tiny holes between the rock particles.

8.9.2 Artesian water

An **artesian aquifer** occurs between impermeable rocks, and this creates great pressure. When a well is bored into an artesian aquifer, water often gushes out onto the surface. This flow will not stop unless the water pressure is reduced or the bore is capped (sealed).

Groundwater and surface water are interconnected — they depend on each other. Groundwater is only replenished when surface water seeps into aquifers. This is called groundwater recharge, and it is affected by whether there is a lot of rain or a drought is occurring.

FIGURE 1 An artesian aquifer

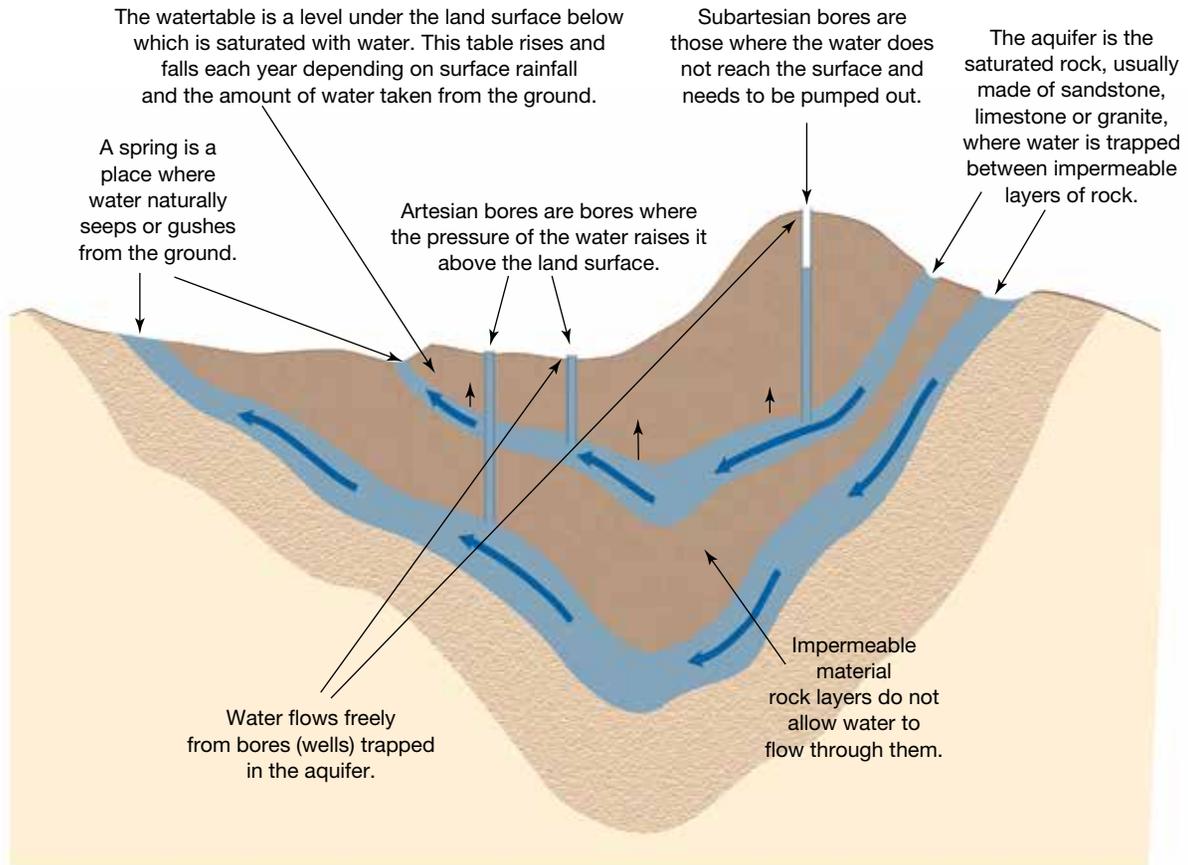


FIGURE 2 The water in this mound spring in South Australia has taken over two million years to move to the surface from recharge areas in northern Queensland. It can take up to 1000 years to move about one metre.

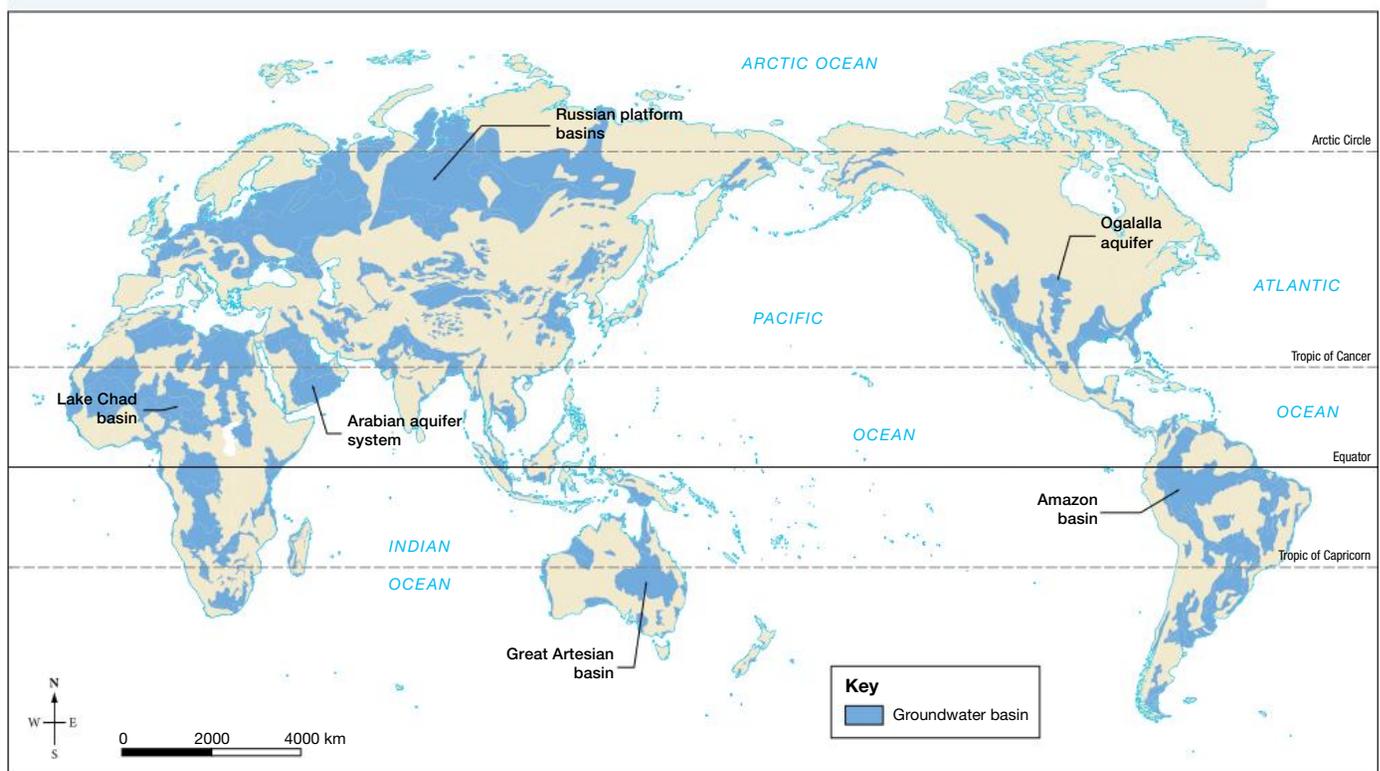


8.9.3 Global groundwater resources

Approximately two per cent of the Earth’s water occurs as groundwater, compared with 0.1 per cent as rivers and lakes and 94 per cent as oceans.

About 1.5 billion people in the world rely on groundwater for their survival. Some groundwater is fresh and can be used for drinking. Other groundwater can be brackish or even saltier than the sea.

FIGURE 3 The world’s major groundwater basins



Source: BGR & UNESCO 2008: Groundwater Resources of the World 1 : 25 000 000. Hannover, Paris.

Groundwater is vital for drinking, irrigation and industry use. Some industries bottle and sell spring and mineral water, and make soft drinks and beer. Bore water is used to water suburban gardens and parks, golf courses and crops. Groundwater is also important to the natural environment in wetlands and in supporting unique plants and animals. Groundwater keeps many of our rivers flowing, even when there are long periods without rain.

Troubled waters

For many years now, more and more water has been taken out of the ground. People believed it was unlimited, but it is in danger of running out in some areas, owing to the large number of wells pumping water.

If people use more groundwater than is being recharged, aquifers may dry up. Groundwater is very slow-moving and can take many years to move into deep aquifers. For this reason, groundwater is a finite and non-renewable resource, and is often referred to as *fossil water*.

8.9 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What does the word permeable mean?
2. What is groundwater recharge?

Explain

3. What is the difference between an aquifer and an artesian aquifer? Use a diagram to help you.
4. Draw a diagram to show how surface water reaches the watertable to become groundwater.
5. Describe conditions that might result in a watertable rising or falling.
6. Outline how groundwater and surface water are **interconnected**.
7. Describe the groundwater resources in North Africa and West Asia (the Middle East). (Use the **Regions** resource in the Resources tab.)

Discover

8. Refer to figure 3 to describe the location of the world's groundwater regions.

Predict

9. Imagine that the world's groundwater continues to be used faster than it can be replaced. Use the **Bubbl.us** weblink in the Resources tab to brainstorm all the possible consequences this will have on people and the **environment**.

Think

10. Water is a renewable resource. Why is groundwater sometimes thought of as fossil water and as a non-renewable resource? Write your answer as a newspaper article titled 'Out of sight, out of mind'.
11. Discuss in small groups the fairness of taking too much water from old aquifers. Should this type of water use be restricted? Who should make this decision?

learn on RESOURCES — ONLINE ONLY



Explore more with this weblink: Bubbl.us



Complete this digital doc: [Regions \(doc-17950\)](#)



Deepen your understanding of this topic with related case studies and questions.
Salisbury Council — Aquifer storage, transfer and recovery



8.10 How do Aboriginal peoples use groundwater?

8.10.1 Groundwater sources

Indigenous Australian peoples have lived in the Australian landscape since the beginning of the Dreaming, thousands of years by European estimates, and they have had the knowledge to survive many changes and challenges. In order to obtain water in the country's dry regions, particularly in Australia's deserts, they have needed to know where to find groundwater.

There are many groundwater sources throughout Australia that have long been used by Indigenous Australian nations. One of these sources is **soaks**: groundwater that comes to the surface, often near rivers and dry creek beds, and which can be identified by certain types of vegetation. Another source is **mound springs**: mounds of built-up minerals and sediments brought up by water discharging from an aquifer.

Mound springs of the Oodnadatta Track

The Oodnadatta Track is located in the north-east of South Australia. The track follows the edge of the Great Artesian Basin and the south-western edge of Kati Thanda–Lake Eyre and, along its route, groundwater makes its way to the surface in several locations.

The Oodnadatta Track crosses the traditional lands of three Aboriginal nations. In the south, between Lake Torrens and Kati Thanda–Lake Eyre, are the Kuyani people; most of the west of Kati Thanda–Lake Eyre is the land of the Arabana people; and to the north is the land of the Arrernte people.

Many springs have cultural significance today for local Aboriginal peoples, whose ancestors relied on the springs as water sources and as sacred sites for important ceremonies. Knowledge of the springs in this region has been passed down over many generations through **Dreaming Stories**.

This knowledge was also passed on to explorers and colonisers. John McDouall Stuart followed this track to complete the first crossing of Australia's interior from south to north in 1862; the overland telegraph was constructed along its pathway; and the Great Northern Railway, which made the land of the Northern Territory accessible for European occupation, followed the same route.

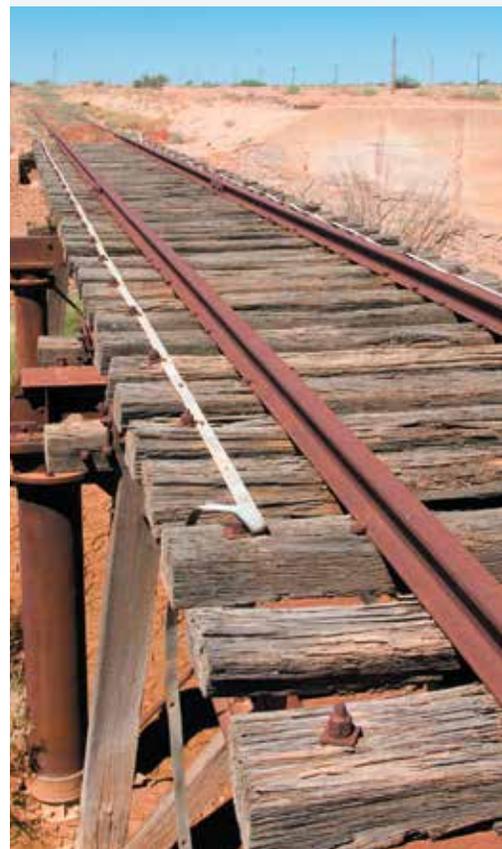
Mound springs were very important for Indigenous Australian peoples. They could rely upon springs as reliable sources of water in a very harsh, dry environment.

FIGURE 1 Location of the Oodnadatta Track and Great Artesian Basin, one of the world's largest groundwater basins



Source: Spatial Vision / Geoscience Australia

FIGURE 2 The Oodnadatta Track passes close to the Old Ghan, the Great Northern Railway.



Old campsites and animal remains provide evidence that they remained there for varying time periods. However, because the plant and animal life around these regions is quite sparse, people had to move regularly and travel away from the springs when rainfall allowed that to occur.

Because the springs were strung out over hundreds of kilometres, they were also part of an important network of trading and communication routes across Australia. As Aboriginal peoples moved around the region, they traded goods and communicated with other Aboriginal nations. This interconnection allowed them to trade resources such as ochre, stone and wooden tools, bailer shells and pituri. Pituri is a spindly shrub used by Indigenous Australian peoples during ceremonies and to spike waterholes to catch animals for food.

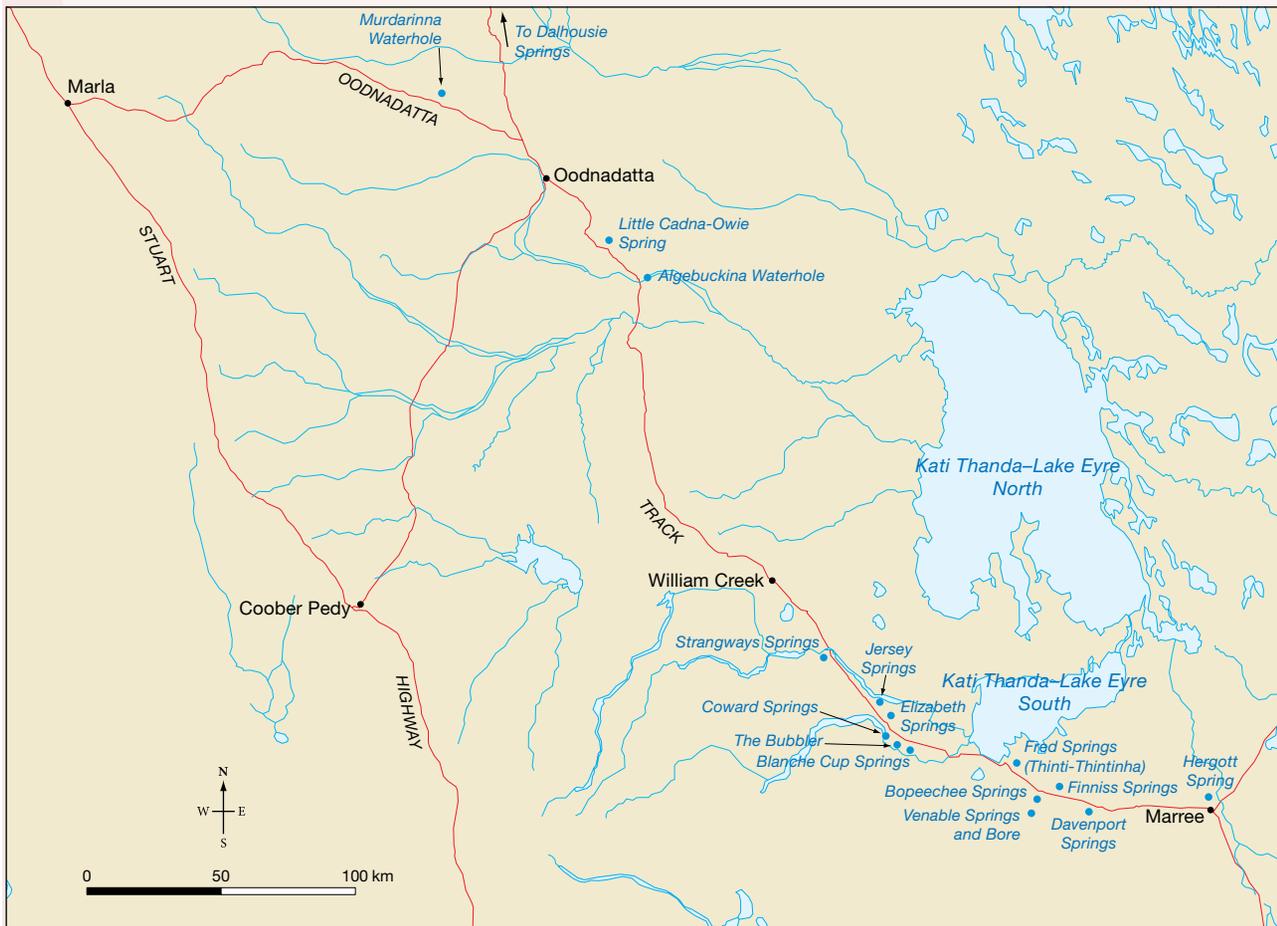
8.10.2 Case study: Locating water

CASE STUDY

Stories help map the location of water

Indigenous Australian knowledge of the land and how to survive in it has been passed from generation to generation through Dreaming Stories. During the dry seasons and periods of drought, Aboriginal peoples congregated at the mound springs. These springs were linked by Aboriginal songs and Dreaming Stories, and are often connected to rain-making rituals.

FIGURE 3 Groundwater springs along the Oodnadatta Track



Source: Redrawn with permission from the SA Arid Lands Natural Resources Management Board / © Copyright Commonwealth of Australia Geoscience Australia 2006

Dreaming Stories

1 Thutirla Pula (Two Boys Dreaming)

This is one of the most important stories of the Wangkangurru and other people of Central Australia. Thutirla Pula is how the spirits of the Dreaming first crossed the desert they call Munga-Thirri (land of sandhills). The story tells of two boys crossing the Simpson Desert, through Queensland and back to just north of Witjira (Dalhousie) in the Finke River area. The songline contains information on every waterhole or soak that was known in the Simpson Desert. Following this songline meant you could cross the Simpson Desert using available groundwater along the way, taking 600 kilometres off the usual journey south of the Simpson Desert to Kati Thanda–Lake Eyre, then back north along the Diamantina River.

2 Bidalinha (or the Bubbler)

The Kuyani ancestor Kakakutanha followed the trail of the rainbow serpent Kanmari to Bidalinha (or the Bubbler) where he killed it. He then threw away the snake's head, which is represented by Hamilton Hill, and cooked the body in a dirga, or oven, which is now Blanche Cup. Kakakutanha's wife, angry at missing out on the best meat from the snake, cursed her husband, and he went on to meet a gruesome death at Kudna-ngampa (Curdimurka). The bubbling water represents the movements of the dying serpent.

3 Thinti-Thintinha Spring (Fred Springs)

The willy wagtail (or thunti-thuntinha) danced his circular dance to create this spring and the surrounding soils, which are easily airborne in windy conditions. The moral to the story is that while it is easy to catch the skilful little willy wagtail, you must never do so because of the terrible dust storms that may follow.

4 Kewson Hill: the Camp of the Mankarra-kari — the Seven Sisters

The Seven Sisters came down here to dig for bush onions (yalkapakanha). As they peeled the onions, they tossed the skins to one side, creating the dark-coloured extinct mound spring on the south-west side of the track. The peeled bulbs created the light-coloured hill (yalka-parlumarna) to the north-east, also an extinct mound spring.

5 Dalhousie Springs

Dalhousie Springs is a popular oasis in the arid desert region of the northernmost part of South Australia.

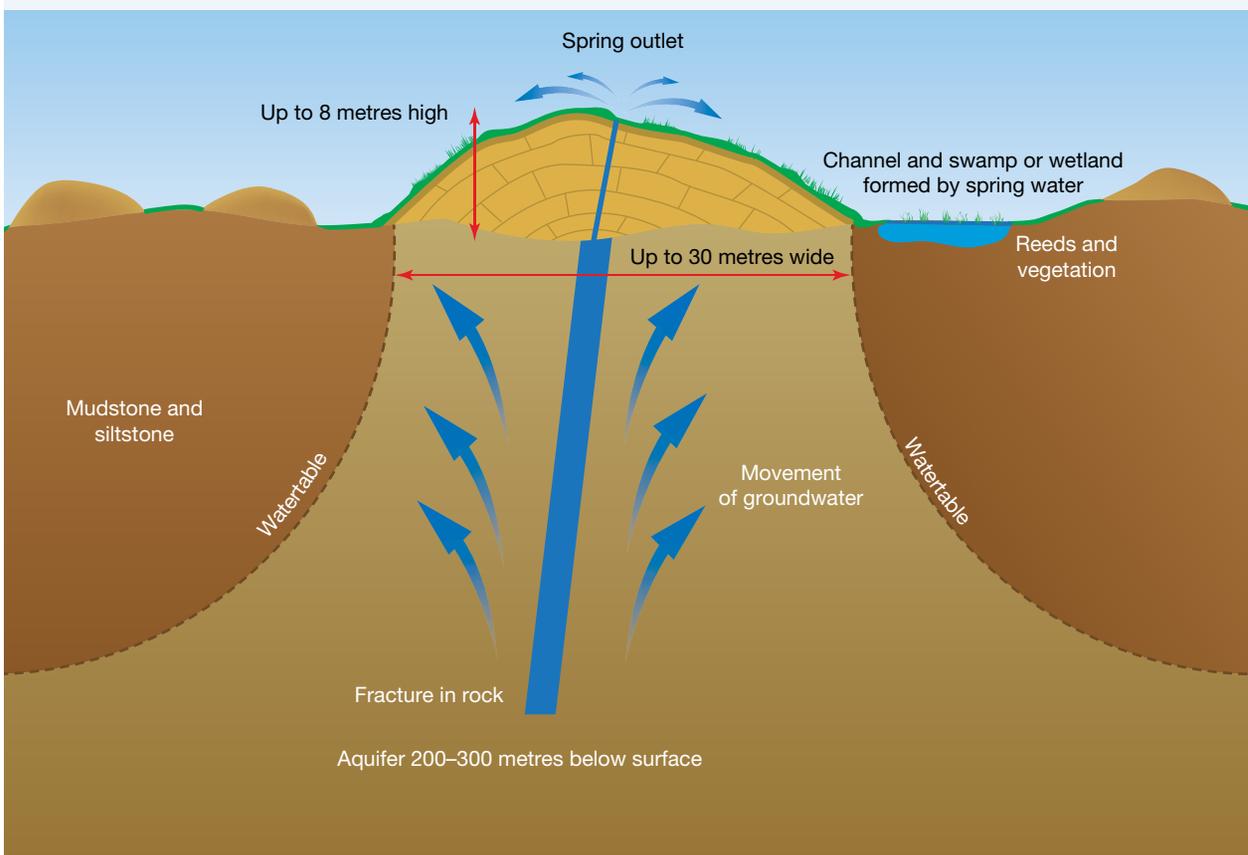
FIGURE 4 The Old Bubbler on the Oodnadatta Track



FIGURE 5 Fed by the thermal waters of the Great Artesian Basin, the water in Dalhousie Springs is between 34 and 38 °C.



FIGURE 6 Cross-section of a typical mound spring



8.10 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Why were Dreaming Stories important to Aboriginal peoples in the Oodnadatta region?

Explain

2. Why is groundwater so important to the communities in this region today? Describe the **interconnections** between groundwater and people.
3. How do Dreaming Stories help map the groundwater in this region?

Discover

4. Use Google Earth and enter the search terms Oodnadatta or William Creek to locate the Oodnadatta Track. Describe the landscape you see. Why is finding groundwater so important in this **environment**?
5. Use an atlas or Google Earth to locate Dalhousie Springs, Birdsville, Kati Thanda–Lake Eyre and the Diamantina River. See if you can follow the Two Boys Dreaming Story and show how following the story saved a lot of time travelling across the desert.
6. How do Dreaming Stories help identify the cultural value placed on these water **environments**?

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 Try out this interactivity: Thutirla Pula (int-3079)

8.11 Review



8.11.1 Review

The Review section contains a range of different questions and activities to help you revise and recall what you have learned, especially prior to a topic test.

8.11.2 Reflect

The Reflect section provides you with an opportunity to apply and extend your learning.
Access this subtopic at www.jacplus.com.au

8.6 SkillBuilder: Constructing a pie graph

8.6.1 Tell me

What is a pie graph?

A pie graph, or pie chart, is a graph in which slices or segments represent the size of different parts that make up the whole. The circle of 360 degrees represents the total, or 100 per cent of whatever is being looked at. The size of the segments is easily seen. By presenting the parts in order, from largest to smallest, it is easier to interpret.

A pie graph can be drawn by hand or by using a spreadsheet program.

Why are pie graphs useful?

Pie graphs give us an overall impression of data. They are useful for comparing proportions of categories. If there are more than eight segments, the graph becomes difficult to read and it is better to use a bar graph. Unlike line graphs, pie graphs are not useful for showing a trend over time.

Model

A good pie graph:

- has a clear and accurate title that explains the purpose of the graph
- has segments that are either labelled directly or indicated by means of a colour key
- includes percentages or raw figures
- has segments drawn clockwise from largest to smallest, starting at 12 o'clock with the largest and finishing at 12 o'clock with the smallest, unless there is 'other', which is always last
- includes the source of the data.

8.6.2 Show me

How to complete a pie graph

You will need:

- paper
- a pencil
- a protractor
- a ruler
- coloured pencils
- a data set—in this case, energy generated from renewables in New Zealand (table 1).

Procedure:

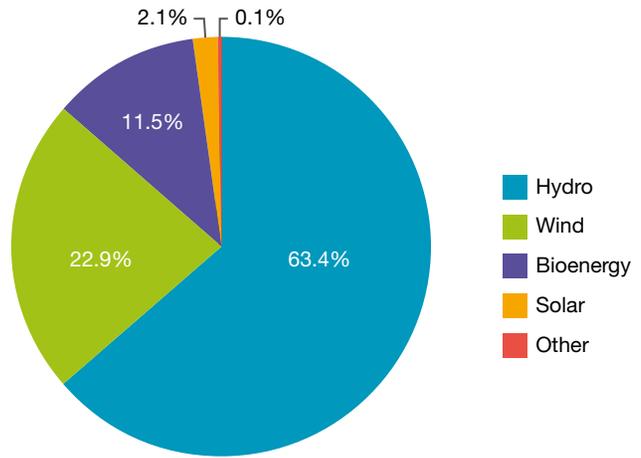
STEP 1

Order the statistics from largest to smallest. If there is an 'other' category, put it last.

STEP 2

If there are raw figures, convert them to percentages. You divide each category by the total figure and multiply by 100.

FIGURE 1 Percentage of electricity generated from renewables in Australia by energy source (2010)



Note: 5.2% of total energy consumption in Australia is from renewable sources.

Source: Clean Energy Council, Clean Energy Australia 2010, page 6

TABLE 1 Percentage of electricity generated from renewables in New Zealand by energy source (2010)

Renewable energy	Percentage (%)
Hydro	28
Bioenergy and solar	20
Wind	2
Geothermal	50

Note: In 2011, 77% of all electricity generated in New Zealand came from renewable resources.

Source: New Zealand Energy Data File 2012

STEP 3

Convert the percentage to degrees of a circle by multiplying by 3.6. (100 per cent of the circle = 360 degrees, so 1 per cent of the circle = 3.6 degrees.)

STEP 4

Draw a straight line from the centre of the circle to 12 o'clock.

STEP 5

Use the protractor to mark the first and largest segment, working clockwise. To do this, place the 0 degrees line on the protractor along the line you have just drawn. Now mark in the second largest group. Use the protractor to mark each of the other segments in descending size, marking the 'other' category last.

STEP 6

Label and colour each segment, making sure you include the percentage.

STEP 7

Provide a clear title and source.

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 Watch this eLesson: Constructing a pie graph (eles-1632)

8.6.3 Let me do it

Developing my skills

Use the data in table 2 to create a pie graph.

Questions

1. What is the most common source to produce electricity?
2. Are renewables or non-renewables the main source of electricity?
3. Name a renewable that is part of the 'other' category.
4. In Iceland 70 per cent of all electricity is produced from hydro-power and 30 per cent is produced from geothermal power. Is this similar or different to the world trend?
5. Research the sources of energy production for another country. Compare your results to Australia and Iceland.

Checklist

I have:

- provided a clear title and source
- plotted the data accurately and labelled each segment
- included the percentages
- shown largest to smallest clockwise from 12 o'clock with 'other' last.

Skills questions

1. To calculate segments for a pie graph, you do which of the following?
 - (a) Multiply each percentage by 3.6
 - (b) Multiply each percentage by 100
 - (c) Divide each percentage by 3.6
 - (d) Add the percentages together and then divide by 360

TABLE 2 Source of electricity worldwide, 2010

Source of electricity	Percentage (%)
Coal	42
Oil	5
Natural gas	21
Nuclear	13
Hydro	16
Other	3

Source: Based on data from OECD 2011, *Factbook 2011–2012: Economic, Environmental and Social Statistics*, OECD Publishing, <http://dx.doi.org/10.1787/factbook-2011-49-en>

2. Which statement about pie graphs is false?
 - (a) Stating the source of data enables the reader to think about how reliable the data is.
 - (b) Segments are drawn in order from largest to smallest, except 'other', which is always last.
 - (c) A pie graph is useful for showing a trend over time.
 - (d) A clear title is essential so that the reader can understand the data presented.
3. Explain why drawing a pie graph with 18 segments is not recommended.
4. Why are pie graphs useful?

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 **Try out this interactivity:** Constructing a pie graph (int-3128)

8.8 SkillBuilder: Annotating a photograph

8.8.1 Tell me

Using annotated photographs in geography

Photographs are used to show aspects of a place. Photographs don't give us all the information though. Often people will notice different elements in the same photograph depending on their interest and knowledge. **Annotations** are added to photographs to draw the reader's attention to what can be seen and deduced. As you can see in figure 1, we know that there was water in the Campaspe River at the time the photograph was taken. We don't know what the water quality was like. Photographs today are digital and can easily be resized and cropped.

FIGURE 1 Campaspe River near Axedale



Source: Taken by Mattinbgn, 17 March 2012. © Creative Commons

Why use annotated photographs?

Annotated photographs are useful in geographical inquiries as geographers are interested in analysing places and photographs provide a snapshot at a point in time. The annotations are vital to fully understanding the photograph. It's also important to understand that the angle a photograph is taken from, and the time it is taken, can affect how easy it is to see some aspects in the photograph. You should consider the angle the photograph was taken from, and what might be outside the border of the photograph. When photographs are used to show spatial change over time, the same views are photographed at different times, and the annotations are used to highlight the changes.

Model

A good annotated photograph includes:

- a clear title that includes the location of the photograph
- labels of the main features
- annotated processes if known
- date and time of when the photograph was taken
- the source of information — the photographer's name.

8.8.2 Show me

How to annotate a photograph

You will need:

- a photograph (figure 2)
- a black fine-line felt-tipped pen
- a ruler.

Procedure:

STEP 1

Examine the photograph carefully, looking for key information it is showing you. You will notice that in this particular image above, there is evidence that it was taken during a low flow period because the water line is below the line of trees that mark a higher water level. Previous high flow or perhaps flood events of the river is shown by the large logs deposited in the currently dry bed of the river.

STEP 2

Check the date the photograph was taken. This photograph is tagged 5 February 2012. The author is Paul Humphries and the location is Campaspe River at Strathallen; therefore, a clear title might be *Campaspe River at Strathallen during summer low flow period*. Provide the source underneath as this enables the reader to understand its author and the time of year. In this case it is ‘Source: Taken by Paul Humphries, 5 February 2012.’

STEP 3

Add labels to the image, focusing on the key aspects you wish the viewer to notice. These might include *River in low flow*, *Debris deposited in high flow*, *Gum trees*. It is often much easier to add labels if you took the photograph and made field notes while you were there. For example, you could have determined if the river was flowing and in which direction. Labels should be placed outside the photograph with fine lines to the feature.

FIGURE 2 Annotating a photograph



Source: Taken by Paul Humphries, 5 February 2012. © Paul Humphries

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 Watch this eLesson: Annotating a photograph (eles-1633)

8.8.3 Let me do it

Developing my skills

Annotate the figure 3 photograph. Label any physical processes that you can see. For example, the river is flowing towards the foreground of this photograph. Label the human activities that are shown.

Questions

1. Name two activities that you can see.
2. What are the tall poles for?
3. Where are boats stored? How do you know?
4. What is the landing platform made of?
5. Give evidence to support the idea that rivers such as this are an important resource for people.

FIGURE 3 Yarra River, Melbourne, Australia



Source: Taken by Russell Moseley at 5 pm, 10 September 2012. © Russell Moseley <http://www.free-things-to-do-melbourne.com>

Checklist

I have:

- a clear title that includes the location of the photograph
- labelled the main features
- included annotated processes, if known
- included the date and time of when the photograph was taken
- provided the source of the information.

Skills questions

1. Annotated photographs are used to:
 - (a) compare quantities
 - (b) calculate the height above sea level
 - (c) show a place at a point in time
 - (d) test water quality.
2. An annotated photograph would be best to show information about:
 - (a) the number of whales in different areas
 - (b) how population has changed in the last 100 years
 - (c) human activities at a place at one point in time
 - (d) wind speed.
3. Why is it better to place the labels outside the photograph rather than on the photograph?
4. Why is it important to carefully choose the angle with which you will take the photograph?

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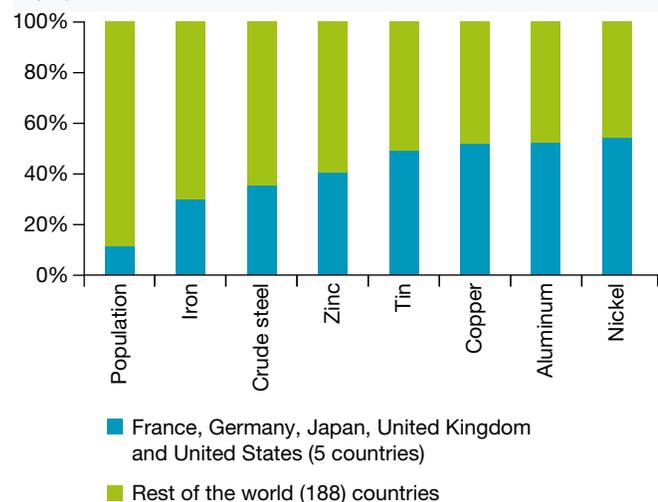
 Try out this interactivity: Annotating a photograph (int-3129)

8.11 Review

8.11.1 Review

1. What is a natural resource?
2. What is the difference between a renewable and a non-renewable resource?
3. Using images, recreate figure 2 from subtopic 8.2 What is a resource?
4. What is the result of unequal access to resources?
5. Define in your own words the following terms: *fossil fuels* and *ecological sustainability*.
6. What natural resources does Australia have in abundance?
7. What is the difference between Australia's consumption of oil and of black coal?
8. Discuss the disadvantages of using non-renewable energy sources.
9. List and define four types of renewable energy.
10. Why is the trade of natural resources important for countries such as Australia?
11. The graph in figure 1 shows the population and resource use of five developed countries. Which of the following statements describes the information shown by the graph?
 - (a) The five countries make up more than a quarter of the world's population and they use more than a quarter of all the resources shown on the graph.
 - (b) The five countries make up 10 per cent of the world's population and they use about 30 per cent or more of the resources shown on the graph.
 - (c) The five countries make up 10 per cent of the world's population and they use about 10 per cent of all the resources shown on the graph.
 - (d) The five countries make up only 10 per cent of the world's population, so the amount of resources they use is relatively small.
12. Explain how water can be both a renewable and a finite resource.
13. List all the ways that groundwater is important to people. Give examples where possible.

FIGURE 1 Consumption of natural resources for selected developed countries compared with global population



Source: United Nations Environment Program (UNEP)

8.11.2 Reflect

Ecological sustainability and Easter Island

Rapa Nui, named Easter Island by the Dutch, is a World Heritage site because of its cultural importance. The site was established to protect the distinctive stone monuments known as moai, which stand around the coastline of the island. More than a thousand moai were carved from rock quarries at Rano Raraku by the ancestors of the present inhabitants. Many statues remain unfinished.

Easter Island is in the Pacific Ocean, about 3600 kilometres from the coast of Chile. It is one of the most isolated inhabited islands in the world and covers an area of just 160 square kilometres. When first settled, the island was a forested land covered with palms and small trees.

Easter Island shows what can happen when natural resources are used unsustainably. The society that existed on Rapa Nui from AD 400 gradually used all the island's natural resources. By about 1600, the island was completely deforested. Trees had been cut down to provide fuel, housing materials, canoes and space for agriculture, and to move the moai from the quarry. Peruvian slave raids in the 1860s in which large numbers of the Rapa Nui people were violently abducted, and the introduction of European diseases into the area as a result, meant that by the 1870s, only 111 Easter Islanders remained.

FIGURE 2 Some of the statues, known as moai, on Rapa Nui



Today the island has around 4000 inhabitants. Tourism is an important source of income for the island, with people coming from all over the world to see the moai. The island also has volcanic craters and beautiful beaches.

14. Why is Easter Island a World Heritage site?
15. What was the island's environment like when it was first settled?
16. Explain how the settlement of the island shows unsustainable use of its natural resources.
17. What were the impacts on the people living there?
18. Why is it that the island is once again able to support a healthy population of inhabitants?

TOPIC 9

Our blue planet: water

9.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

9.1.1 Introduction

Viewed from space, the Earth is a sphere of blue. Water covers most of our planet. We depend on water for life; in fact, no life is possible without it. Water is a precious and finite resource, yet most of the Earth's water is too salty for humans, animals or plants to use. The amount of available fresh water on Earth needs to be shared among an ever-growing global population. Access to water is a basic human right. It is a resource that must be used carefully so that current and future populations can have adequate supplies.

Starter questions

1. List the main ways that you use water.
2. List two natural **environments** that have a lot of water. Name where they are or show their location on a map.
3. List two natural environments that have very little water. Name where they are or show their location on a map.
4. Why do you think water is thought of as a precious resource? Justify your answer.
5. List all the ways that water is used by people, animals, plants and the environment.
6. How much of the Earth is covered by water? How much of this water can be used by people?

This picture shows what all of Earth's water would look like if it was contained in a sphere, in comparison with the size of the Earth. The blue sphere representing all of Earth's water has a diameter of 1385 kilometres.



INQUIRY SEQUENCE

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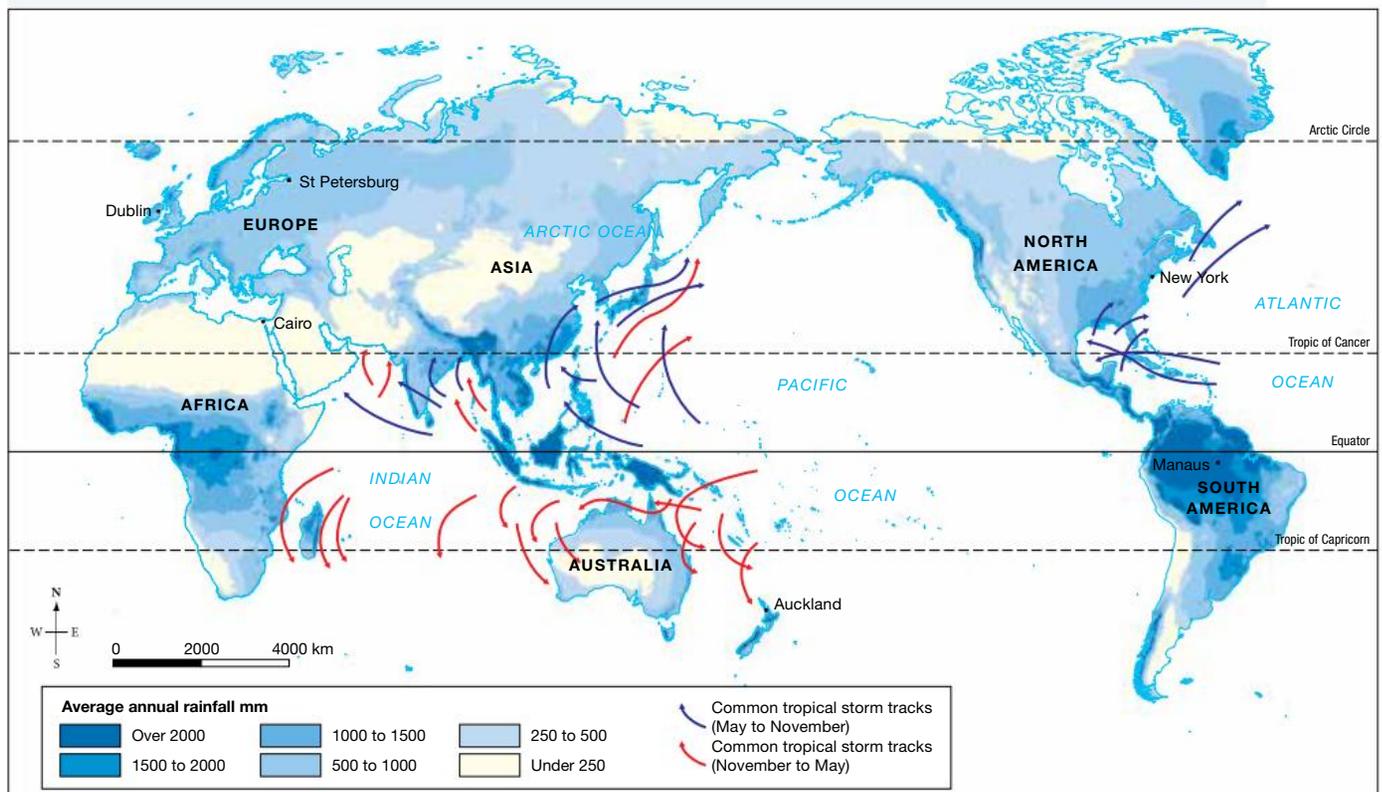
 Watch this eLesson: A world of water (eles-1616)

9.2 How much water is there in the world?

9.2.1 The world's water

Water is vital to our survival and essential to most human activities. Although Earth seems blue in space, not much of the water we see is available for use. And of the useable fresh water that can be seen, access to it is unequal across the globe.

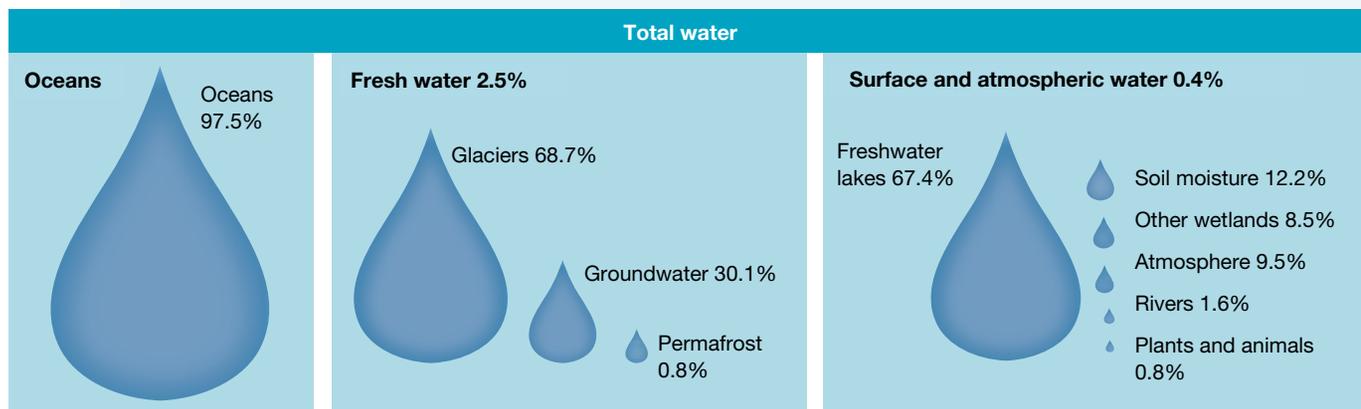
FIGURE 1 The distribution of global rainfall



Source: WorldClim

Water covers about 75 per cent of the Earth's surface. Yet, as figure 2 shows, almost all this water (97.5 per cent) is salt water and not available for human consumption. Only 2.5 per cent of the world's water is fresh, but most of this is also unavailable for use by people. More than two-thirds (69.5 per cent) of this fresh water is locked up in glaciers, snow, ice and permafrost. Of the remaining amount, 30.1 per cent is found in groundwater. Only 0.4 per cent is left — found in rivers, lakes, wetlands and soil as well as in the bodies of animals and plants.

FIGURE 2 The distribution of water on Earth



Global rainfall

The Earth's water is constantly moving. Rainfall patterns show which world regions receive more rain than others. The amount of rainfall, or **precipitation**, is related to the amount of water available for use by people.

Green and blue water

The key to our survival is being able to use the water that falls on land and into rivers and streams. Water is sometimes categorised as either **blue water** or **green water**.

Green water is the water that does not run into streams or recharge groundwater but is stored in the soil or stays on top of the soil or vegetation. This water eventually evaporates or transpires through plants. Green water is used by crops, forests, grasslands and savannas.

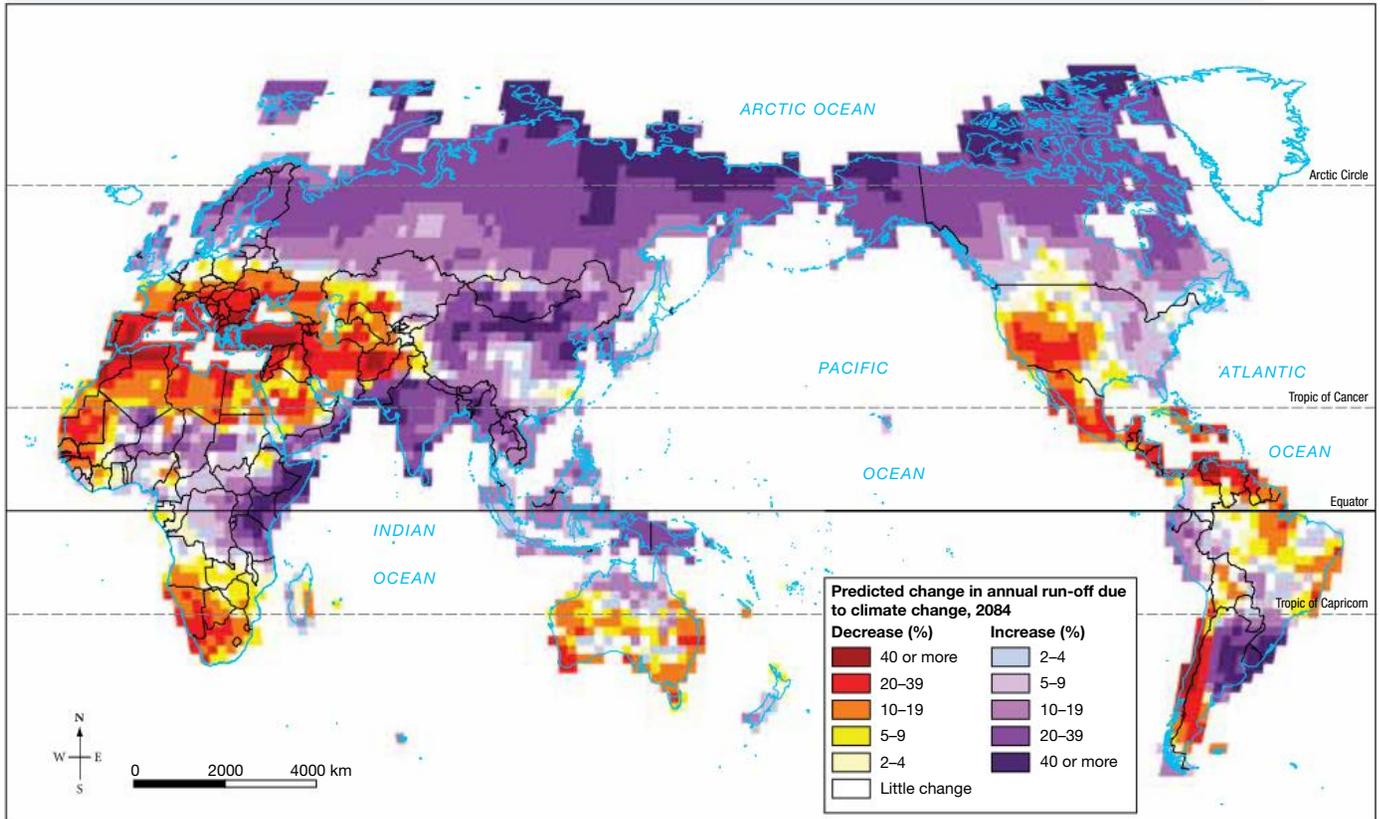
The amount of blue and green water available changes throughout the year, from year to year, and according to changes in the environment.

9.2.2 Climate change and impact on rainfall and run-off

The majority of climate scientists believe that **climate change** will have an impact on rainfall patterns and **run-off**. Climate models have shown that areas in the northern latitudes are likely to experience more rain, and areas closer to the equator and mid-latitudes will receive less rain. Some regions will experience droughts, while others will experience high rainfall and even flooding.

Already, in the last 100 years, global rainfall patterns have changed. In some areas such as North America, South America, northern Europe, and northern and central Asia, rainfall has increased significantly. In other areas such as the Sahel, the Mediterranean, southern Africa, and parts of Asia, rainfall has decreased.

FIGURE 3 Predicted change in annual run-off due to climate change, 2084



Source: Geophysical Fluid Dynamics Laboratory, National Oceanic and Atmospheric Administration

9.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Remember

- What percentage of the world's water is:
 - salty
 - available for use by people?
- How will climate change affect rainfall patterns?

Explain

- Study figures 1 and 3 and use the **Regions** resource in the Resources tab.
 - Describe how much rain falls in North Africa and West Asia (the Middle East). How does this compare with Australia?
 - What is predicted to happen to annual run-off in these regions as a result of climate change? What impact might this have on people and the **environment**?
- Write a statement about the **interconnection** between high rainfall and location at the equator and mid-latitudes. Name two **places** that do not fit this pattern.
- Use the text to outline the difference between blue and green water. List two things that might change the amount of blue and green water available.
- If farmers use irrigation, what type of water would they rely on? What about farmers who do not have access to irrigation?

Predict

- Work in groups of three to list what might happen to people and the **environment** in regions that:
 - will receive more rainfall than they do now
 - will receive less rainfall than they do now.
 Complete a consequence chart for each change.

Think

8. Study figure 3 and an atlas.

(a) Name three **places** that are predicted to receive more run-off due to climate change.

(b) Name three **places** that are predicted to receive less run-off due to climate change.

(c) Compare these six **places** with the global rainfall map, figure 1. Which of the following statements is true?

- Most **places** with very low rainfall have lower run-off.
- All **places** with very high rainfall experience increased run-off.
- The **places** with the greatest **change** in run-off will be northern Russia and northern Canada.

Rewrite any false statements and make them true.

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Complete this digital doc: Regions (doc-17950)



Deepen your understanding of this topic with related case studies and questions.

- Retreating glaciers
- World water resources

9.3 What are some amazing water facts?

9.3.1 Wonderful water

Although only 0.4 per cent of Earth's water is available for use by people, plants and animals, this amounts to over 117 trillion litres — on a scale too big for us to really appreciate. There are some other amazing water facts that show how much water there is, how water connects places and how water is used. Use the **Planet Earth, fresh water** weblink in the Resources tab to find out more about water.

The world's largest swimming pool

The man-made lagoon in Citystars Resort, Sharm el-Sheikh, Egypt, covers an area of 9.68 hectares. It is a full kilometre longer than the previous record holder in San Alfonso del Mar resort, Algarrobo, Chile, which measures 1013 metres in length and holds 250 000 cubic metres of water (see figure 1).

The world's largest freshwater river

The Amazon River in South America is the second longest river in the world and is by far the largest by water flow. It has the largest **drainage basin** in the world and approximately one-fifth of the world's total river flow.

FIGURE 1 Gargantuan pools are on the rise in luxury resorts around the world.



FIGURE 2 The river with the world's greatest water flow is the Amazon River.



The **discharge** from it is about 7000 cubic kilometres every year, or 219 million litres of water every second. In contrast, Australia's largest river in terms of water flow, the Mitchell River, discharges an average of only 12 cubic kilometres each year.

The waterfall with the most water

The flow rate at Niagara Falls' main falls has been measured at around 2.6 million litres per second — enough water to fill an Olympic swimming pool in about one second.

FIGURE 3 Niagara Falls



The place on Earth with the most rainy days

The wettest place in the world (based on the average number of rainy days received each year) is Mount Wai'ale'ale in Hawaii. The summit is 1569 metres above sea level and receives over 350 days of rain each year. Mount Wai'ale'ale records an average of up to 13 000 millimetres of rain per year. In some years, rain has been known to fall for 360 days per year!

FIGURE 4 Mount Wai'ale'ale averages over 350 rainy days each year.



The wettest place in the world

The wettest place in the world (based on the yearly average total) is Mawsynram, India, which receives an average of 11 870 millimetres (nearly 12 metres) of rain each year. It has a subtropical highland climate with a long monsoon season.

How much water is there in the atmosphere?

If it was possible to rain across the whole planet at one time, there is enough water in the atmosphere at any time to produce about 2.5 centimetres (25 millimetres) of rain over the whole surface of the Earth.

FIGURE 5 Women in the potato fields of Mawsynram wear rain protection made of leaves and cane.



FIGURE 6 A lot of water is held in the atmosphere.



The biggest dam

The Three Gorges Dam in China is the world's largest dam and hydro-electricity plant.

FIGURE 7 The Three Gorges Dam produces the most hydro-electricity in the world.



Where is the highest number of desalination plants in the world?

Places with little water often build desalination plants to convert sea water to fresh water. The Persian Gulf has the highest number of desalination plants in the world, with Saudi Arabia the world's largest producer.

FIGURE 8 Al-Jubail, the largest desalination plant in the world, is located on the Persian Gulf in Saudi Arabia.



9.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Watch the first half of the video clip on the Iguazu Falls (**Iguazu Falls** weblink in the Resources tab).
 - (a) Where are the Iguazu Falls located?
 - (b) How wide are these falls?
 - (c) How much water flows over the falls each second when they are in flood?
 - (d) What is the size or **scale** of the flooded area of the Parana River?

Explain

2. How many Olympic-sized swimming pools would fit into the world's largest swimming pool? Find its location on Google Earth or in an atlas.

Discover

3. Conduct some research to find the location and name of the longest river in the world and the river with the second-highest discharge.
4. How much does it rain where you live? How does this compare with the wettest place in the world?
5. Use a blank outline world map to locate the **places** mentioned in this section. Annotate your map with the water facts for which each **place** is famous.
6. Climate maps give you clues about why each location holds amazing records. Look at your atlas and match the location of the **places** with these facts. Make a list of the geographic features that contribute to each amazing fact.
7. Conduct some research to find the following information: the **place** in the world where the most rain fell in a single 24-hour period; the **place** in Australia that has the record for the wettest year; the wettest town in Australia. Compare each of these with where you live.

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 Explore more with these weblinks: Planet Earth, fresh water; Iguazu Falls

9.4 How does Australia's climate affect water availability?

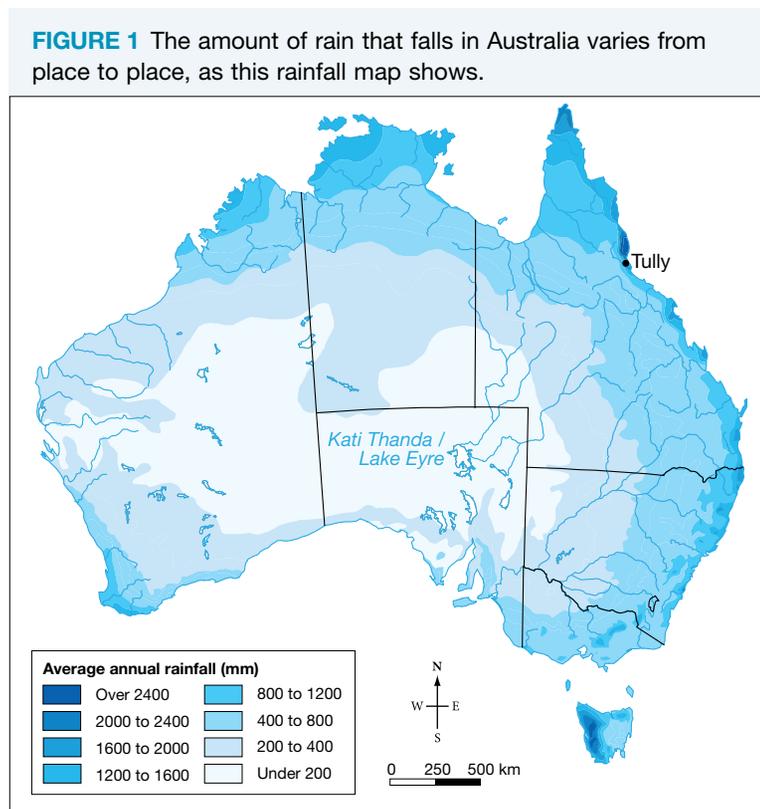
9.4.1 Dry, variable and evaporated

Australia is the driest inhabited continent (only Antarctica is drier), and there is very little fresh water available for our use. Rain falls unevenly across the country and from season to season.

The driest part of Australia is around the Lake Eyre Basin, and the wettest locations are places in north-east Queensland and western Tasmania. Rainfall is also highly variable, meaning that the amount of rainfall can vary or change from year to year. For example, one year a location might have very high rainfall, the next year it might have very low rainfall, and the following might be an average year.

9.4.2 Variability

Rainfall variability is the way rainfall totals in a given area vary from year to year. For example, if an area has low rainfall variability, it means rainfall will tend to be fairly consistent from one year to the next. Many coastal areas show this kind of rainfall pattern. In contrast, high rainfall variability means rainfall is likely to be irregular from one year to the next; there may be heavy rainfall in some years and little or no rainfall in others. Desert areas in central Australia tend to have low rainfall and high rainfall variability.



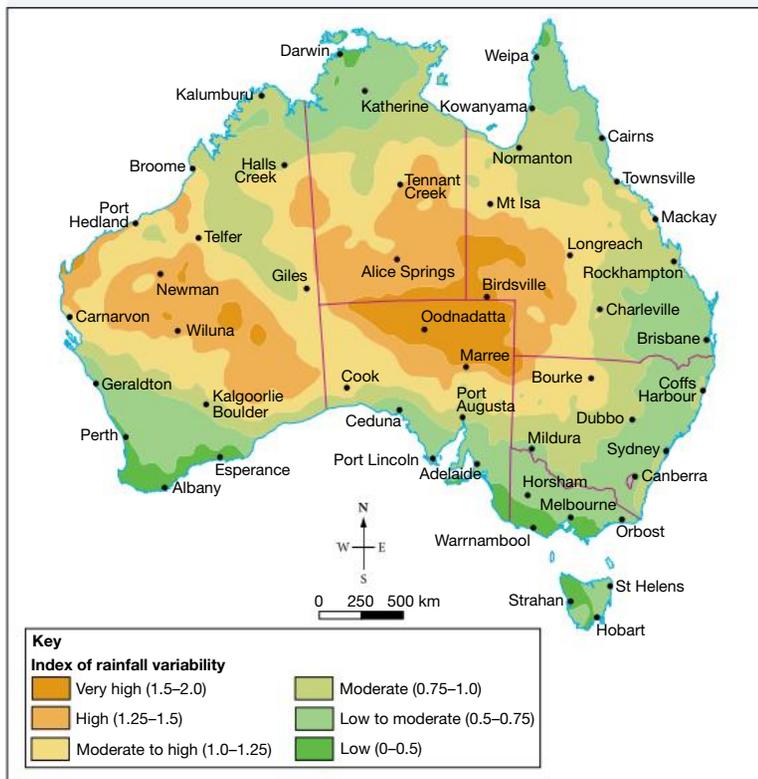
9.4.3 Evaporation

Another problem for Australia is that most of its rainfall does not end up in rivers; much of it evaporates. Of all the water carried by the world's rivers, Australian rivers contain only one per cent of that total — even

though Australia has five per cent of the world's land area. On average, only 10 per cent of our rainfall runs off into rivers and streams or is stored as groundwater. This figure drops to 3 per cent in dry areas and rises to 24 per cent in wetter places. The rest evaporates, is used by plants, or is stored in lakes, wetlands or underground storages. Areas in central Australia are very dry and, as a result, have high evaporation rates. Coastal areas have lower **evaporation** rates because they are close to the sea.

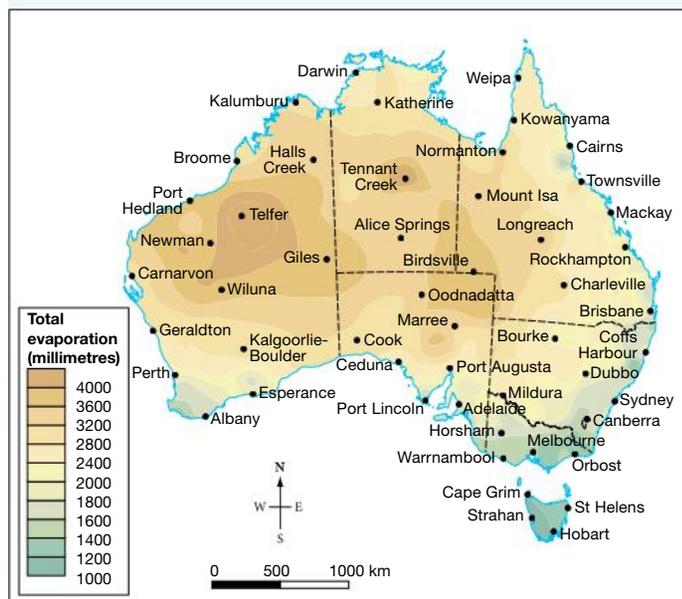
Relative humidity is a measure of the air's moisture content expressed as a percentage of the maximum moisture the air can contain at a certain temperature. Keep in mind that warm air can contain more moisture than cool air. Relative humidity does not measure the exact amount of moisture in the air because that depends on air temperature. For example, if Brisbane has a day of 30 °C and Melbourne has a day of 15 °C, and the relative humidity in both places is 60 per cent, there will be much more moisture in the air in Brisbane than in Melbourne.

FIGURE 2 Australian annual rainfall variability, 1900–2003



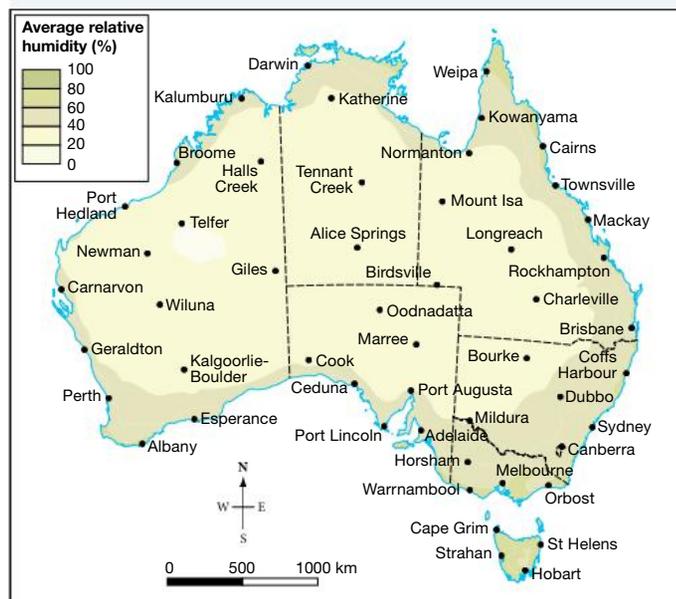
Source: MAPgraphics Pty Ltd, Brisbane

FIGURE 3 Average annual evaporation, Australia



Source: Bureau of Meteorology

FIGURE 4 Average relative humidity across Australia



Source: Bureau of Meteorology

Relative humidity tends to be higher in coastal regions, as is rainfall. Relative humidity tends to be higher in the parts of Australia that have very high rainfall, such as north Queensland and western Tasmania.

9.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Which two regions receive the most rainfall in Australia?
2. Which region has the most variable rainfall?

Explain

3. What is rainfall variability?
4. Look at figure 2 and locate the **place** where you live. Does your area have high or low rainfall variability?
5. What is relative humidity? Use figure 4 to find the relative humidity of the **place** where you live.
6. Why does Australia have high evaporation rates?
7. Study the rainfall, humidity and evaporation maps. Fill in the missing word in the following statements in order to describe the **interconnections** between these features of our climate.
 - Areas with low rainfall and low humidity tend to have a _____ evaporation rate.
 - Areas with high rainfall and high humidity tend to have a _____ evaporation rate.

Discover

8. Find the **place** where you live on the map of Australia. Study the four maps in this section and complete a table like the one below. Compare where you live with another **place** in your state or territory and a **place** a long way from where you live.

	Average rainfall	Rainfall variability	Average evaporation	Relative humidity
Where I live: _____				
Another place in my state/territory: _____				
A place far from where I live: _____				

9. Find out the average rainfall for Kati Thanda–Lake Eyre and the wettest locations and heaviest rainfalls in north-east Queensland and western Tasmania. Record the rainfall variability, evaporation and relative humidity. What differences are there between these locations?

Think

10. Australia has high evaporation rates and high rainfall variability. List all the ways that this **environment** makes water delivery to people a challenge.

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 Try out this interactivity: Hot and dry (int-3081)



Deepen your understanding of this topic with related case studies and questions.
 o Australia: weather and climate



9.5 SkillBuilder: How to read a map



WHAT ARE MAPS AND WHY ARE THEY USEFUL?

Maps represent parts of the world as if you were looking down from above. Cartographers use colours and symbols on the map to show how features such as roads, rivers and towns are organised in a spatial way. Maps are useful to show features so that we have a deeper understanding of places.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 Essential map features

BOLTSS

- B** Border — a box around the map to clearly show its extent
- O** Orientation — a compass direction
- L** Legend — a key to what the symbols and colours on the map stand for
- T** Title — a clear indication of what the map is about or its theme
- S** Scale — indicates distances on the map compared with the actual area being shown
- S** Source — where possible, the information used to make the map should be sourced

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Watch this eLesson: How to read a map (eles-1634)

Try out this Interactivity: How to read a map (int-3130)

9.6 How is water used by people?

9.6.1 What is water used for?

There are three main uses made of water by all people: growing food, producing goods and electricity, and using it in the home. The amount of water consumed for each of these uses differs from one place to another. The problem remains that while the total amount of fresh water is fixed, the amount used per person is increasing.

It is interesting to look at water consumption on a global scale. With the global average at 1240 cubic metres per person, per year, some countries consume more water than others. Examples of countries that consume nearly twice as much as the global average are the United States and Thailand. Some countries that consume the least amount of water per person are Peru, Somalia and China.

Figure 1 shows that most of the world's water is used in agriculture, to grow food for the world's increasing population. This is especially the case in the drier parts of the world where there is not enough rainfall to grow crops or grass for animals. There is a strong interconnection between the amount of rainfall in a region and the amount of water used in agriculture.

It is interesting to see how this pattern varies in different countries. In some countries, the water used in agriculture and industry is greater than the amount of water used in homes for domestic use. In other places, people consume more water for domestic use than for either agriculture or industry.

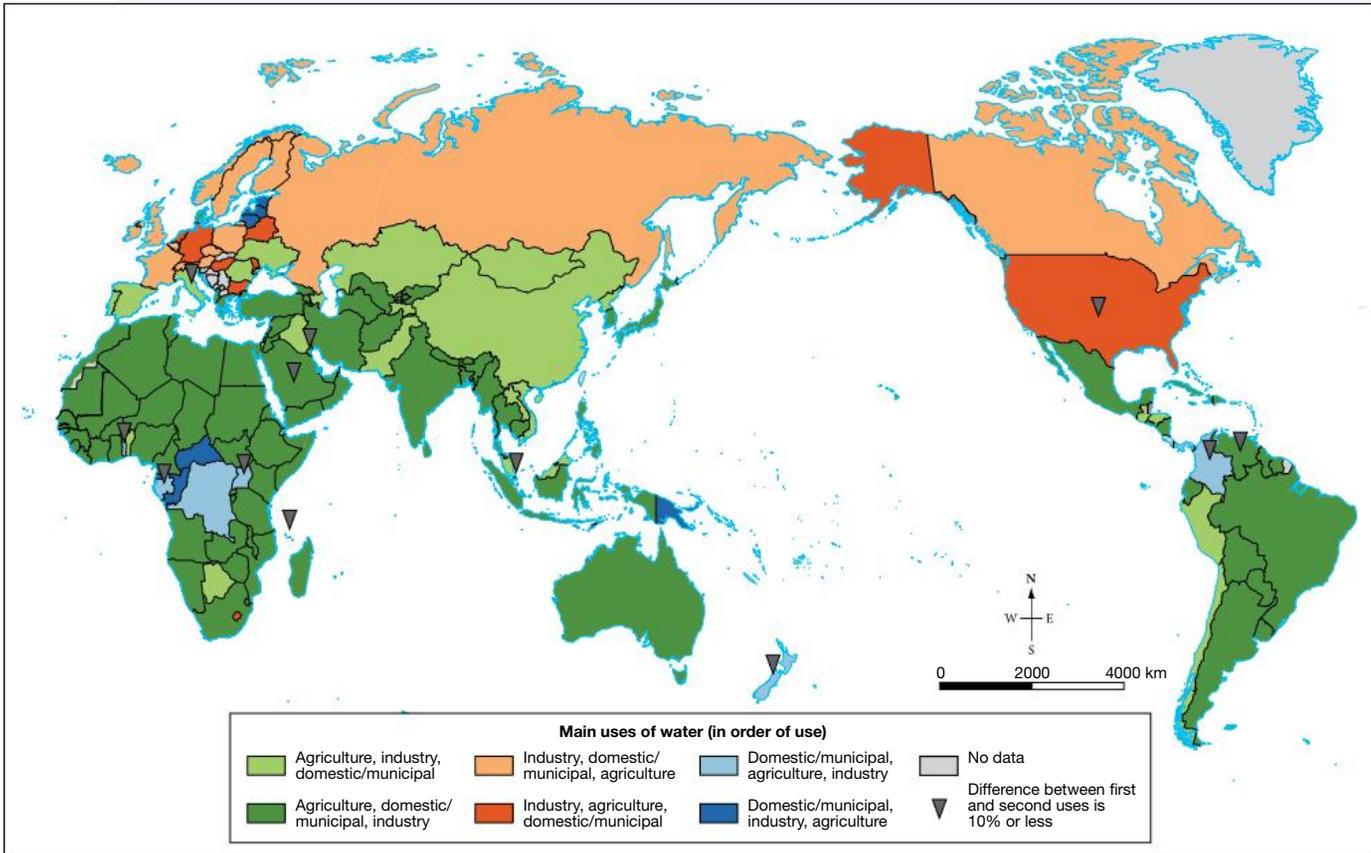


Deepen your understanding of this topic with related case studies and questions.

• How is water used in Australia?

• North-west Europe

FIGURE 1 Countries in the world differ in their use of water.



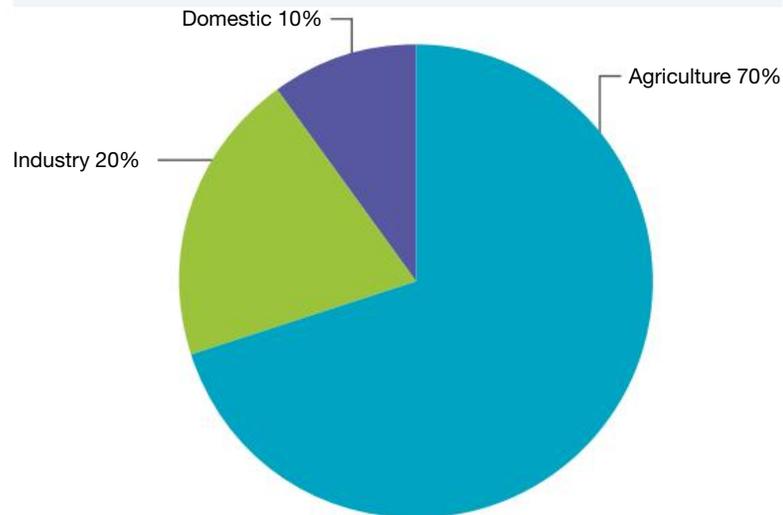
Source: Mekonnen, M.M. and Hoekstra, A.Y. 2011, 'National water footprint accounts: the green, blue and grey water footprint of production and consumption', Value of Water Research Report Series No. 50, UNESCO-IHE, Delft, the Netherlands

9.6.2 How is water used in Australia?

Agriculture is an important industry in Australia, and it is our thirstiest industry. It produces most of our food requirements and contributes enormously to Australia's export earnings.

Around 70 per cent of Australia's fresh water is used as irrigation for farming. Many crops are grown in dry areas where up to half the available water evaporates from the soil surface or seeps down too low into

FIGURE 2 World water use



the ground for plant roots to reach it. Therefore, more water is applied than is actually needed by plants. In manufacturing industries, most water is used to produce food, beverages and paper.

In many areas in Australia where rainfall is limited or highly seasonal, farmers irrigate their crops with water stored in dams, with groundwater or with water from major rivers. Irrigation is a very important use of water in Australia. Most large-scale farming could not provide food for Australia's population without using water from rivers, lakes, reservoirs and wells.

There is high demand for irrigation water during summer when river flows are low, and low demand for irrigation water during winter when river flows are high. This reverses the natural pattern of river flow.

TABLE 1 Fresh water use in Australia

Types of use of fresh water	%
Agriculture • (pasture 35%) • (crops 27%) • (rural and domestic stock 8%)	70
Urban	12
Horticulture	10
Industry	3
Mining	2
Services	2
Hydro-electricity	1

TABLE 2 Fresh water used to irrigate different crops in Australia

Crop type	Water (gigalitres)	%
Livestock, pasture, grains and other agriculture	8795	56
Cotton	1841	12
Rice	1643	11
Sugar	1236	8
Fruit	704	5
Grapes	649	4
Vegetables	635	4

Note: One gigalitre = 1 000 000 000 litres or one thousand million litres or 400 Olympic-sized swimming pools

FIGURE 3 Australia is one of the most irrigated countries in the world.



9.6 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What is most of the world's water used for?

Explain

2. Why might some countries use more water in industry than in agriculture or domestic use?
3. Use the data in tables 1 and 2 to draw two line graphs. Use the data from your graphs to describe how water is used in Australia. Which crops use the most water? Which use the least?

Discover

4. Research the Luangwa, Kafue and Zambezi rivers in Zambia, Africa. Use an atlas to trace the flow of the river and list some of the different water uses.
5. Study figure 1 and decide which of the following statements are true and which are false.
 - (a) Australia uses most water for agriculture, then industry, then domestic/municipal.
 - (b) Countries in North Africa use most water for industry, then domestic/municipal, then agriculture. (Use the **Regions** resource in the Resources tab).
 - (c) Belarus uses most water for industry, then agriculture, then domestic/municipal.
 - (d) Colombia uses most water for agriculture, then domestic/municipal, then industry.
 - (e) Belize uses most water for industry, then agriculture, then domestic/municipal.
 - (f) Malaysia uses most water for industry, then agriculture, then domestic/municipal.

Rewrite the statements that are false and make them true.

Think

6. Now use your atlas to look at patterns in figure 1 and compare them to a map that shows global wealth.
 - (a) Name two countries with low wealth and high water use in industry.
 - (b) Name two wealthy countries that do not have high water use in industry.
 - (c) Can you write a general statement about wealth and water use? Add two exceptions to your general statement.
 - (d) Discuss with students in a small group the fairness between wealth and water use. Should access to water be equal to all as a basic human right?

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Deepen your understanding of this topic with related case studies and questions.
o Mediterranean basin

9.7 SkillBuilder: Drawing a line graph

online only

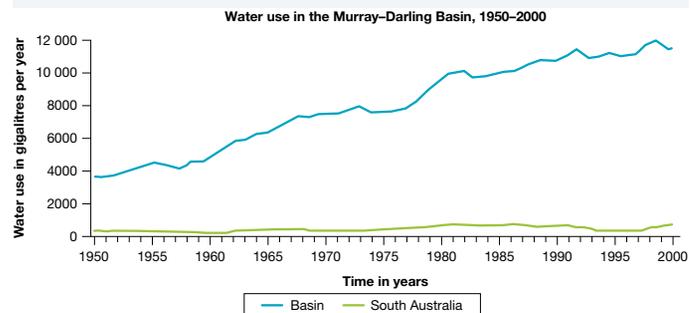
WHAT IS A LINE GRAPH?

A line graph displays information as a series of points on a graph that are joined to form a line. Line graphs are very useful to show change over time. They can show a single set of data, or they can show multiple sets which enables us to compare similarities and differences between two sets of data at a glance.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 Water use in the Murray–Darling Basin



-  Watch this eLesson: Drawing a line graph (eles-1635)
-  Try out this interactivity: Drawing a line graph (int-3131)

9.8 How is water used by indigenous peoples?

online only

Access this subtopic at www.jacplus.com.au

9.9 Does everyone have enough water?

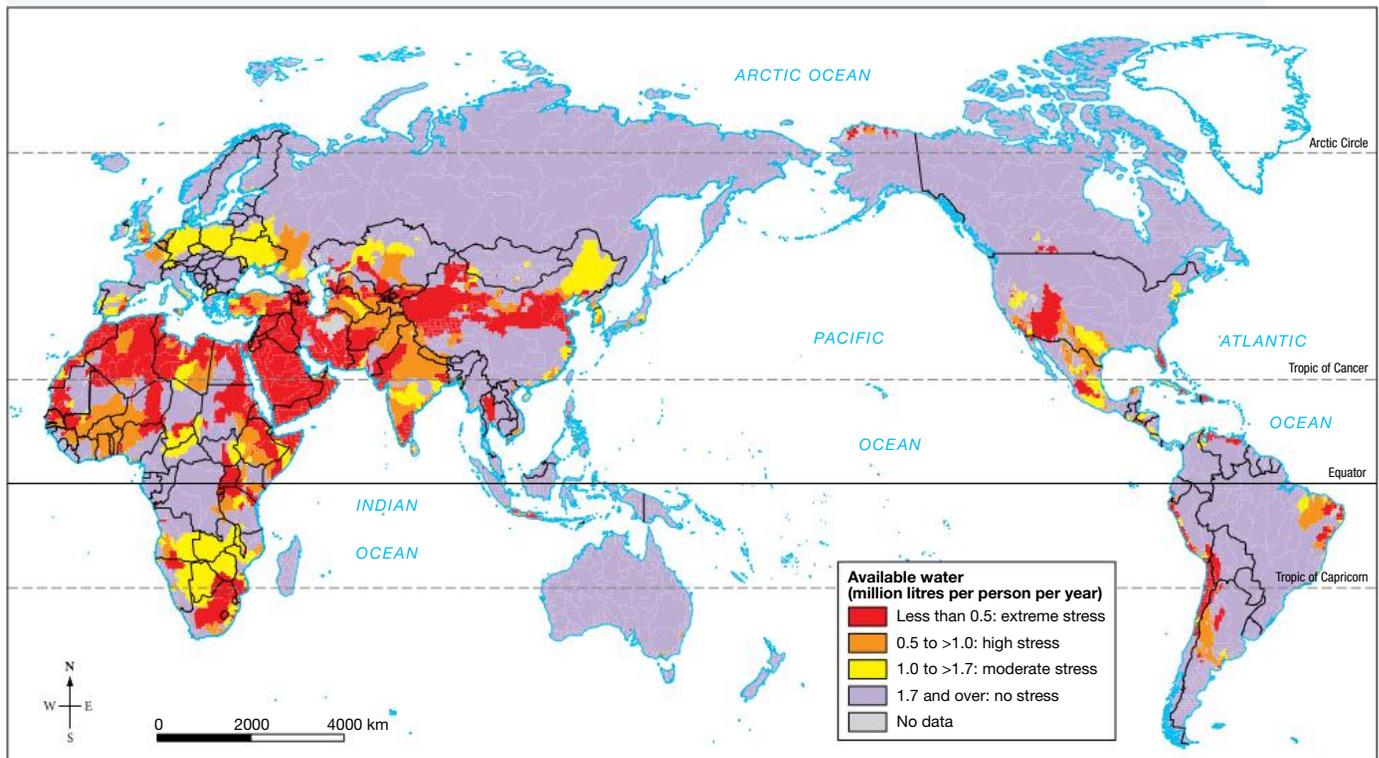
9.9.1 The human right to water

The right to water is a human right that is protected by many international agreements, yet not everyone has access to this life-giving resource.

Everyone has the right to enough safe, accessible and affordable water for all their needs. Water is more important to survival than food. In hot conditions, a person can survive up to three weeks without food but only two or three days without water.

People need access to **improved drinking water**, yet over 660 million people use unclean drinking water. Water is also needed to cook food, to bathe, to wash dishes and clothes, and to flush toilets. However, with the global population increasing and a fixed amount of water on Earth, some regions are suffering **water scarcity**. Water scarcity occurs when the demand for water is greater than the available supply.

FIGURE 1 Global fresh water availability



Source: Spatial Vision

Ideally, each individual needs one cubic metre (1000 litres) of drinking water per year, about 100 cubic metres for other personal needs, and 1000 cubic metres to grow all the food that he or she consumes. **Water stress** occurs when there is not enough water available for all demands. A country with less than 1000 cubic metres of renewable fresh water per capita (per person) is under water stress.

9.9.2 Access to water

A major reason for so many people lacking access to safe water is the difference between where people live and where rain falls. Other reasons include water being used for agriculture and industry in regions where it is dry, and water being so polluted it cannot be used.

As climate change conditions take hold, it is estimated that by 2025, 1.8 billion people will be living in regions with absolute water scarcity, and two-thirds of the world's population could be living under water stressed conditions. The problem of lack of water is often worse in rural areas, so many people move from the countryside into towns and cities, hoping for a better water supply. These people are sometimes called water refugees. However, the water in some cities is also inadequate because it is in short supply or is very polluted.

9.9.3 The water carriers

People who do not have water at home have to travel to get water. Water is very heavy and difficult to carry. The burden of this water-fetching usually falls on women, who carry the heavy load on their head or back. For some people, the trip to a water supply and back can take hours each day. The average distance that women in Africa and Asia walk to collect water is six kilometres. The average weight they carry on their heads is about 20 kilograms — the usual weight of a suitcase taken on a flight. The World Health Organization estimates that over 40 billion work hours are lost each year in Africa alone, just collecting drinking water.

FIGURE 2 Some people have access to cleaner water than others.

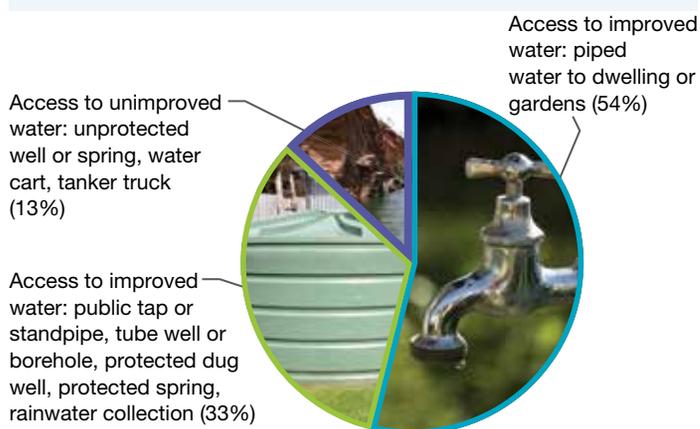


FIGURE 3 Drought conditions can reduce water quantity and quality.

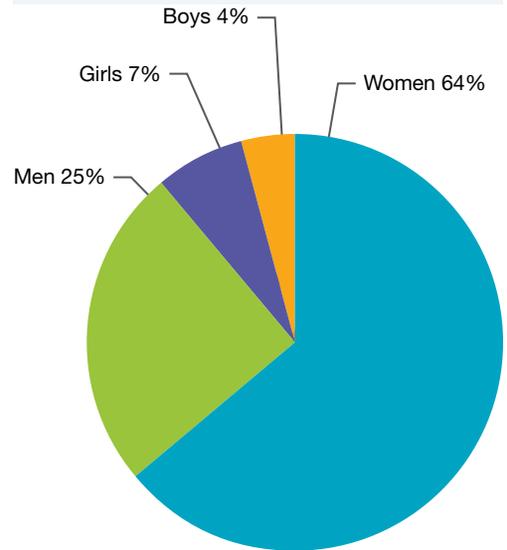


Use the **Burden of thirst** weblink in the Resources tab to watch a video about water scarcity in east Africa.

FIGURE 4 Women bear the burden of collecting water.



FIGURE 5 Who collects and carries the water?



9.9 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Why is access to water a human right? Discuss this in small groups and report your ideas back to the class in a class discussion.
2. What is meant by water scarcity and water stress?

Explain

3. What is the difference between improved and unimproved water supplies?
4. Describe the impact on a country if it is under water stress or water scarcity.
5. There is a difference in water quality across Australia. Is your water supply 'improved'? Explain.
6. What might be meant by the term *water refugee*?

Discover

7. Study figure 1. Name three countries that are water stressed and experience water scarcity.
8. Geographers like to look at patterns over **space**. Find an atlas map showing population density and compare it with figure 1. Refer to countries in North Africa and West Asia in your answers. (Refer to the **Regions** resource in the Resources tab.)
 - (a) Name three countries that have high population densities and are experiencing water scarcity.
 - (b) Name countries with low population densities experiencing water stress or scarcity.
9. Use figure 1 to describe the water scarcity in North Africa.

Think

10. Study figure 5. Women are the main water carriers in **places** where there is water stress and scarcity. Discuss with another student how this would affect a woman's health, education, family life and food production. Draw a consequence map of your ideas.
11. What would be the impact on the lives of women and children if there was a well with clean water in every village or town? Discuss in small groups the fairness or otherwise of this situation. How could this be improved for women and children?

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Explore more with this weblink: Burden of thirst



Complete this digital doc: Regions (doc-17950)



Deepen your understanding of this topic with related case studies and questions.

- The Dead Sea — overcoming water scarcity
- Russia and Eurasia

9.10 How does access to water improve health?

9.10.1 How does dirty water affect health?

Everyone in the world has the right to an adequate supply of water. The right to water is linked to many other rights, including the right to food and to health.

More than 660 million people in the world have no access to clean water, and more than 2.3 billion people have no safe way of disposing of human waste. Lack of toilets means many people defecate in open spaces or near the same rivers from which they drink. It is estimated that 90 per cent of sewage in poor countries ends up flowing straight into rivers and creeks.

This is an unacceptable situation. Dirty water and lack of proper hygiene kill around 315 000 children around the world every year, most of them younger than five. People who are sick are often unable to work properly, to look after their families or to attend school, adding to the poverty cycle they may already be in. The diseases that can be passed on to people as a result of contaminated water include diarrhoeal diseases such as cholera, typhoid and dysentery. Malaria, a disease transmitted by mosquitoes, kills about a million people every year.

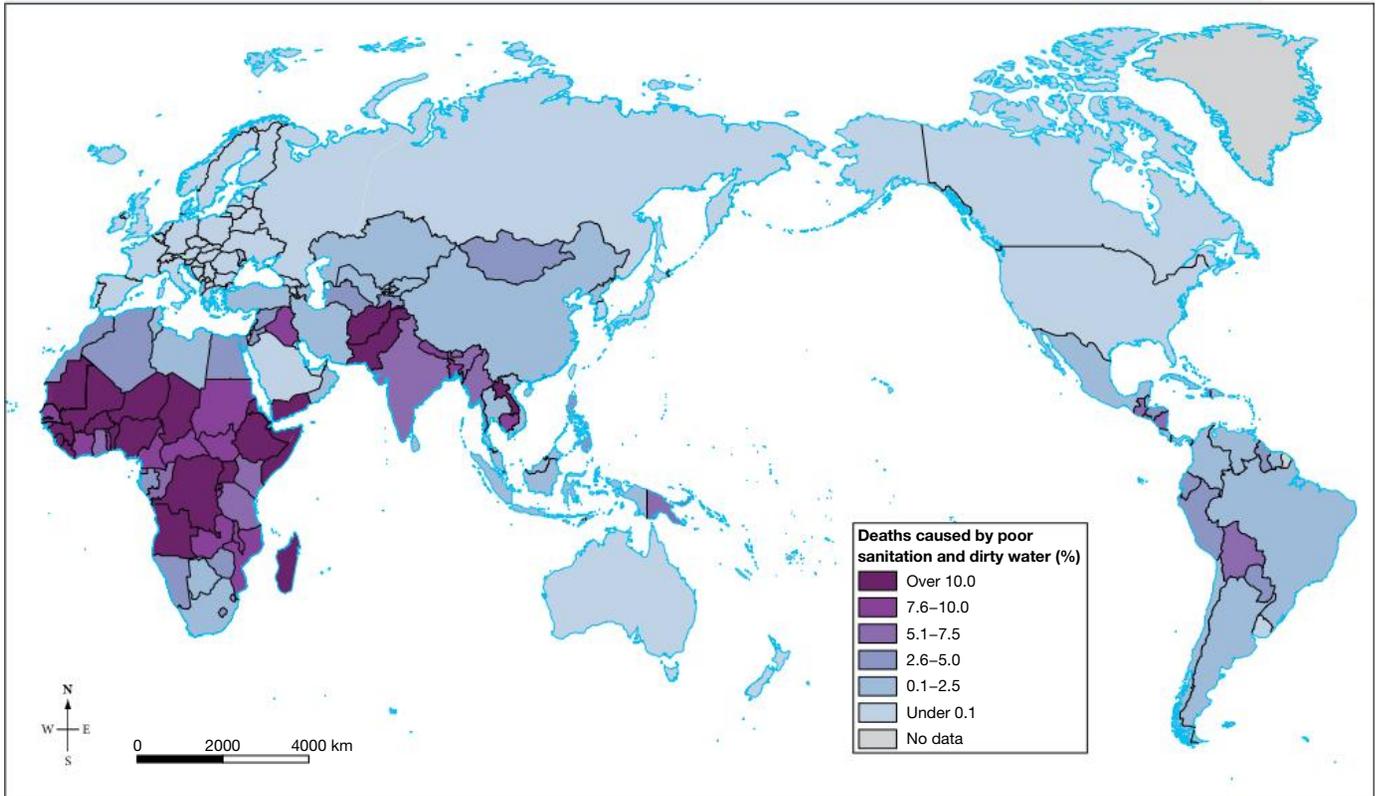
9.10.2 How can water-borne diseases be reduced?

People use different methods to treat the water they have collected. They can let it stand and settle, strain it through a cloth, filter it, add bleach or chlorine, or boil it. Some people do not treat their water at all.

When there is barely enough water to drink or to cook with, it is difficult for people to set aside water for washing hands and cleaning clothes. However, hygiene and sanitation are very important for health.

A number of aid groups, such as WaterAid, Water.org, CARE and A Glimmer of Hope, work on projects to improve sanitation and access to clean water. Washing hands, building cheap and effective toilets and teaching the community about good hygiene all help to reduce disease.

FIGURE 1 Deaths caused by poor sanitation and dirty water, 2012



Source: Data © World Health Organisation WHO 2012. All rights reserved

9.10.3 Sustainable Development Goals

Developed by the United Nations, the Sustainable Development Goals (SDGs) came into force on 1 January 2016. They are goals that aim to end all forms of poverty, fight inequalities and tackle climate change by the end of 2030. The SDGs build on the success of the Millennium Development Goals (MDGs) that were adopted from 2000–2015.

Goal 6 of the SDGs is to ‘Ensure access to water and sanitation for all’. From 1990 to 2015 – including the 15 years of the Millennium Development Goals – the percentage of people who had access to clean water increased from 76 to 91 per cent.

Some of the targets (by 2030) for Goal 6 are to achieve:

- universal and equitable access to safe and affordable drinking water for all
- access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
- substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals

FIGURE 2 Collecting water that is unsafe to drink



and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

- protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes (this goal is by 2020).

The maps shown in figures 4 and 5 show the achievements of the MDGs in relation to water and sanitation goals. The SDGs aim to build on these achievements.

9.10.4 Case study: Nigeria

CASE STUDY

Community-led total sanitation (CLTS), Nigeria

WaterAid went to a village called Olorioko in the state of Ekiti to see if they could improve the sanitation. When they arrived, there were very high rates of illness and death due to water-related diseases. The people in the village used the bush near their houses as their toilet.

CLTS leaders developed a relationship with the villagers and taught them how faeces can enter their food and make them sick. Once this was understood, the people wanted to change their practices so this would no longer happen. Action plans were drawn up and eventually the villagers created clean water points, built simple but effective toilets, and were given lessons in sanitation.

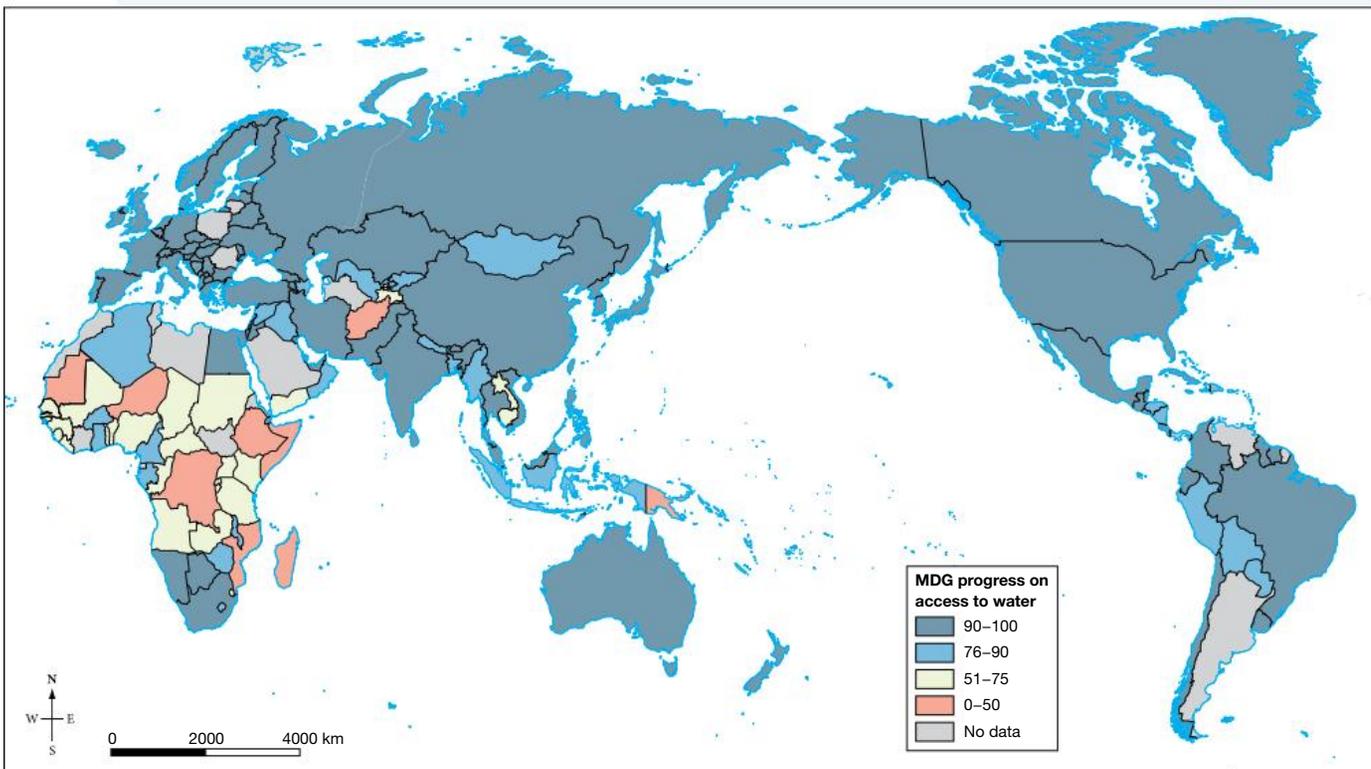
The health of the entire village has improved and they are also increasing their wealth. The CLTS project, which started in Bangladesh some years ago, has been a success and is spreading throughout Nigeria.

FIGURE 3 Location of Nigeria in Africa



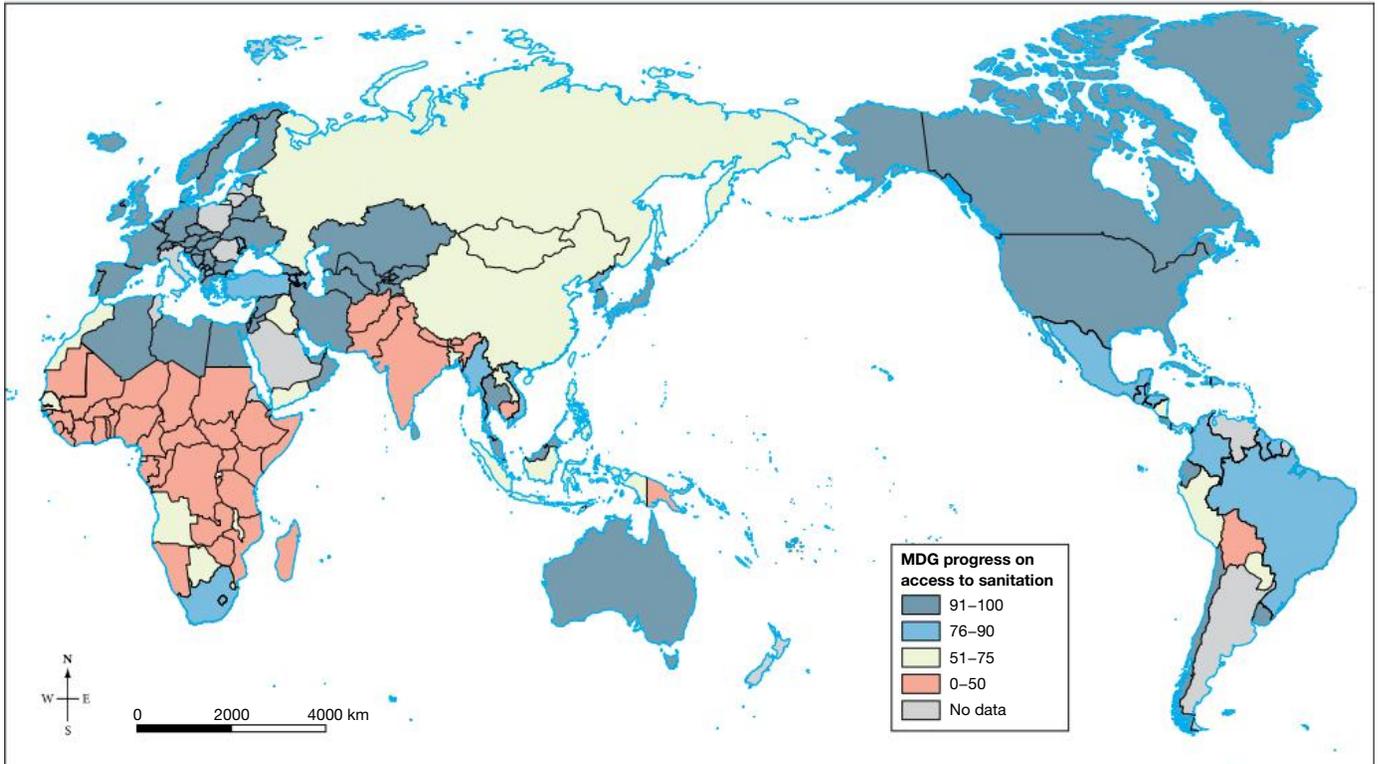
Source: Spatial Vision

FIGURE 4 MDG progress on access to water



Source: © Data sourced from World Health Organisation 2012

FIGURE 5 MDG progress on access to sanitation



Source: World Health Organisation / UNICEF Joint Monitoring Program JMP for Water Supply and Sanitation

9.10 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Remember

1. How many people in the world do not have access to clean water or sanitation? How do the SDGs aim to improve this situation?
2. Describe Nigeria's location in Africa and in relation to other countries and *places*.
3. What does CLTS stand for?

Explain

4. Study figure 1. Look at sub-Saharan and North Africa. (Use the **Regions** weblink in the Resources tab.)
 - (a) Name three coastal and two landlocked countries in these regions.
 - (b) How many countries in this region suffer deaths caused by poor sanitation and dirty water?
 - (c) Name the continents and regions that have the fewest deaths.
 - (d) Why do you think this *spatial* pattern exists? (*Hint*: Look at maps in your atlas that show wealth.)
5. Explain what the community-led total sanitation project aims to do.
6. Use the information in the maps to explain the success of the MDGs in achieving access to water and sanitation. Explain this for each world region. Use the **WHO/UNICEF** weblink in the Resources tab to see an interactive world map showing specific figures for water and sanitation.

Predict

7. What might happen to people's health in north and sub-Saharan Africa if access to water and sanitation is not improved?
8. A number of aid agencies are working in countries and regions to improve access to sanitation and clean water. Choose one of those listed in this topic and find out more about what they are doing. How will their work make a difference to the living conditions of the people they are helping?

Think

9. Work in groups of three or four. Use the data and facts in this section to plan a day of promoting knowledge about this issue at your school. Use the links available at the **UN SDG** weblink in the Resources tab which includes information on programs. Make particular reference to North and sub-Saharan Africa, and find out what is being done by aid organisations to improve the situation in these regions. Plan a video presentation that is interesting and catchy and will help people understand the action needed to improve access to clean water and sanitation. Use video and video editing programs and internet research in your planning.

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Explore more with these weblinks: UN SDG, WHO/UNICEF



Deepen your understanding of this topic with related case studies and questions.

World: health



9.11 What is virtual water?

9.11.1 Virtual water

The water we consume is not just what we use in cooking, drinking, washing, flushing or in the garden. Water is used to manufacture everything we use: mobile phones, toys, cars and newspapers. This **virtual water** needs to be considered in our **water footprint** — that is, the water used to produce all our goods and services.

Virtual water is also known as embedded water, embodied water or hidden water. It includes all the water used to produce goods and services. Food production uses more water than any other production.

Hidden in a cup of coffee are 140 litres of water used to grow, produce, package and ship the beans. That is roughly the same amount of water used by an average person daily in Australia for drinking and household needs. There is a lot of water hidden in a hamburger too: 2400 litres. This includes the water needed to grow the feed for the cattle over a number of years, to grow wheat for the bread roll, to grow all the other ingredients in the hamburger, and to process all the food.

Virtual water varies from food to food. For example, it takes about 3400 litres of water to grow one kilogram of rice, whereas it takes 200 litres to grow one kilogram of cabbage. Regions that are water stressed and that export food and other products (such as Australia and some countries in Africa and Asia) are also effectively exporting their precious water in these goods.

A country that imports rice, rather than growing it locally, therefore saves 3400 litres of water for every kilogram it imports. Some countries (such as Japan) have very little land on which to grow food; other

countries have very few cubic metres of renewable water per person. Singapore, for example, has only about 130 cubic metres per person. Both types of countries survive by virtual water imports: they import food rather than attempt to grow and produce all their food themselves. This means that small, wealthy countries can import food that needs a lot of water to produce, and export products that need little water to produce. This makes water available for other domestic purposes such as drinking and cooking.

TABLE 1 The water used to grow food varies from product to product

Food item	Unit	Global average water (litres)
Apple or pear	1 kg	700
Barley	1 kg	1300
Banana	1 kg	860
Beef	1 kg	15 500
Beer (from barley)	250 mL	75
Bread (from wheat)	1 kg	1300
Cabbage	1 kg	200
Cheese	1 kg	5000
Chicken	1 kg	3900
Chocolate	1 kg	24 000
Coconut	1 kg	2500
Coffee (roasted)	1 kg	21 000
Cotton shirt	1	2700
Cucumber or pumpkin	1 kg	240
Dates	1 kg	3000
Eggs	1	200
Goat meat	1 kg	4000
Groundnuts (in shell)	1 kg	3100
Hamburger	1	2400
Lamb	1 kg	6100
Leather	1 kg	16 600
Lettuce	1 kg	130
Maize	1 kg	900
Mango	1 kg	1600
Millet	1 kg	5000
Milk	250 mL	250
Olives	1 kg	4400
Orange	1	50
Paper	1 A4 sheet	10
Peach or nectarine	1 kg	1200
Pork	1 kg	4800
Potato	1 kg	4800
Rice	1 kg	3400
Soybeans	1 kg	1800
Sugar (from sugar cane)	1 kg	1500
Tea	250 mL	30
Tomato	1 kg	180
Wheat	1 kg	1300
Wine	125 mL	120

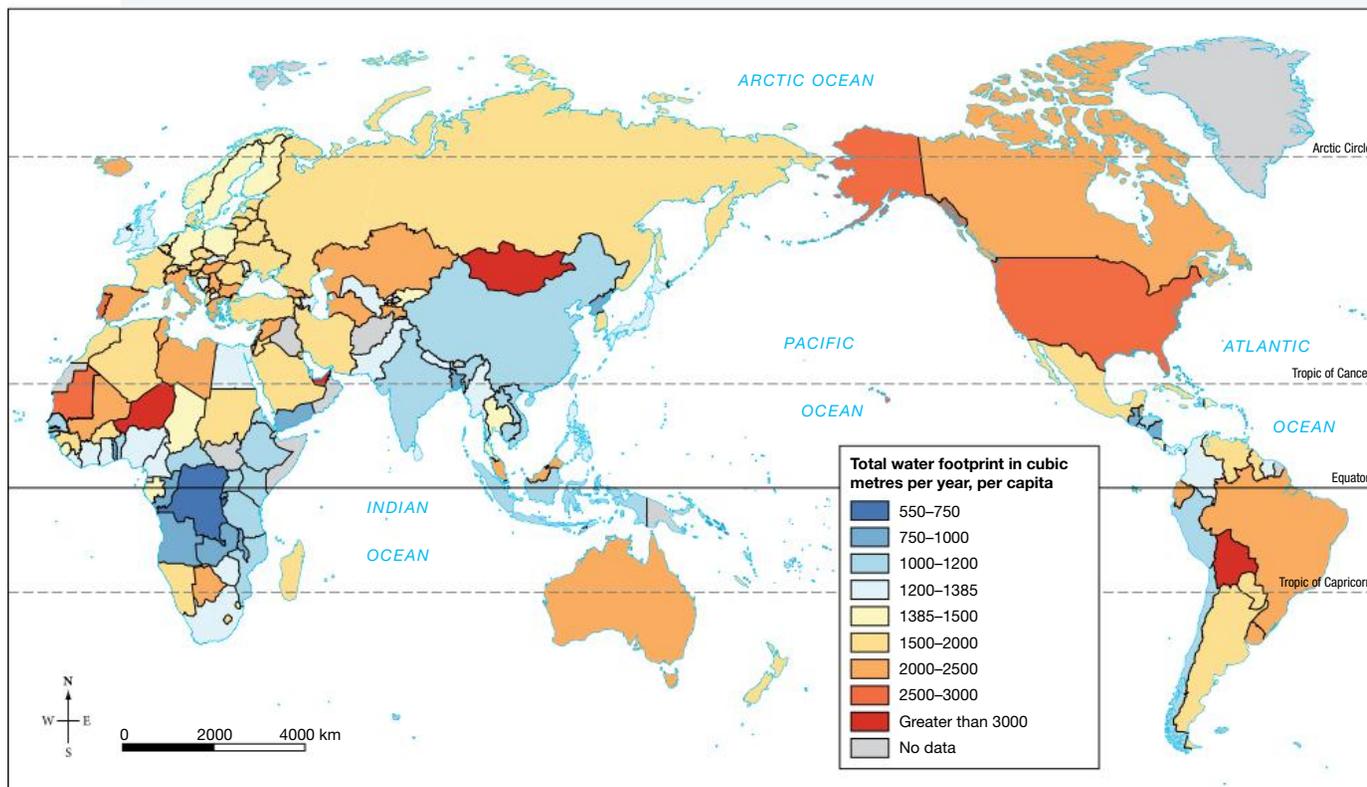
The major exporters of virtual water are found in North and South America (the United States, Canada, Brazil and Argentina), south Asia (India, Pakistan, Indonesia, Thailand) and Australia. The major virtual water importers are North Africa and the Middle East, Mexico, Europe, Japan and South Korea.

9.11.2 What is a water footprint?

The water footprint of an individual or country is the total volume of fresh water that is used to produce the goods and services consumed by the individual or country. It includes the use of:

- blue water (rivers, lakes, **aquifers**)
- green water (rainfall used for crop growth)
- grey water (water polluted after agricultural, industrial and household use).

FIGURE 1 Average water footprints



Source: waterfootprint.org

Not all goods consumed in one particular country are produced in that country — some foods and products are imported. Therefore, the water footprint consists of two parts: use of domestic water resources and use of water outside the borders of the country.

In the United States, the average water footprint per year per capita is 2842 cubic metres, which is enough to fill an Olympic swimming pool. In China, the average water footprint is 1071 cubic metres per year. The figure for Australia is 2315 cubic metres per year.

Japan, with a footprint of 1379 cubic metres per person per year, has about 65 per cent of its total water footprint outside the borders of the country, meaning a lot of its water is imported in the form of consumer goods and food. On the other hand, only about seven per cent of the Chinese water footprint falls outside China.

9.11 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Explain the difference between virtual water and a water footprint.
2. Outline the differences between blue, green and grey water.

Explain

3. Refer to figure 1. Describe the patterns you notice over **space** of countries with (i) very high and high water footprints and (ii) very low and low water footprints.
4. Use a blank world map and choose two colours to show the main importers and exporters of virtual water. Describe the **spatial** patterns of the map you have drawn.

Discover

5. Study table 1. Choose three meat, five grain, two dairy, two non-food, four fruit, four vegetable and two processed products from the list. Create a bar graph to show how much water is used to produce a vegetarian diet and a meat-based diet. Which diet uses more water?

Think

6. Conduct a debate on the following statement: 'People should eat less meat in order to consume less water.'
7. Compare the data for North Africa and West Asia (the Middle East) in figure 1 and the maps in subtopics 9.2, 9.6 and 9.9. (Also use the **Regions** resource in the Resources tab.) Write three summary statements that describe the amount of rainfall, water use (including water footprints) and water availability for these two regions. How do these patterns compare with Australia?
8. Describe how water footprints **interconnect places** often far away from each other.

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Try out this interactivity: Unreal (int-3080)



Complete this digital doc: Regions (doc-17950)



Deepen your understanding of this topic with related case studies and questions.

🔗 **Our water footprint**

9.12 How does water quality change?

9.12.1 Polluted rivers

Water quality can affect health in many ways. Rivers and streams act as drainage systems and, when it rains, water transports rubbish, chemicals and other waste into drains and, eventually, rivers.

Different pollutants — faeces (human and animal), food wastes, pesticides, chemicals and heavy metals— can come from industrial wastewater, domestic sewage, cars, gardens, farmland, mining sites and roads, and flow into waterways.

Some countries, cities and local areas are better than others at providing services and enforcing laws to prevent pollutants from entering water. Some of the worst polluted rivers and lakes in the world include rivers and aquifers in China (such as the Songhua River and the Yellow River), the Citarum River in Indonesia, the Yamuna and Ganges rivers in India, the Buriganga River in Bangladesh and the Marilao River in the Philippines.

FIGURE 1 The Citarum River in Indonesia is one of the most polluted rivers in the world.



9.12.2 How clean is your river?

Fieldwork investigating waterways

Some schools are located close to a waterway, even if it is a highly modified one like a concrete drain. Conducting fieldwork at a local waterway will help you to better understand national and global issues.

The aim is to investigate the physical properties of a river or creek at various points along its length, and to make observations of the water quality and any evidence of human impact. Does the quality of the water change between upstream and downstream sites? Are there human factors that can account for these changes? Differences may be more obvious if the waterway passes through a built-up area or a farm.

The following activities should be undertaken at each site and recorded on paper or directly onto a database on a laptop computer or other mobile device. Use a map and camera to record observations about the surroundings of each site, especially the amount of vegetation and possible human impact. Use GPS to record and map your location at each site.

Measuring river width

Stretch a tape measure 20 centimetres above the water from one bank to the other, measuring from where the dry bank meets the water. Take your reading directly above the tape at several locations, and calculate an average.

Measuring the water depth

While the tape measure is stretched across the river or creek, use a metre rule to measure the depth. Record the depth every 50 centimetres (or 30 centimetres if the creek is small). Make sure the ruler only just touches the riverbed, and record each measurement as it is taken.

Temperature

Aquatic plants and animals have a particular temperature range in which they can survive. High water temperatures can result in reduced oxygen available for plants and animals. It is useful to compare temperature readings with **biodiversity** counts to investigate this relationship. Place the bulb of a thermometer in the water for five minutes and record the result.

pH

We use pH to measure the acidity or alkalinity of water on a scale of 1 to 10. Drinking water should have a pH reading of around 6. A reading either side of this may indicate that water is polluted. You can test pH by taking a sample of water and using pH paper or chemical reagents.

Turbidity

Water that lets little sunlight through is said to be turbid. Turbidity is the amount of suspended sediment in water — sediments such as clay, silt, industrial waste or sewage. A Secchi disc is used to measure turbidity. This can be made using an ice-cream lid, string, a weight and black paint.

Lower the disk into the water, making sure there are no waves or ripples, cloud or glare. Do not wear sunglasses when making the reading. When it is only just visible, record the depth in centimetres. The lower the number, the greater the turbidity.

Salinity

Salinity measures the amount of salt in the water. To measure salinity, you will need to use an electrical conductivity meter, or EC meter, which can be bought from science equipment suppliers.

Biodiversity

Biodiversity in water is studied by taking a small area of water and investigating the number and diversity of animal species. It is measured by ponding or water sampling. Choose a number of sites in the water and ensure that they contrast with each other: there should be clear, muddy, deep, shallow, moving and still sites, for example.

The materials needed for ponding include a fine net; a white plastic ice-cream container; a magnifying glass; a notebook and pencil for recording the number and variety of species; a camera for photographing specimens; and an identification chart or book.

Aesthetics — what the water looks like

Another measurement of water quality is to grade the appearance of the water. If an area of water is appealing to look at, it is considered aesthetically appealing. Observe aspects such as colour, odour, and the presence of algae, surface film or oil slicks. Ratings from 1 (excellent) to 5 (extremely poor) can be used and recorded. Photographs and field sketches of the sites are also useful.

FIGURE 2 You can create a simple Secchi disc and use it to measure turbidity.

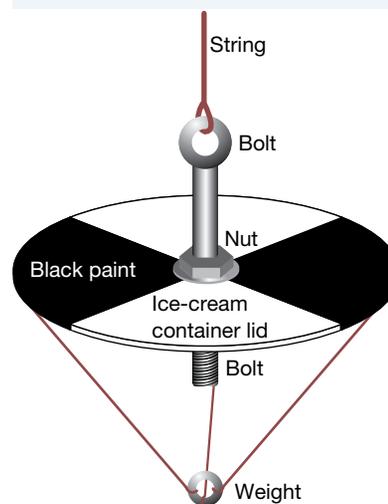
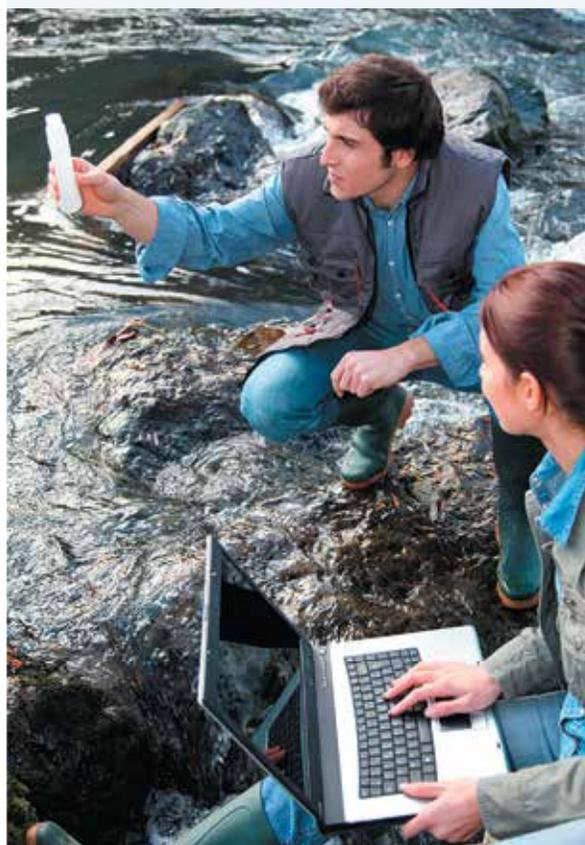


FIGURE 3 Students measuring river water quality



9.12 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. How do rivers get polluted?
2. What is an aquifer?

Explain

3. You will need to organise and present the information you collected in a field report. This can be presented in Google Maps, or as a Prezi presentation, web page or multimedia report.
Determine some headings for your report such as a main title; introduction and background; data and findings; and conclusion. Arrange your data and choose the best way to represent it, whether in the form of graphs, tables, two maps, overlays, or photo displays and diagrams. Write an analysis of your data by describing it in detail. Draw conclusions and provide an evaluation of the field trip.
4. You should alert your local council to your findings by inviting someone to a presentation or sending a link to your findings to an appropriate representative. Is there action that needs to be taken to improve this waterway?

Discover

5. Work in groups to investigate one of the other polluted rivers mentioned in the text. Show where it is located on a map. What does it look like? What has caused the pollution? Is anything being done to improve conditions?

9.13 How can water be managed?

9.13.1 Managing our water supply

More water cannot be created, but it can be managed better. With a growing global population, and the predicted changes due to climate change, the pressure on this finite resource requires a number of solutions.

Introducing effective water management can be a challenge at any scale, whether local, national or global. It needs the cooperation of all users, including farmers, industry, individuals, and upstream and downstream people in different countries or different states. With all the competing demands on water, management is often easier to approach at a local scale.

Because agriculture uses the greatest amount of water, it makes sense to make irrigation systems more efficient. The aim is to get more production for every drop of water used. Some irrigation systems waste up to 70 per cent of their water through leaks and evaporation, so changing the irrigation method can save water. Other management practices include recycling, using desalinated water and using stormwater.

9.13.2 Managing water across borders

About 260 drainage basins across the world are shared by two or more countries. Thirteen river basins are shared by five or more countries. Depending on their location in the catchment, some countries can suffer reduced access to water because of other countries' usage. This shows the *interconnection* between places — what happens in one place affects another. Diverting rivers, building dams, taking large amounts of water out for irrigation, and creating pollution can all lead to conflict between countries, states and political groups.

Country disputes have occurred in the Nile Basin in North Africa, along the Mekong River in Asia, the Jordan River Basin in West Asia (the Middle East) and along the Silala River in South America. This can also happen within a country, which has happened with the Murray–Darling Basin in Australia, across four states and one territory.

Some countries sign international agreements or treaties to try and share water between nations. These include the Rhine and Danube rivers in Europe, the Nile River in North Africa, the Ganges and Brahmaputra rivers in Asia and the Parana River in South America.

FIGURE 1 Kurnell desalination plant in southern Sydney provides water to the city's population. It is powered by wind energy produced in Canberra.



FIGURE 2 The Jordan River passes through three countries, and has tributaries in the north that flow in from another two countries.



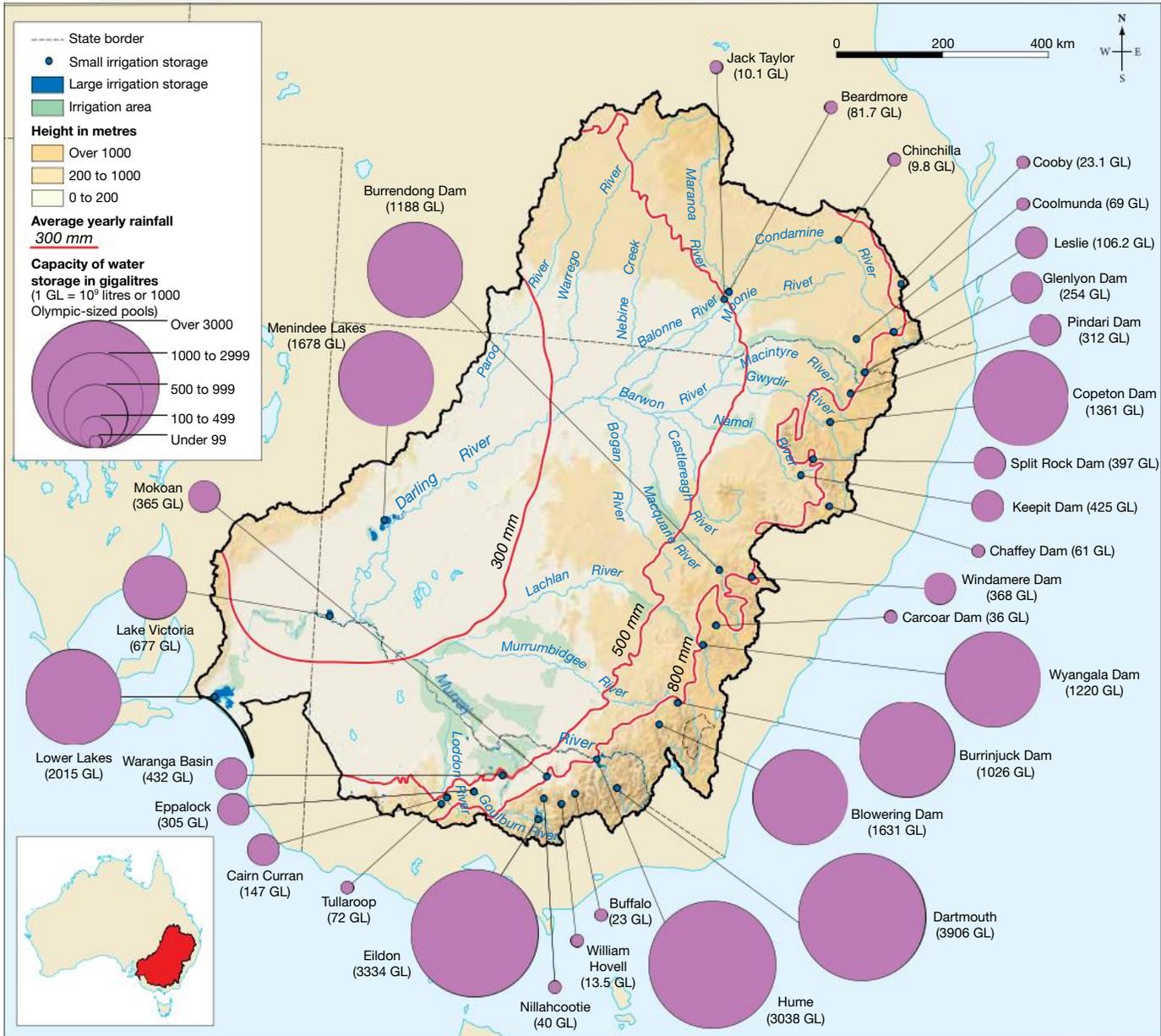
9.13.3 Managing water within a country: the Murray–Darling Basin

The Murray–Darling Basin (MDB) is Australia's largest catchment area, covering 14 per cent of the country's total landmass. It stretches across four Australian states (Queensland, New South Wales, Victoria and South Australia) and the Australian Capital Territory, and includes 23 separate river catchments. This is a changed system, in which water is taken out all along its length for storage in dams and use in irrigation. During long periods of drought, little water reaches the Murray mouth, often causing it to close. The Queensland floods in the summers of 2011 and 2012 provided the largest river flows for the MDB in many years.

Over the years the management of this river system was the responsibility of each of the four states and the territory, resulting in a lot of conflict. In 2008, the Australian Government took control of the MDB and prepared plans for how it should be managed. There is still controversy over the decisions being made.

Other examples of water basins that are shared by states within a country are the Colorado River and Ogallala Aquifer in the United States, and the Kaveri River in India. The Great Artesian Basin in Australia shares groundwater between Queensland, New South Wales, South Australia and the Northern Territory.

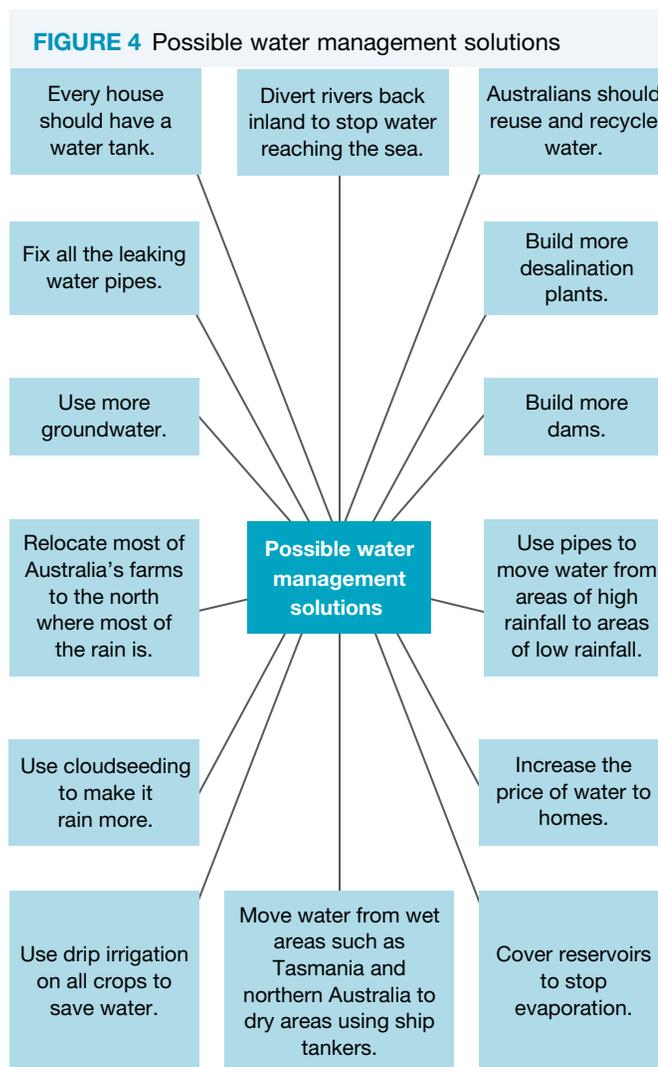
FIGURE 3 Map of the Murray–Darling Basin. The Australian Government has been managing the basin.



Source: Spatial Vision

9.13.4 Other water management solutions for Australia

Over recent years, and especially after prolonged droughts, many different solutions have been suggested to solve our water problems. Some of these seem impractical, such as towing icebergs from Antarctica; others have generated much discussion, such as fixing all the leaking pipes in towns, cities and outback bores. Each of the suggestions has to be considered in light of various factors: cost, impact on people, impact on the environment, technology and politics.



9.13.5 Managing water scarcity in Perth

Perth, Western Australia, has a population slightly in excess of two million people and which is expected to be around three million before 2060. A growing population creates a growing demand for domestic, industrial, municipal and agricultural water. To cope with the danger of future water scarcity, the Water Corporation of Western Australia has developed the Integrated Water Supply Scheme (IWSS). This scheme provides water for the Perth metropolitan area as well as parts of the South West, Goldfields and Agricultural regions of Western Australia.

In order to cope with a drying climate in the south-west of Western Australia, the Water Corporation has moved away from dams as the chief source of water to a scheme that gathers water from:

- dams
- aquifers
- desalination plants
- stormwater.

In the 1970s the stream flow of water into dams averaged 338 gegalitres per year. By 2010 this average had fallen to 75 gegalitres. Dams in the future will be used as reservoirs to store water from other sources until it is distributed. Adding groundwater to dams ensures good water quality.

Aquifers are underground stores of water found in the rock structure. Perth has three levels of aquifers and the deepest of these is the Yarragadee Aquifer, which is a very reliable source. Some water is taken from shallow aquifers that drain naturally into the ocean.

To help secure the sustainability of this source, the Water Corporation has built Australia's first wastewater recycling plant at Beenyup in Perth's north. Here, waste water is purified to drinking standard and injected into the aquifers. This will supply 28 billion litres of fresh water each year, enough to supply 100 000 households.

Perth has two desalination plants at Kwinana and Binningup; together they provide nearly half of the city's water. This is about 150 million litres per year. Desalination is sustainable and completely independent of climatic change.

Stormwater is water that runs off from roads and other hard surfaces following rain events. Stormwater will naturally find its way into shallow aquifers. The Water Corporation also supports and encourages households and businesses to collect water from roofs. Care must be taken when reusing stormwater because it may contain chemicals, fertilisers and sediment.

The operation of the Integrated Water Supply Scheme is now relatively unaffected by a drying climate. Today only 7 per cent of Perth's water comes from dams. Aquifers supply 46 per cent and desalination 47 per cent of the city's and the south-west region's water.

9.13 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Why is it difficult to manage water when the water supply crosses country or state borders?

Discover

2. Conduct some further research to find out how water is being managed along the Jordan River in West Asia (the Middle East). (Use the **Regions** resource in the Resources tab.)
3. Investigate the use of desalination in countries in West Asia.
4. Find out about the Murray–Darling Basin plan and how it will help manage water.

Predict

5. If water were oil, leaking pipes would be fixed immediately. However, there is still a perception that water is not as valuable as oil, so the same investment is not made in it. Imagine you work for an advertising company and have to convince your audience that water is more valuable than oil. Film your advertisement and use a video editing tool to create music and voiceovers. Present this to your class and your school.

Think

6. Use the **Catchment detox** weblink in the Resources tab to play the catchment-in-crisis game. See if you can manage the catchment so that agricultural, personal, industrial and environmental needs are all met. What might be the best water solutions for Australia?
7. Study the list of possible water solutions shown in figure 4 and choose the ones that are most likely to work. You will work in pairs to conduct some research about one of the proposed methods. There will be advantages and disadvantages for each. You will need to use the internet and libraries to find your information, and you will need to find out:
 - how the solution will be carried out, including the technology that might be used
 - which **places** in Australia are most likely to be involved and why (this might include rainfall data, Google images or maps, and photographs)
 - how much it will cost and who will pay
 - what impact the solution will have on the environment
 - what impact there will be on people
 - whether there are any political implications
 - where the solution will work best (shown on a map).

Presenting your information

Any data collected needs to be presented in an appropriate way. Climate data could be represented as a climate map; a satellite image or photograph could be annotated with notes; models or plans of the solution could be drawn.

Sharing your information

The class will need to share all the information found so that a decision can be made about the most probable solutions. Share via a presentation (such as a Prezi), a class wiki or blog.

Making a decision

Conduct a class vote to remove five of the 14 solutions immediately after the information sharing. Do this by writing each solution on a board and voting on each one. You will be left with nine water management solutions.

Diamond ranking activity

Use the remaining nine solutions to complete a diamond ranking. Make a copy of the nine solutions and write these on separate cards or sticky labels. Individually, use the information you shared about the solutions to rank the solutions from the most viable to the least viable from the top of the chart. It is often easier to work on the two extremes, top and bottom, and then continue working from there.

Once you have your ranking, work in groups of four. Explain why you chose the ranking and see whether each of you can agree on the same ranking. Work together as a class and discuss the solutions again and see if you can arrive at a class ranking.

Conclusion

Write a short report, and include in it the final ranking of water management solutions for Australia. Include the discussions and explanations in your report.

Now write a letter to your local state or territory water authority, outlining what you consider to be the three best management solutions for Australia and why.

8. Conduct a debate on the following statement: 'There is enough water for all purposes if it is managed well.'

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-  Try out this interactivity: Ways forward (int-3082)
-  Complete this digital doc: Regions (doc-17950)
-  Explore more with this weblink: Catchment detox



Deepen your understanding of this topic with related case studies and questions.

-  **Salisbury Council – Aquifer storage, transfer and recovery**
-  **Murray–Darling Basin**

9.14 Review

online only

9.14.1 Review

The Review section contains a range of different questions and activities to help you revise and recall what you have learned, especially prior to a topic test.

9.14.2 Reflect

The Reflect section provides you with an opportunity to apply and extend your learning. Access this subtopic at www.jacplus.com.au

9.5 SkillBuilder: How to read a map

9.5.1 Tell me

What are maps and why are they useful?

Maps represent parts of the world as if you were looking down from above. The mapmaker or cartographer simplifies the plan view from a vertical aerial photograph or satellite image. Cartographers use colours and symbols on the map to show how features such as roads, rivers and towns are organised in a spatial way. There

are six features that should be included on all maps. To help us remember these we use the acronym BOLTSS (see figure 1). Maps are useful to show features so that we have a deeper understanding of places. When travelling, maps are essential to navigate unfamiliar places.

FIGURE 1 Essential map features

BOLTSS

- B** Border — a box around the map to clearly show its extent
- O** Orientation — a compass direction
- L** Legend — a key to what the symbols and colours on the map stand for
- T** Title — a clear indication of what the map is about or its theme
- S** Scale — indicates distances on the map compared with the actual area being shown
- S** Source — where possible, the information used to make the map should be sourced.

FIGURE 2 Melbourne street map



Understanding map legends

When you look at a map you quickly notice the colours and symbols. The legend, or key, lists and explains the colours and symbols used on the map. The legend is usually found next to or in a corner of the map, or it may be located in a special reference section.

Cartographers overcame the difficult task to show all features of an area on a map by using symbols and colour to show point symbols (e.g. church), line symbols (e.g. road) and area symbols (e.g. forest). Many maps use the same symbols to help the reader instantly recognise features; for example, blue lines to represent rivers. These conventional symbols are usually drawn to look like the objects they are representing. The many symbols used in atlases and other maps are small. It is important that you keep your symbols small when making your own maps.

Maps often show features that can be seen from an aeroplane but they also show features that are not visible from the air.

Model

A good map has BOLTSS:

- Border — to show the boundaries of the map
- Orientation — to show direction on the map
- Legend — to explain the symbols and colours used
- Title — to describe what the map is
- Scale — to indicate distances on the map
- Source — to explain the source of the information for the map.

Importantly, the map must be accurate and neat.

9.5.2 Show me

How to read a map

You will need:

- a map of the region being considered (figure 3).

Procedure:

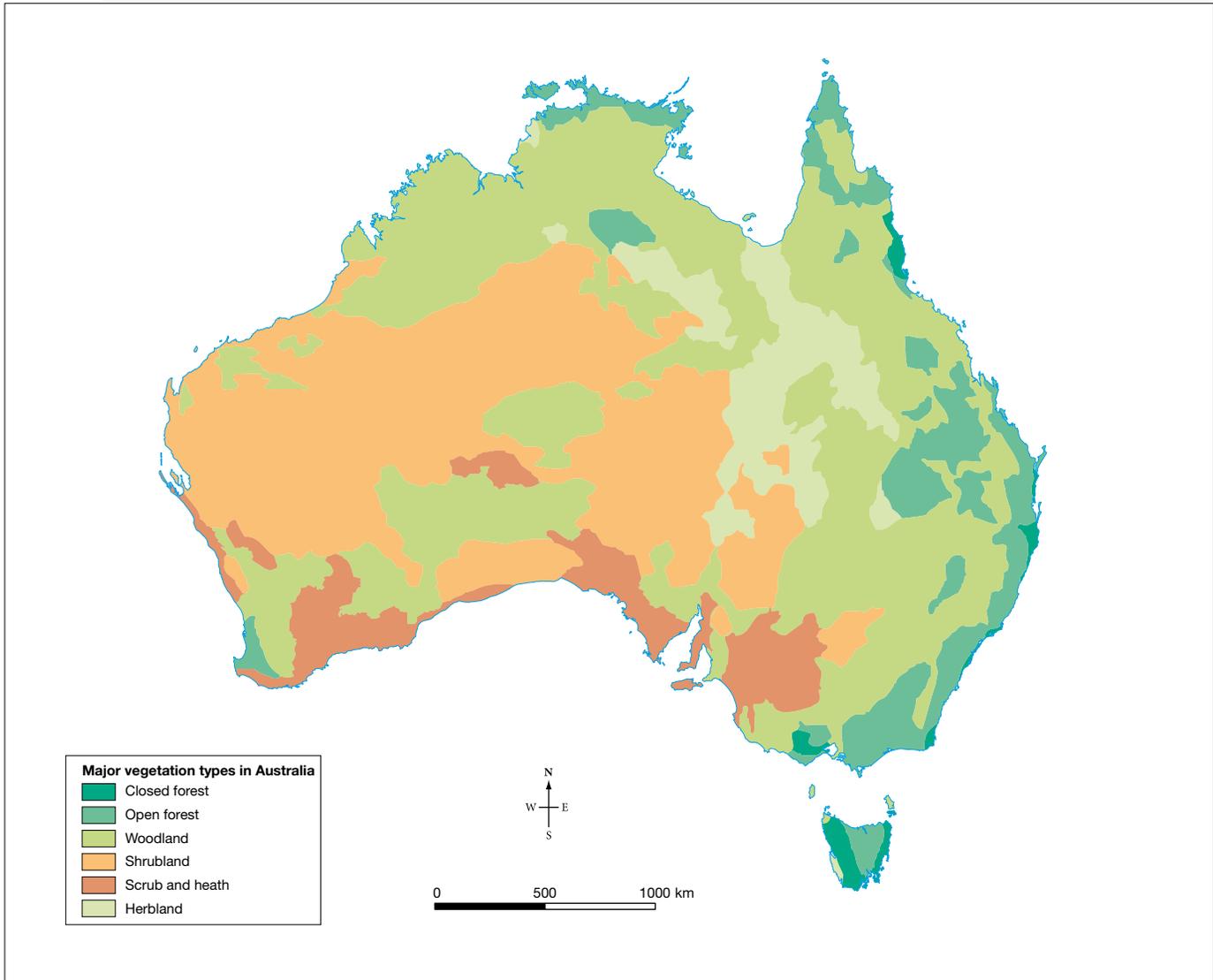
STEP 1

Identify and carefully read the title of the map because it will provide you with an understanding of the information you can expect to see on the map. Sometimes the title tells you the date of the information that has been mapped. This map has a title that tells us that it is a map of Australia showing major vegetation types. The colours in the key help us to understand the distribution of vegetation.

STEP 2

Next, examine the key. We notice that closed forest is found in about half the area of Tasmania, small linear coastal tracts along parts of the east coast of mainland Australia and in the Otway region of Victoria. We could make a similar detailed description of open forest. Looking at the pattern of forests overall we conclude that only a small area of Australia is forested — less than 10 per cent.

FIGURE 3 Major vegetation types in Australia



Source: Map taken from <http://www.anbg.gov.au/aust-veg/veg-map.html>. Reproduced with permission from Sydney University Press

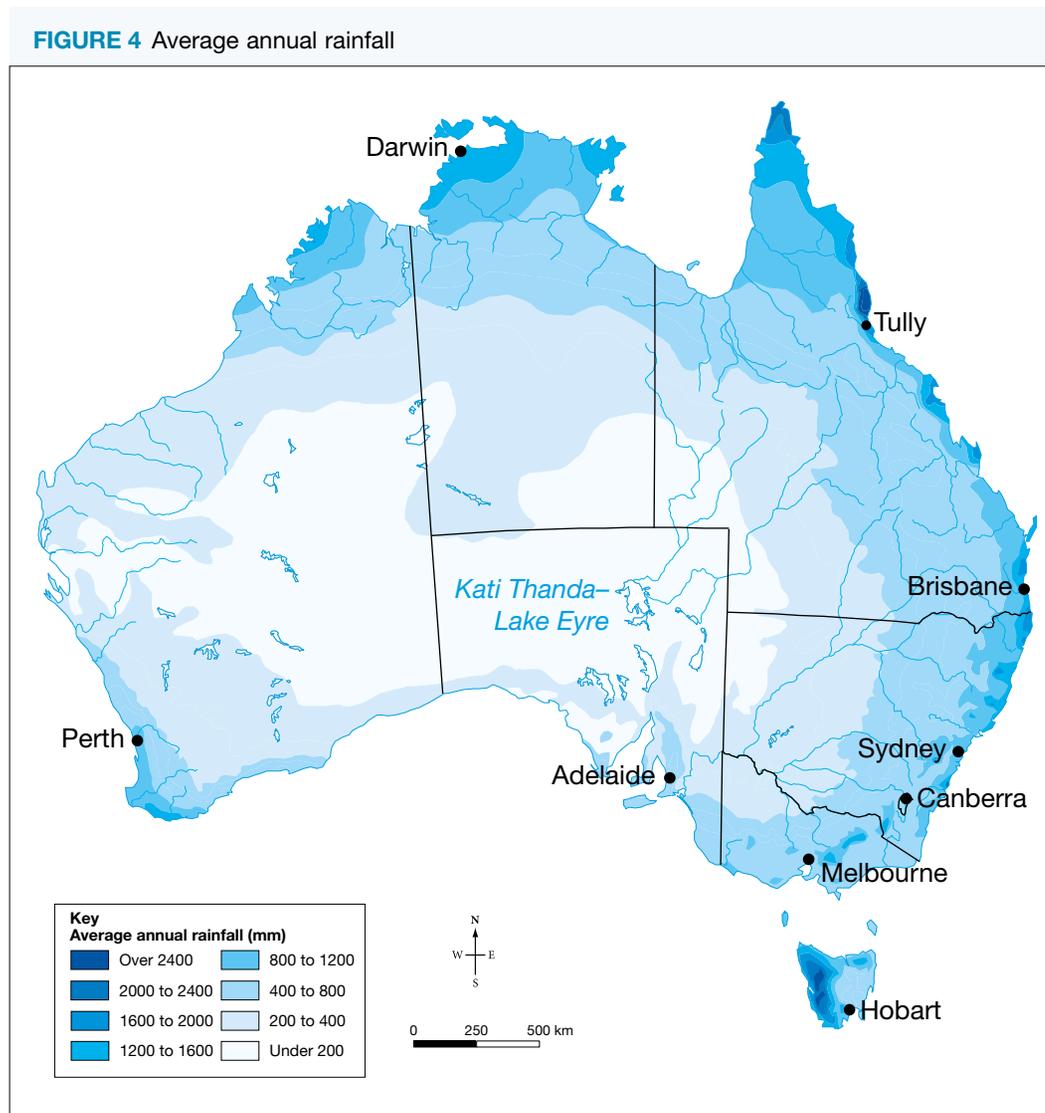
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 Watch this eLesson: How to read a map (eles-1634)

9.5.3 Let me do it

Developing my skills

Describe the map of Australia's average annual rainfall (figure 4).



Questions

1. What is the average annual rainfall of Cairns?
2. What is the average annual rainfall of Australia's state capital cities?
3. Describe the area of Australia that receives less than 300 mm of annual rainfall.
4. Describe the distribution of the wettest areas in Australia.
5. Compare figure 3 and figure 4.
 - (a) What types of vegetation are found in the area of Australia that receives less than 300 mm of annual rainfall?
 - (b) What is the relationship between high annual rainfall and closed forest?

Checklist

I have:

- understood the title
- examined all of the parts of the map: key, source, scale, and any annotations and accompanying text
- considered the map as a whole.

Skills questions

1. The person who draws a map is called:
 - (a) an artist
 - (b) a knight
 - (c) an aerial photographer
 - (d) a cartographer.
2. A map can include information about:
 - (a) biophysical features such as vegetation
 - (b) human features such as industrial areas
 - (c) people's perceptions of places
 - (d) all of the above.
3. Why do cartographers use blue to represent water including lakes, oceans and rivers?
4. Why might it be important to draw small symbols on a map?

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Try out this Interactivity: How to read a map (int-3130)

9.7 SkillBuilder: Drawing a line graph

9.7.1 Tell me

What is a line graph?

A line graph displays information as a series of points on a graph that are joined to form a line. A line graph can be drawn by hand or by using a spreadsheet program such as Excel.

Why are line graphs useful?

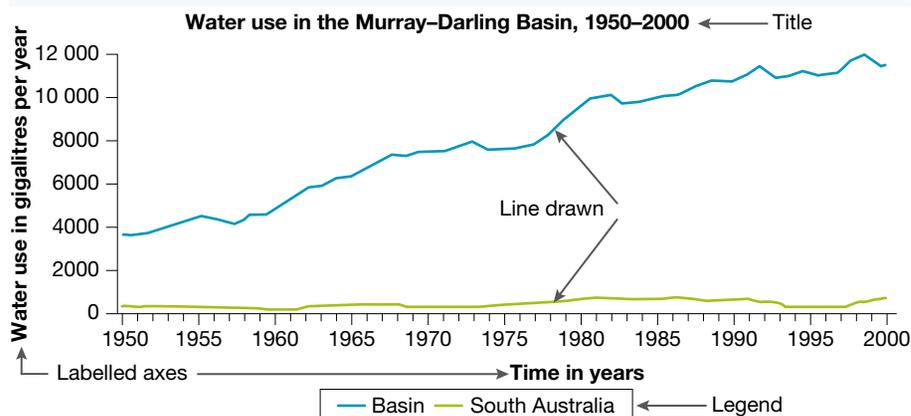
Line graphs are very useful to show change over time. They can show a single set of data, or they can show multiple sets based on a common theme such as water use in the Murray–Darling Basin compared to water use in South Australia (see figure 1). This enables us to compare similarities and differences between two sets of data at a glance.

Model

A good line graph has:

- been drawn in pencil
- an appropriate scale to show the data clearly
- labelled axes
- used small dots joined by a line to make a smooth curve
- a legend, if necessary
- a clear and accurate title that explains the purpose of the graph
- the source of the data.

FIGURE 1 Water use in the Murray–Darling Basin



Source: © Department of Environment, Water and Natural Resources, South Australia Government ← Source

9.7.2 Show me

How to complete a line graph

You will need:

- data (table 1)
- graph paper
- a pencil
- a ruler.

TABLE 1 Use of rainwater tanks by household, 2001–2010

Year	Use of rainwater tanks by household (%)
2001	16
2004	17
2007	19
2010	26

Source: © Australian Bureau of Statistics

Procedure:

STEP 1

Select the data you wish to compare or interpret.

Draw a horizontal and vertical axis using a ruler.

Evenly space and then label the years along the horizontal axis. Look carefully at your range of data and work out appropriate increments for the vertical axis, then evenly space and label this information on the axis. Start at zero where the axes join.

STEP 2

Label the X and Y axes.

Plot the statistics. Draw a dot at the point where the year on the horizontal axis meets the relevant position on the vertical axis. Once you have plotted all the statistics, join the dots. This can be done freehand or using a ruler.

STEP 3

Add a title and a source to the graph.



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Watch this eLesson: Drawing a line graph (eles-1635)

9.7.3 Let me do it

Developing my skills

Use the data in table 2 to create a line graph.

Questions

1. In which year is water consumption lowest?
2. Describe the pattern shown by the graph.
3. What reasons might explain the changes from 2001 and 2009?
4. When water restrictions were lifted in 2011, predict what happened to water consumption.
5. If the government made every household adopt water saving measures in 2020, what might happen to water consumption?
6. Find statistics for water consumption for your area and compare these to another area.
7. Explain how useful the graph was in helping you understand the changes that occurred to water consumption in South Australia compared to reading a table of figures.

Checklist

I have:

- labelled the axes
- provided a clear title and source
- plotted the data accurately
- joined the points with a smooth line.

TABLE 2 Daily residential water consumption for South Australia

Year	Daily residential water consumption (litres)
2001	539
2002	502
2003	532
2004	460
2005	465
2006	440
2007	413
2008	410
2009	395

Source: SA Water, Annual Reports

Skills questions

1. The increments on the vertical axis of a line graph should:
 - (a) be unevenly spaced
 - (b) be evenly spaced
 - (c) start with the lowest figure to be plotted
 - (d) all of the above.
2. Which statement about line graphs is true?
 - (a) You do not need to state the source of data.
 - (b) Time should always be shown on the vertical axis.
 - (c) Line graphs are useful to show where things are located.
 - (d) A clear title is essential so that the reader can understand the data presented.
3. Explain why drawing a line graph is useful.
4. Why is it important to label the vertical axis?

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 **Try out this interactivity:** Drawing a line graph (int-3131)

9.8 How is water used by indigenous peoples?

9.8.1 World indigenous cultures

Water is very important to both indigenous and non-indigenous peoples across the world, and is used for many different purposes. Water has a spiritual importance to the different indigenous peoples around the world and many groups have strong connections with the natural world.

Below is an extract from the Indigenous Peoples Kyoto Water Declaration, which shows the importance of water. This declaration was put together in 2003 at the Third World Water Forum held in Kyoto, Japan.

We, the indigenous peoples from all parts of the world... reaffirm our relationship to Mother Earth and responsibility to future generations to... speak for the protection of water. We were placed in a sacred manner on this earth, each in our own sacred and traditional lands and territories... to care for water.

Source: www.waterculture.org/KyotoDeclaration.html

9.8.2 Aboriginal and Torres Strait Islander peoples

Depending on where Aboriginal and Torres Strait Islander peoples lived, they collected surface water from creeks, rivers and waterholes; from underground water supplies such as soaks and springs; or directly from plants, including tree roots.

Recently, evidence collected from oral histories, Dreaming Stories, rock art, artefacts, ceremonial body painting and historical records left by colonists, missionaries, surveyors, invaders and explorers shows that Aboriginal and Torres Strait Islander peoples managed their water carefully. They channelled and filtered their water, covering it to keep it clean and to stop it from evaporating. They also created wells and tunnel reservoirs.

Indigenous seasons are closely linked to water. Use the **Miriwoong seasonal calendar** weblink in the Resources tab to see an example of one Indigenous calendar where seasons, water and activities are closely linked.

9.8.3 Water and Indigenous culture

Our cultural values of water are part of our law, our traditional owner responsibilities, our history and our everyday lives. Our [Anmatyerr] law has always provided for the values we place on water. Australian law should respect Anmatyerr Law so we can share responsibility for looking after water.

Source: The Anmatyerr people, in Rea, Dr N. & Anmatyerr Water Project Team 2008, 'Provision for cultural values in water management: the Anmatyerr story', *Land & Water Australia Final Report*, p. vi.

The rainbow serpent is a key symbol of creation but its journey from underground to the surface also represents groundwater rising to the top via springs. The creation of water sources and where to find them was often told in stories or through artwork. The Dreaming Story *How the Water Got to the Plains* is one story that describes how billabongs appeared in the dry inland plains. Use the **How the water got to the plains** weblink in the Resources tab to hear the story told by Butchulla elder Olga Miller.

FIGURE 1 Water is a strong symbol in Indigenous art.



An Aboriginal water project

On 30 March 2008, the Victorian Government returned the heritage-listed Lake Condah in Victoria to the Gunditjmarra traditional owners. Lake Condah is considered one of Australia's earliest and largest aquaculture ventures. Aquaculture is the growing and harvesting of animals and plants in a water environment. The Gunditjmarra people want to preserve their culture while engaging in tourism, water restoration and sustainability projects. One example is the plan to restore the ancient stone aquaculture system at the lake for eel farming.

FIGURE 2 Location map of Lake Condah



Source: Spatial Vision

9.8 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. From what sources did Indigenous Australian peoples collect water?
2. What is aquaculture?

Explain

3. What does evidence show about Aboriginal and Torres Strait Islander peoples managing water supplies?

Discover

4. Use the **Miriwoong seasonal calendar** weblink in the Resources tab to learn more about water seasons and food. How is water closely associated with Aboriginal activities in this region?

5. Look at the Miriwoong interactive calendar.
 - (a) Which Australian region does this calendar represent?
 - (b) How are the seasons divided? How does this compare with a European calendar?
 - (c) How are seasons and water linked in this calendar?
 - (d) How can all Australians benefit from the Aboriginal and Torres Strait Islander peoples' knowledge and practices on seasons and water use in a regional context?
6. Use Google Earth to locate the Wabma Kadarbu Mound Springs Conservation Park. Place a pin on this location. Now zoom in and out to help you complete the following.
 - (a) Where is this park located in South Australia? Where is this **place** in relation to where you live? Use distance and direction in your answer.
 - (b) What is the name of the nearest road?
 - (c) Describe the surrounding area.
 - (d) Why would these springs be so important to Indigenous Australian peoples and European colonists?
 - (e) Do some research to find out why these springs are protected today.
 - (f) Use Google Maps to annotate this area with your findings. Include photos that you find using the internet.

Think

7. Use the **How the water got to the plains** weblink in the Resources tab to listen to the Dreaming Story. How is Indigenous culture closely tied in with **place** and **environment**?

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Explore more with these weblinks: Miriwoong seasonal calendar, How the water got to the plains

9.14 Review

9.14.1 Review

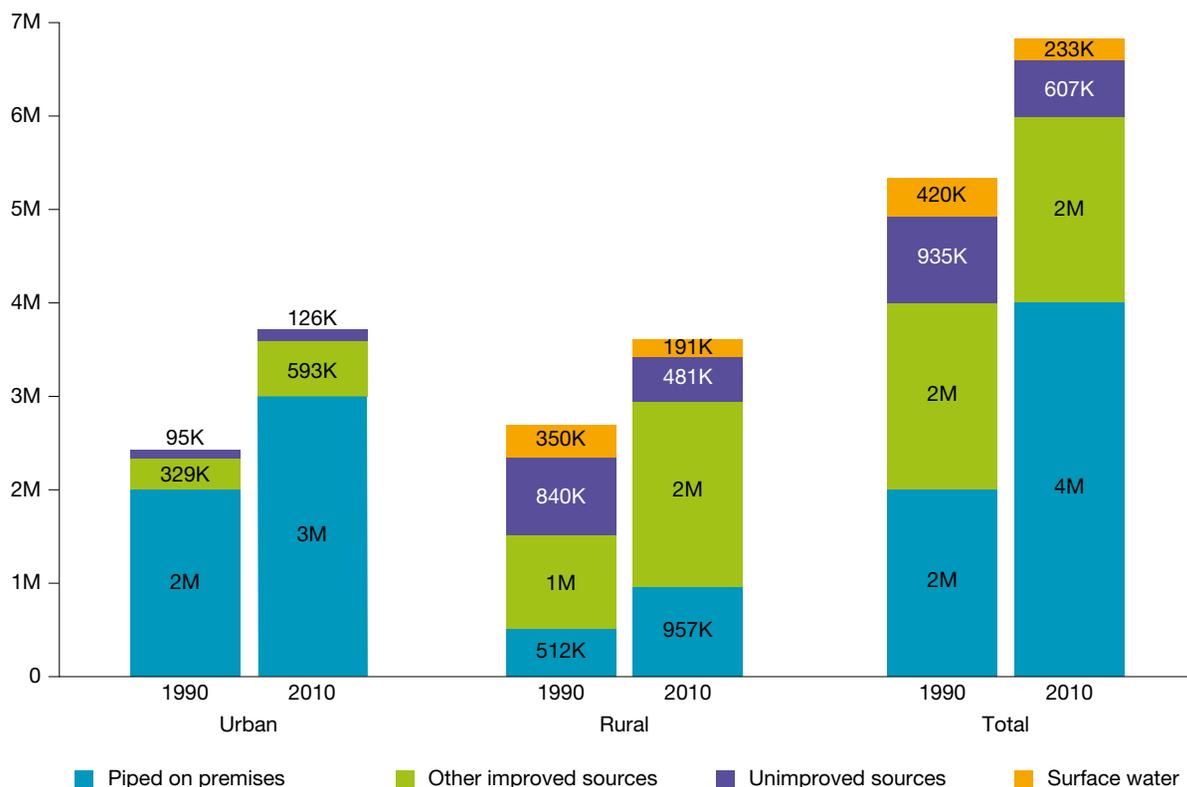
Water as a renewable resource

1. Use the phrase ‘Freshwater: lifeblood of the planet’ to explain why water is considered a finite and precious resource.
2. How do rainfall and run-off contribute to the amount of water Australia has to use?
3. List the three most interesting water facts you have learned in this chapter.
4. China has 22 per cent of the world’s population but only seven per cent of all freshwater run-off. Use this fact to outline the problem of population pressures on water supplies.
5. What is the difference between water scarcity and water stress? Name three countries, each from a different continent, facing water stress.
6. Use a diagram to describe and explain the water cycle (see figure 1 in subtopic 8.7 ‘Is water a renewable resource?’). How does this reinforce that water is a finite but renewable resource?

Water use by people

7. Which activity uses the highest amount of water in most countries including Australia?
8. ‘As world population increases, we are going to have to produce more food with less water.’ Do you agree or disagree with this statement? Justify this by using examples from this topic.
9. Study the graph in figure 1.

FIGURE 1 Global population with access to drinking water

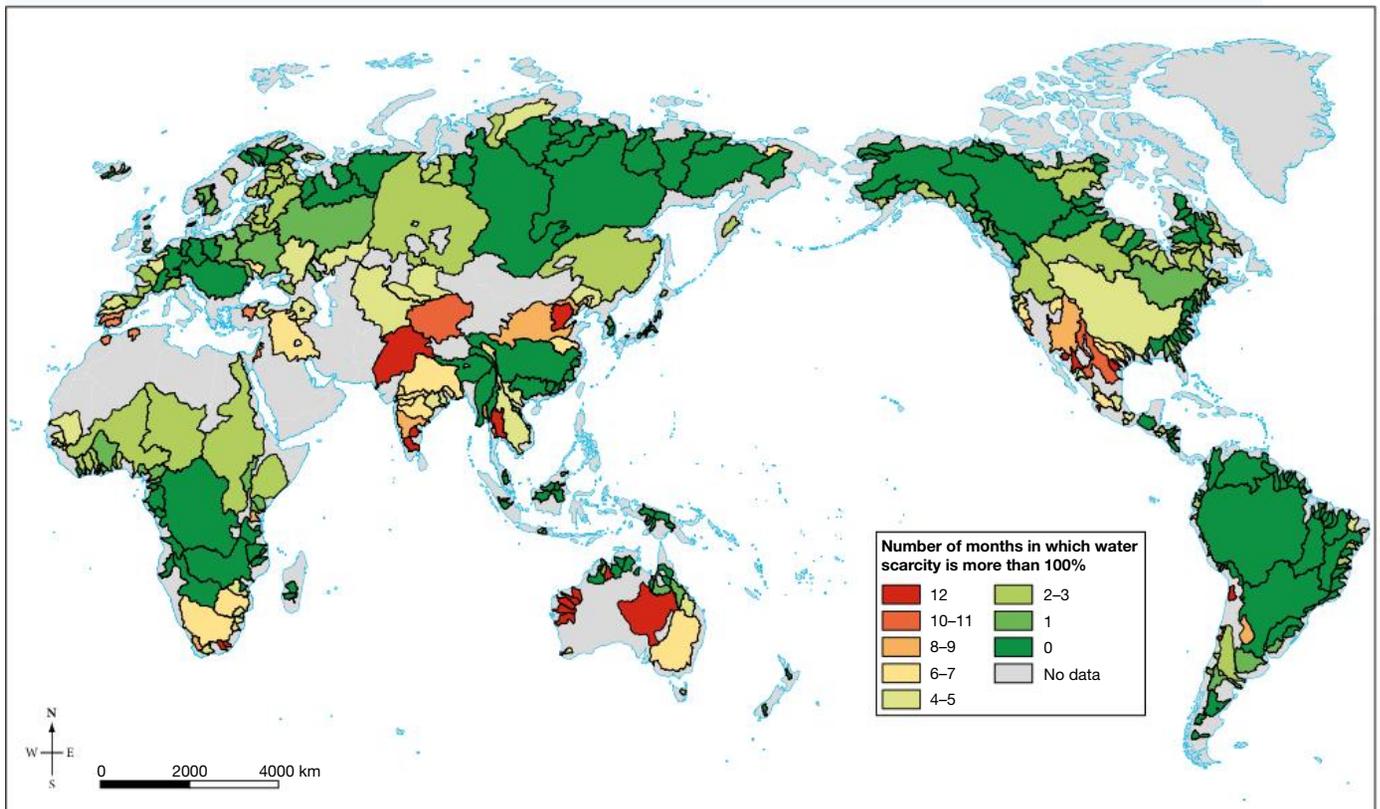


- (a) What does this graph tell you about the number of people in the world who have access to drinking water?
 - (b) Compare this to figure 3 in subtopic 9.10 'How does access to water improve health?'. What information does the map provide that the graph does not?
 - (c) Which countries are not doing so well with this MDG target?
10. What is virtual water?
 11. Name two agricultural goods that take a lot of water to produce and two that take the least.
 12. Explain the difference between virtual water and a water footprint. Does Australia have a large water footprint? Compare Australia with three other countries.

9.14.2 Reflect

13. Study the map in figure 2.

FIGURE 2 Global water scarcity. A scarcity of 100 per cent means that all the available blue water has been consumed.



Source: Hoekstra, A.Y. and Mekonnen, M.M. 2011, 'Global water scarcity: monthly blue water footprint compared to blue water availability for the world's major river basins', Value of Water Research Report Series No. 53, UNESCO-IHE, Delft, the Netherlands

- (a) Name two regions that experienced the greatest water scarcity.
- (b) Name three regions that did not suffer water scarcity. How do you account for this? Use an atlas map of rainfall to help you.
- (c) Describe the relationship between water scarcity and rainfall. What other factors increase water scarcity?

14. Study the data in table 1.

TABLE 1 Countries depending on river inflow from other countries for more than half their renewable water

Country	Renewable water supplies originating outside border (%)	Years required for population to double at current rate
Egypt	97	30.1
Netherlands	89	138.6
Cambodia	82	27.7
Syria	79	18.2
Sudan	77	22.4
Iraq	66	18.7

- Draw a bar graph to show this data.
 - Use an atlas to locate these countries. In each case, name the river that flows through this and other countries. Name the other countries that also share this river water.
 - Explain how this situation could cause conflict.
 - Make predictions for each country in terms of population growth and water supply.
15. Water has been described as one of the biggest issues facing the world. Do you agree with this? Use examples from this topic to justify your view.

UNIT 4

PLACE AND LIVEABILITY

- 10** Where do Australians live? 185
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TOPIC 10

Where do Australians live?

10.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

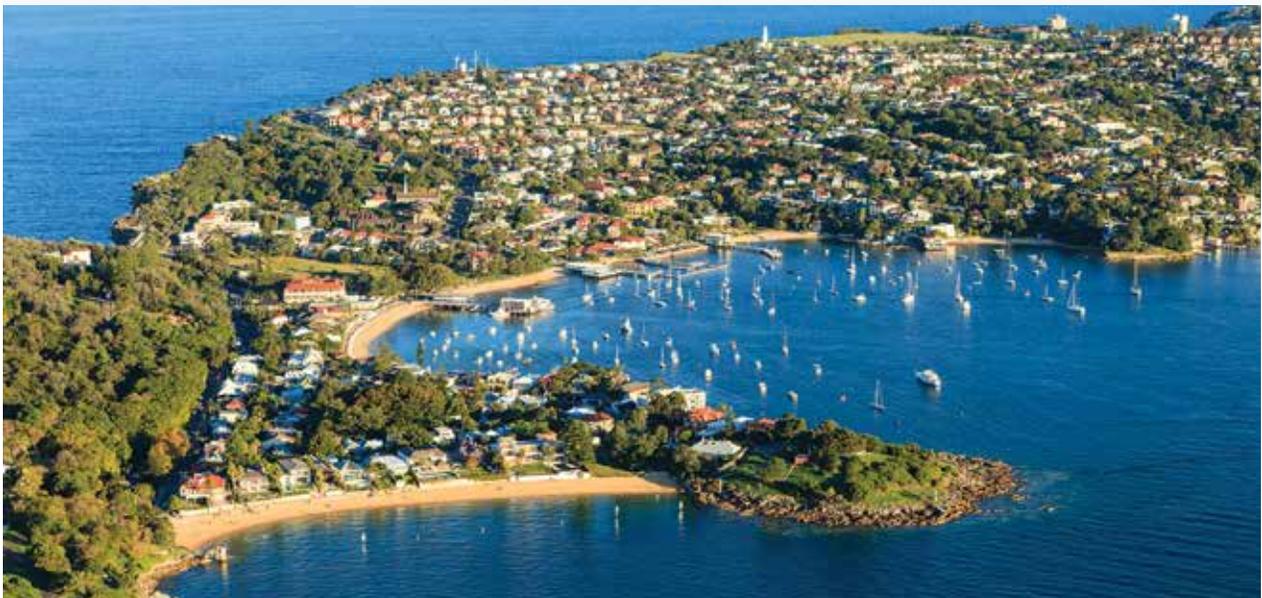
10.1.1 Introduction

Why does your family live in the place, state, city, street or house that it does? Why do many Australians live in big cities near the coast? Have you thought about the reasons why your parents selected the place or environment in which you now live? People living in Australia have been making choices about where to live for many thousands of years. Has the region of Australia around Port Jackson in modern Sydney always been the most heavily populated part of Australia? Do people choose to live in places they feel are the most liveable? Let's try to work out why Australians choose to live in the places they do.

Starter questions

1. If you could live anywhere in the world, where would it be and why?
2. If your answer to question 1 is not in Australia, which part of Australia do you think is the most similar to the **place** you chose?
3. What are the geographic features of the place you would ideally like to live in? Geographic features can usually be mapped, and include climate, landscape, **environment** (either built or natural), jobs, culture, infrastructure, wealth and safety. Find an image of this **place** and annotate its geographic features.
4. Look at the image on this page. List the positive and negative aspects of living in this **place**.

Would you like to live here?



INQUIRY SEQUENCE

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 Watch this eLesson: Choosing a place to live (eles-1619)

10.2 What creates a sense of place?

10.2.1 A sense of place

Places are central to the study of geography. This is because geographers are interested in where things are found on Earth and why they are there. But what exactly is a place?

To understand what a place is, think about **location** and **region**. Each place has a unique identity that makes it different from other places. A combination of characteristics is specific to that place, making it individual. A sense of place comes from being aware of what makes that location significant and seeing its special qualities.

The characteristics of a place can come from:

1. natural features
2. human features — that is, built by people
3. a combination of the two.

Eventually, one or more of these features becomes a symbol of that place in people's minds.

FIGURE 1 The Taj Mahal in Agra, India



FIGURE 2 The Grand Canyon, Utah, United States



FIGURE 3 Rio de Janeiro, taken from a helicopter, showing the Corcovado in the foreground with the statue of Christ on it and Sugarloaf Mountain, or Pao de Acucar, in the background, to the right



FIGURE 4 Disney World, Orlando, Florida, United States



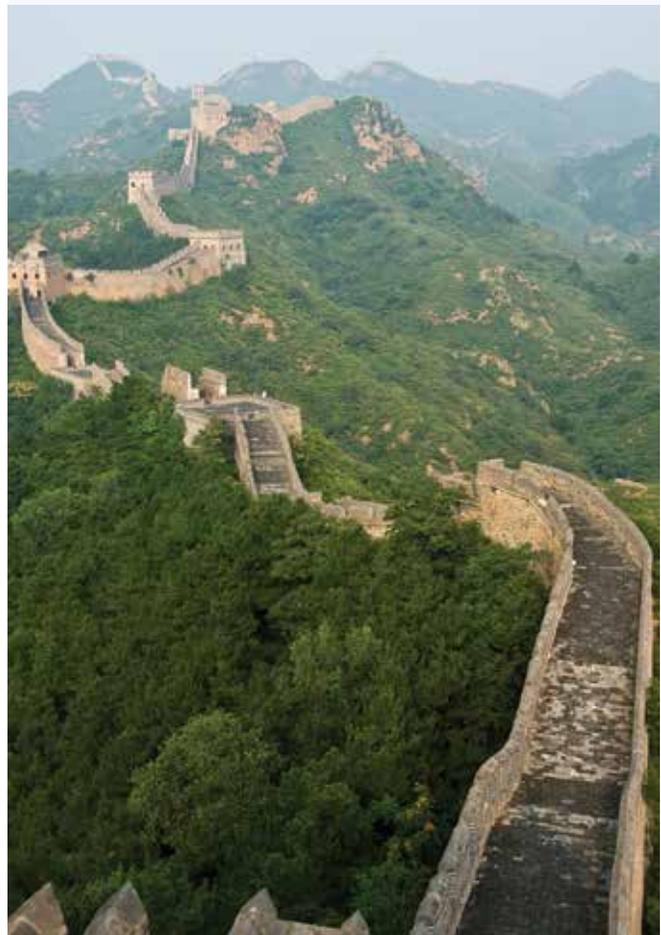
FIGURE 5 Table Mountain, Cape Town, South Africa



FIGURE 6 The Golden Gate Bridge, San Francisco Bay, United States



FIGURE 7 The Great Wall of China



10.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Study figures 1, 2, 3, 4, 5, 6 and 7. Describe five characteristics in the **environment** of each feature that create its individual sense of **place**. Consider natural as well as human features.
2. Of all these characteristics, which one do you believe to be the most important in creating an identity for that **place** in the minds of people?
3. Suggest reasons why these places have become famous around the world.

Discover

4. (a) Conduct a survey of your class to find out each person's top five favourite **places** in Australia. Collate the results in a table like the one below.

Place	Student A	Student B	Student C
Great Barrier Reef	✓		✓
Uluru		✓	✓
My grandparents' farm near Ballina, NSW		✓	

This table could also be set up electronically, using a spreadsheet program.

- (b) Graph the results to show the ranking of the **places** by percentage of the class; for example, 45 per cent of the class named Uluru in their top five **places** in Australia.
- (c) As a class, discuss the patterns shown by the graph. Suggest reasons to explain why people like or dislike certain **places**.

Think

5. Do you think that people's top five favourite **places** would vary with the age of the individual? Explain your answer. (You might need to interview a few people of different ages to help you work out an answer to this.)
6. No matter where we live, we all live in the one **place**: Planet Earth. From what you have learned so far, define what a **place** is in your own words. What do you think would be the characteristics of a **place** that would appeal to anyone, wherever they come from? (*Hint:* What feelings do you have when you are in a **place** that you like?)



Deepen your understanding of this topic with related case studies and questions.
📍 New York



10.3 Why do people live in certain places?

10.3.1 Push and pull

People choose to live in specific places for a wide range of reasons. These reasons can be broadly divided into **pull factors** and **push factors**. The combination of reasons varies from person to person, and what is an advantage for one person may be seen as a negative by someone else.

It is also true, though, that the reasons people choose to live in a place often change over time. Sometimes, these reasons might even be connected to the very existence of the place — or its changing nature.

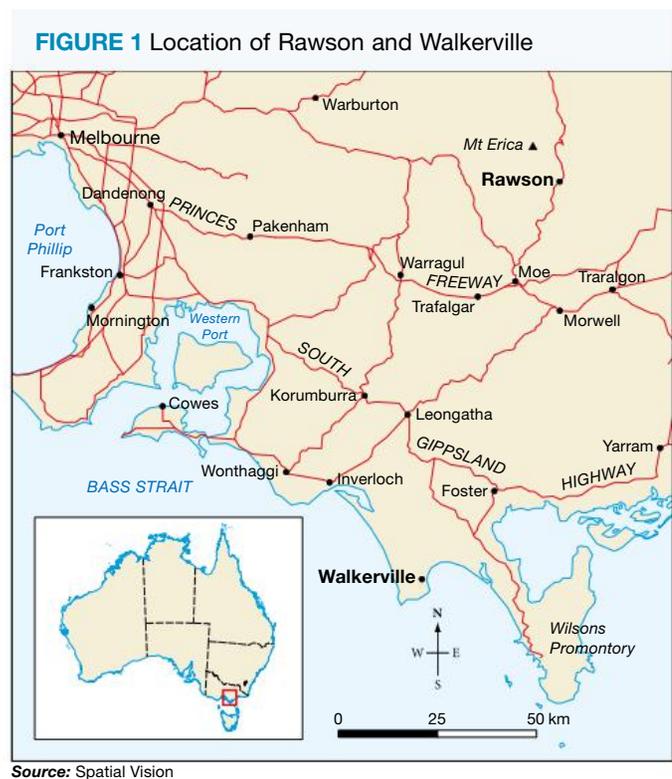
There are four factors that influence the liveability of places or why people decide to live there:

1. available resources (money)
2. employment

3. relationships with other people (for example, wanting to be near family or moving for a partner's job)
4. lifestyle.

Many of these factors change throughout a person's life. For example, where a 20-year-old single person wants to live is often quite different from where someone in their forties, or someone with a partner and two teenage children, may want to live.

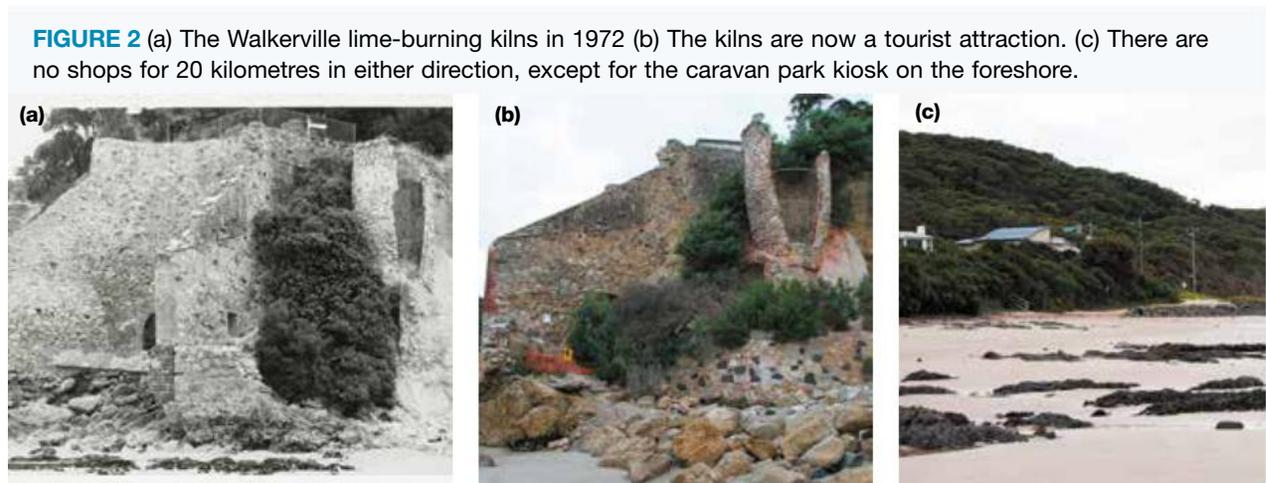
In other situations, the reason for living in a place may disappear. The town of Rawson, near Mt Erica in Victoria, was built for the people building the Thomson Dam in the 1970s and early 1980s (see figure 1). After the project was finished in 1983, nearly every family left the town because there was no longer any work there. Its **community** identity had to change. The few people left in Rawson now provide services for people using the area for recreations such as bushwalking and skiing.



Walkerville is a small coastal settlement on the coast of Victoria, just east of Inverloch and Venus Bay near Wilsons Promontory (see figure 1). Walkerville is a good example of the way people's reasons for living in a place can change over time.

Walkerville was built to provide a place for the workers who were to produce quicklime from the limestone cliffs. Cement was in great demand for building in Melbourne at this time, and lime could be transported there easily by ship. The town itself disappeared when the limestone cliffs were all mined out.

The modern settlement of Walkerville is now a small, isolated holiday location, popular with fishermen, and located next to the Cape Liptrap Coastal Park. Much of the original settlement of Walkerville no longer exists, but the ruins that remain, along with the old cemetery, give us a good picture of what the place used to be like (see figure 2).



Many of the towns in the north-eastern United States were established as manufacturing towns. At first they were located near major ports or iron ore and coal deposits, and some closed down when these resources ran out. In more recent times, factories such as the one shown in figure 3, which is near Baltimore, have closed down because the owners could no longer compete with the goods produced at a lower cost in China and other south-east Asian countries. With no other jobs available, people left the area, which has fallen into a state of **urban decay**.

FIGURE 3 A disused factory near Baltimore



10.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Think

1. Study figure 2 (c) and research the **changes** over **time** that have occurred in Walkerville as a **place**. Was the decline of the original township of Walkerville due to push or pull factors? How did these influence people's choice of where they would live? Justify your answer.
2. Identify and justify the push and pull factors that exist for people thinking about whether they should move to Walkerville today.
3. In groups of three, discuss the difficulties that would have been faced by the lime-burners who lived in the original settlement of Walkerville, given its **location**.

Explain

4. Study figure 3. Identify some of the specific signs that indicate an area is in urban decay.
5. Suggest reasons why some people continue to live in decaying urban **environments**, and why others might choose to move.

Discover

6. (a) Survey the members of your class and find out the reasons why their families chose to live in the **place** or **location** where they do. Classify the responses using the four categories named on this spread in a table like the one below.

Student	Resources	Employment	Relationships	Lifestyle
Gina	Near major shops	Near my dad's work		
Miguel		Near my mum's work	Close to my family who came to Australia earlier Close to my father's best friend	
Daniel				Near the sea, as we all sail or surf

- (b) Present the answers using a column graph, correctly and fully labelled.
- (c) As a class, discuss the pattern of reasons shown by the graph, and the possible explanations for this. For example, how important to people are social connections?

Predict

- Look up on Google Earth the **location** of the current settlement of Walkerville. Calculate the distance between Walkerville and the settlements around it. Study the land use and features of the environment around the settlement. Identify and list the advantages and disadvantages of Walkerville as a holiday **location**, using evidence from your Google Earth study.
- A developer has proposed to the local shire council and the state government that the farmland around Walkerville should be rezoned to allow the building of a large holiday resort. In your opinion, would this be a good or bad policy for the future of the residents of Walkerville? Give reasons for your answer, referring to features that you can identify on the Google Earth map.

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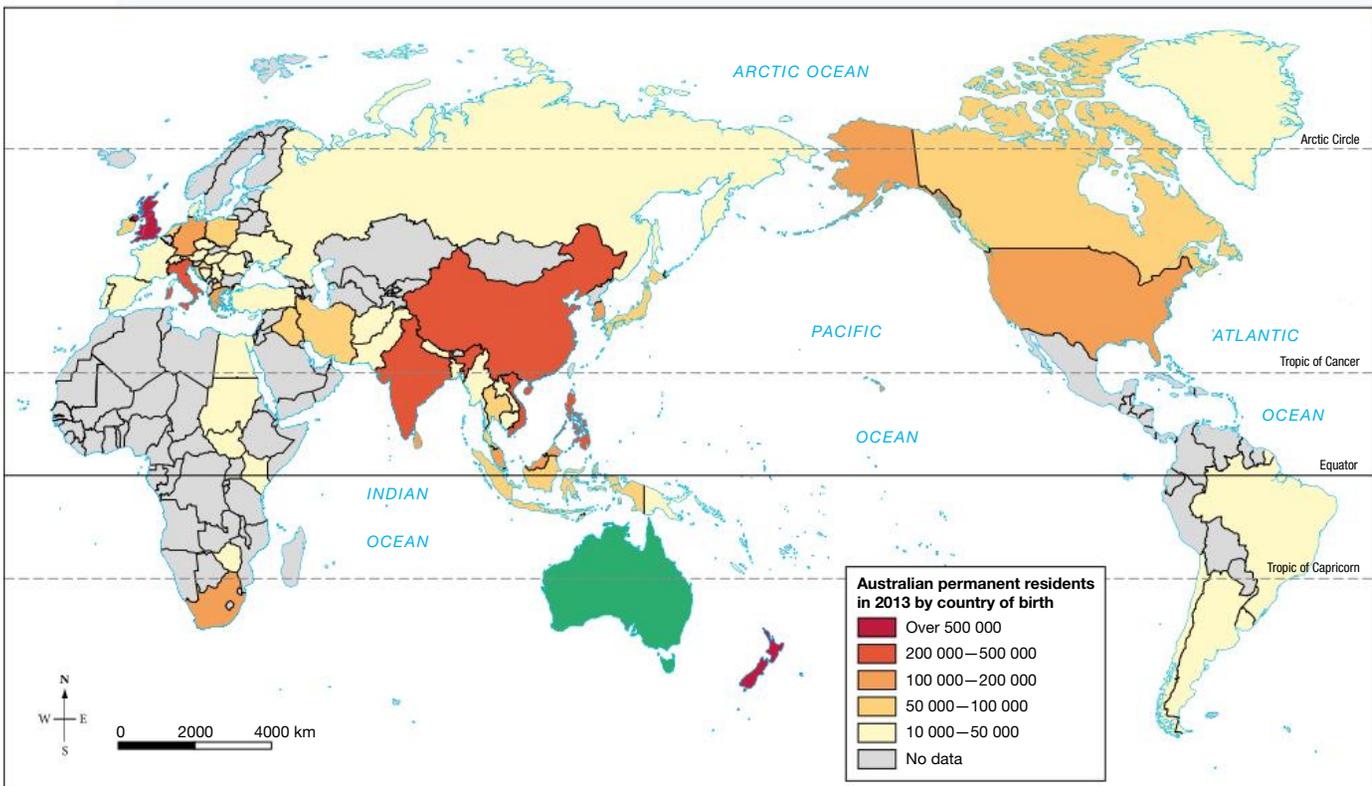
➡ Try out this interactivity: Push/pull factors (int-3089)

10.4 Where do you live and why?

10.4.1 How did I get here?

When we first learned to write our address, we often included our house number, street, town, city, state, country, continent, hemisphere, planet and universe. You could also identify your location with GPS coordinates, a grid reference or by use of latitude and longitude. Knowing the place where you are is important but so is how you got there.

FIGURE 1 Australians born overseas



Source: Spatial Vision



A *Cindy:* When I lived in Beijing I was called Jing-Wei. I came to Sydney in 1988 to study economics at university. I became an Australian citizen in 1993. I now have three Australian children.



B *Andrew:* I came to Perth with my wife and three children in 1993 just before Nelson Mandela was elected president of South Africa. We were concerned for our safety in Johannesburg and were keen to start a new life in a country with a similar climate and language. Now two of my brothers also live in Australia.



C *Lucy:* My brother moved from Palmerston North in New Zealand to Melbourne for work in 2006 and I followed him the next year. I like living in a larger city. There is more going on and I get paid a lot more. One day I might return to New Zealand.



D *Deepak:* My family moved from Delhi in 1988 when my father was offered a job in a computer company in Adelaide. There were not many Indian kids in my school but I studied hard and went to university. I now have three children and live in Newcastle.

Did you and your family arrive by boat, plane or car, or were they born here? What decisions were made by your parents or grandparents which resulted in your family living in your place, house, state, country or hemisphere? Over 25 per cent of Australia's population was born overseas, and it is estimated that most will move homes between 11 and 12 times during their lifetime.

What is your story?

Activity question 1 allows you to investigate why you live in your place. It is a task of discovery, and will take you some time to complete. Your aim is to discover your family's migration story and why you live where you do. Does your family have a recent migration story or did your family migrate with the First Fleet? Do you have Aboriginal or Torres Strait Islander heritage? Did your grandparent build the house you live in or did your parents or carers build your house? How has the place your family lives in changed over time and space?

10.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Discover

1. This task allows you to discover your family's migration story and why you live where you do.

Step 1

What can you find out for yourself?

Your place

- What is your address? Write out your full address, including your hemisphere, latitude and longitude.
- Use Google Maps or Whereis to locate and identify your house in your street. Download an aerial view and a street view of your house.
- Annotate your aerial photo or map to identify who lives in your house, including pets, and which parts of the house they use. You could illustrate the people who live in your house in a cartoon — like the stickers, or decals, of families that people put on their cars.
- Ensure that your map has a compass, approximate scale and appropriate title.

Step 2

Your neighbourhood

- Using Google Maps or Whereis, download an aerial view of your street or at least the eight closest houses or dwellings.
- Using the family decals, annotate each house to show who lives in it.

Step 3

How long have you lived at this address?

If you have previously lived somewhere else, list and map your past addresses. How many times have you moved? Share with your class the information that you have collected so far.

Step 4

How did you get here?

To investigate the rest of your story, you will need to speak to your parents and possibly your grandparents. As you collect information about where your parents and grandparents were born, create a family tree of **places**. Try to find out why and when your relatives came to Australia. Figure 2 illustrates how this may look.

- Where were your parents/carers born?
- How did they travel from where they were born to the **place** you now live?
- Why did your parents move to where you now live? Would they prefer to live in another place that is more liveable?
- Why did your grandparents and great-grandparents move from their **place** of birth?

Use the **Family tree template** weblink in the Resources tab to create your family tree.

FIGURE 2 An example of what your family tree may look like

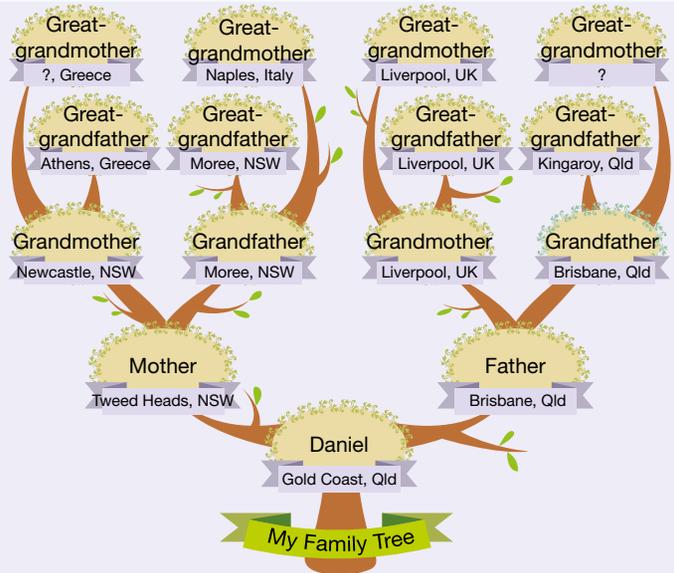


FIGURE 3 Immigrants arriving in Australia by plane, 1967



Think

2. Use your family tree, along with the transport your family used, to create a map that shows this **interconnection**.

Things to think about before starting your map:

- What **scale** and size of map will you need?
- Would you be better off having two maps? In the example shown in figure 2, Daniel's parents and grandparents mostly came from New South Wales and Queensland but most of his great-grandparents came from Europe. To map this information, he should use a world map plus a larger **scale** break-out or inset map of New South Wales and Queensland.
- How will you show the type of transport? Coloured arrows might work well.
- What is an appropriate title for your map?
- Would you like to illustrate your map with images of your relatives, their houses, flags of the countries they came from or images of the transport that they used? If you wish to add images, you will need to have a larger **scale** base map than if you just used symbols.
- You could annotate the map with the reasons your relatives moved.

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 Explore more with this weblink: Family tree template

10.5 Why do Australians live in remote places?

10.5.1 Settling inland Australia

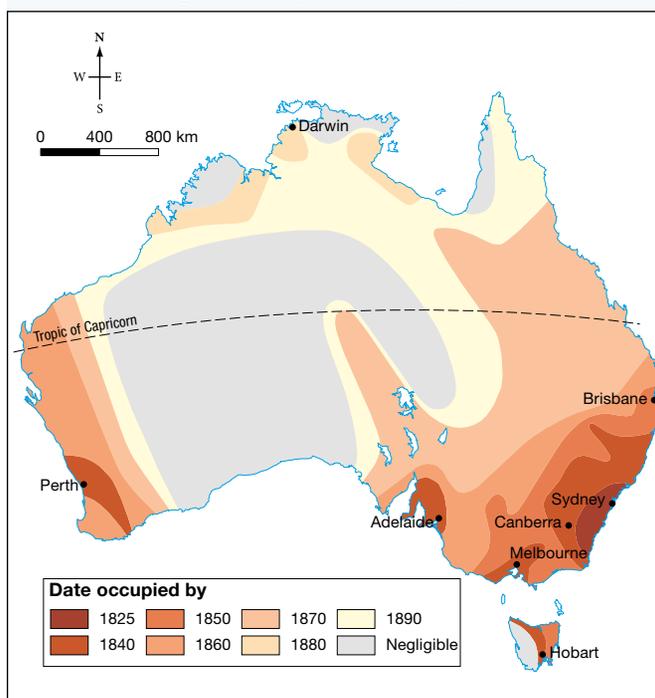
For over 100 years, a small percentage of Australians have been moving away from large cities and coastal regions to live in more **remote** locations. They are often searching for new farmland or the mineral resources of the inland. Why do some people choose to live in places where their nearest neighbour is 50 kilometres away and it takes six hours to get to the closest supermarket? Why do they find remote places more liveable?

The potential to relocate people inland has never been faster or easier. The interconnection provided by modern transport and the high speed communication provided by phone and internet should mean that technology has reduced remoteness.

The general shift of Australia's population for the last 100 years has been towards the major cities and away from the country. The average age of farmers in Australia is about 53 years and getting older. Most children of farmers leave the country and seek education and work opportunities in large cities. Figure 1 shows how quickly the inland of Australia was occupied after 1825.

Over the past 100 years, there have been many attempts by governments and private industry to encourage people to occupy the more remote places of Australia. Soldier settlement programs and mining developments are two such schemes.

FIGURE 1 Stages in European land occupation in Australia



Source: Spatial Vision

Soldier settlement schemes

After both World War I and World War II, the state and federal governments of Australia began a program of providing land to returned soldiers. This was to give these soldiers work, but it was also seen as a way of attracting people to otherwise sparsely inhabited places.

After World War I, soldier settlements included Merbein and Mortlake in Victoria, Griffith and Dorrigo in New South Wales, Murray Bridge and Kangaroo Island in South Australia and the Atherton Tableland in Queensland. The settlers were expected to stay on their land for at least five years and to improve the quality of the land they were farming. Many of these settlements were not successful because the soldiers were not always suited to farming, the farms were often too small, and farmers did not have enough money to invest in stock or equipment.

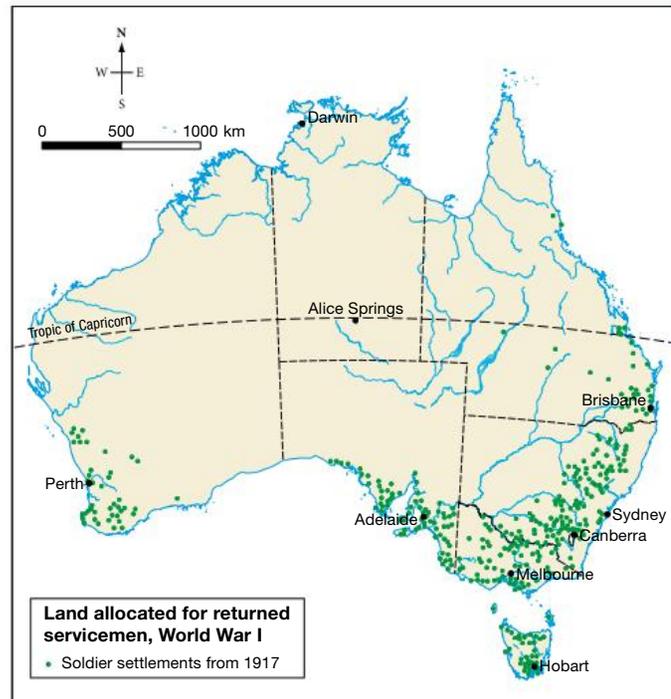
After World War II, a similar scheme was much more successful, because farms were bigger, and roads, housing and fences were supplied. Over 25 000 soldiers were resettled after World War I.

Remote mining communities

Karratha Broken Hill and Tom Price are examples of current mining towns that are just as remote as were the goldrush towns of Bathurst and Ballarat in the 1850s and 1860s.

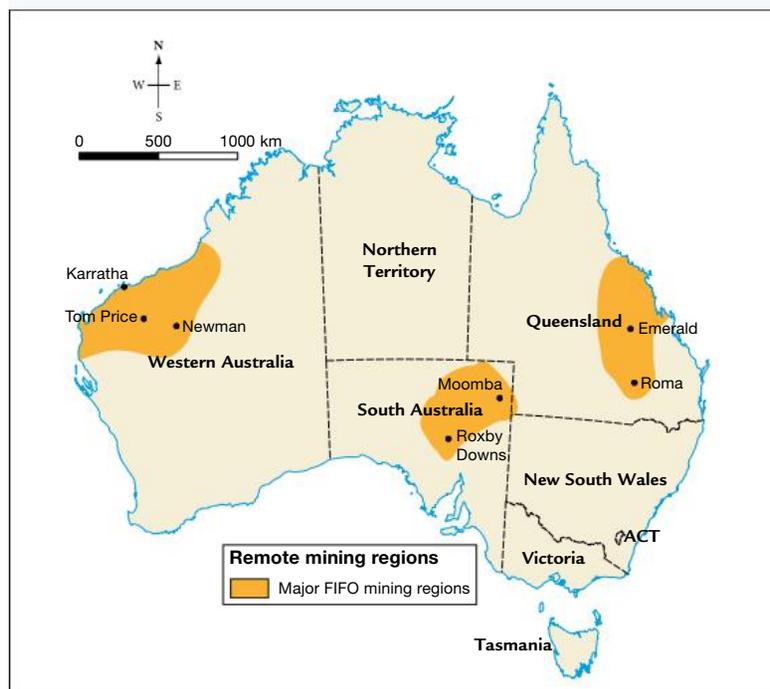
Today it takes less than five hours to fly directly from Brisbane to Tom Price, yet it can be difficult to attract workers to mines in this region. Wages are high; for example, a truck driver can earn \$150 000 per year. There are now fewer jobs because the mining boom has passed, but skilled workers are attracted to these remote places. Some workers **fly in and fly out (FIFO)** for their shifts. They live with their families in less remote places such as Brisbane and fly in for a shift that may last several weeks, eventually flying home for their days off.

FIGURE 2 Location of soldier settlement areas, 1917



Source: Spatial Vision

FIGURE 3 Location of remote mining regions



Source: Spatial Vision

FIGURE 4 Mount Tom Price mine and Tom Price township: note the FIFO workers' huts in the left foreground



10.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What makes a **place** remote?
2. How does FIFO reduce remoteness?

Explain

3. Describe the **change** in the speed of settlement of inland Australia that is illustrated by figure 1.
4. (a) Compare figure 2 with figure 1. When were the soldier settlement **places** first settled?
(b) Use your atlas to compare the location of soldier settlements with a rainfall map of Australia. Were soldier settlements located in **places** that receive good rainfall for farming?
5. The soldier settlements of 1917 were established on remote, underused land. One hundred years later, would these places still be considered remote? Refer to figures 2 and 3 in your answer.

Discover

6. Research a local soldier settlement scheme. When was it established? How successful was it? How did this scheme help to populate a remote **place**? Map its geographic features by using Google Maps. Use the **Soldier settlement** weblinks in the Resources tab to help with your research.

Predict

7. How might people be encouraged to move from the coastal fringe to the more remote **places** of Australia? What could make you or your family move or relocate? Produce a short film, snappy slide show, or an advertising campaign that highlights the pull factors which might make people **change** the **place** where they live.



Deepen your understanding of this topic with related case studies and questions.

📍 **Population of Australia**

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🧩 Try out this interactivity: Remote living (int-3090)

🔗 Explore more with these weblinks: Soldier settlement 1, Soldier settlement 2

10.6 SkillBuilder: Using topographic maps

online only

WHAT ARE TOPOGRAPHIC MAPS?

Topographic maps are a type of map that provides detailed and accurate information of features that appear on the Earth's surface.

They show features of the natural environment, such as forests and lakes, and features of human environments, such as roads and settlements. Relief is often shown using contour lines.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 Topographic map extract of Mount Gambier



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-  Watch this eLesson: Using topographic maps (eles-1641)
-  Try out this interactivity: Using topographic maps (int-3137)

10.7 What draws people to rural areas?

10.7.1 Rural settlement

Some people live in rural areas because they are involved in primary industries. Others provide services.

Griffith is a large town (population 17 000) in the Murrumbidgee Irrigation Area in New South Wales. The climate in this area is semi-**arid** (warm, with unreliable rainfall). The land became productive farmland after **irrigation** was provided in 1912. Reliable water and available farmland attracted many people to this area.

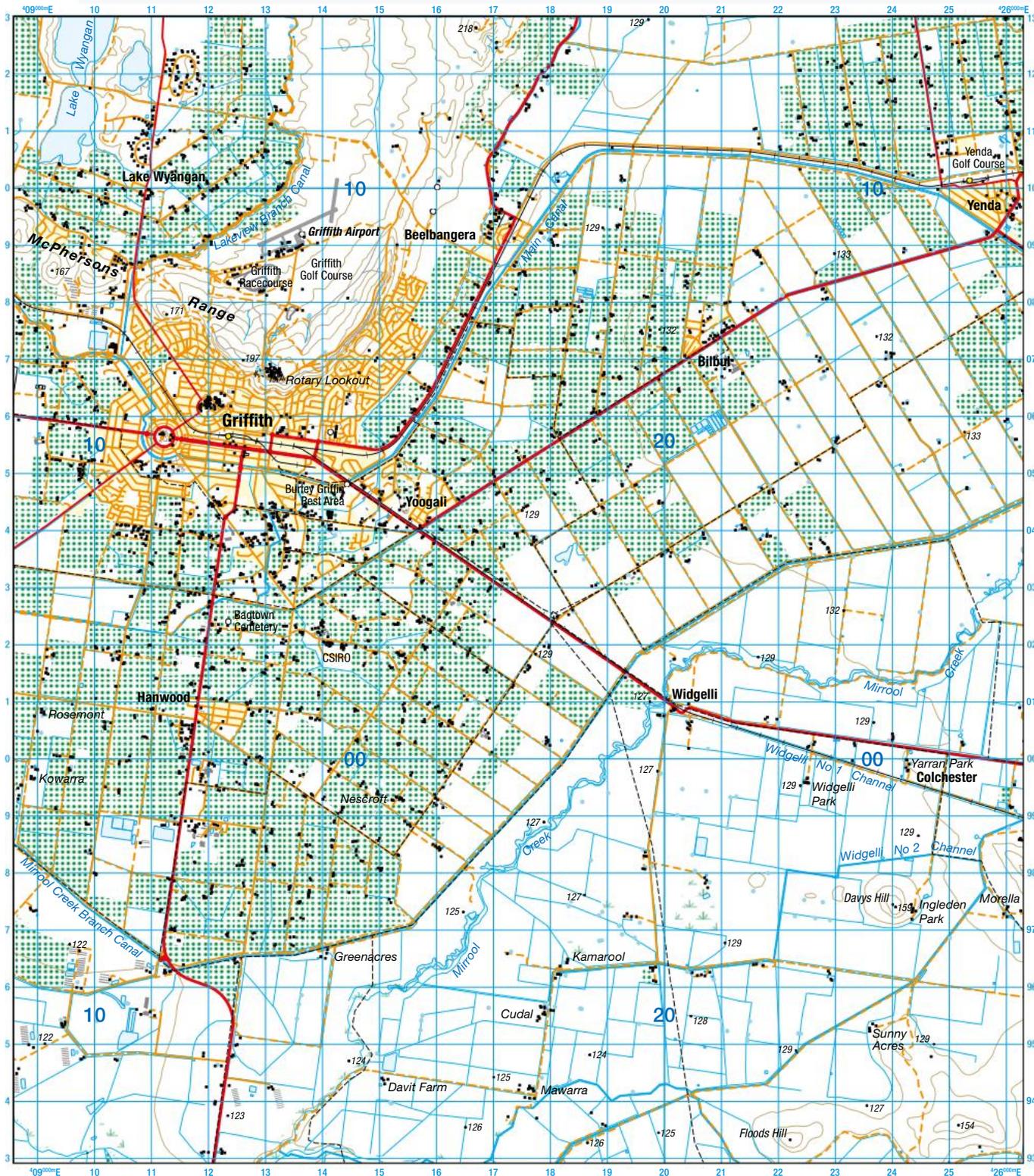
There are two main types of farm in this area.

- Type A farms are usually about 220 hectares in size (a hectare being 10 000 square metres). Each year they grow a combination of rice, corn, wheat, vegetables and pasture, and graze beef cattle. Irrigation water is usually used.
- Type B farms are **horticulture** farms, and are usually about 20 hectares in size. They grow a combination of permanent crops that may include grapes, peaches, plums, and citrus fruit such as oranges. Many of these plants last for many years, and irrigation is always needed.

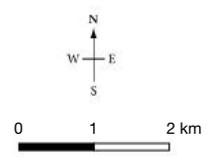
FIGURE 1 Farms in the Griffith area support businesses in the town.



FIGURE 2 Topographic map extract of Griffith



Key			
	Water area		Spot height (metres)
	Swamp		Orchard or vineyard
	Area subject to inundation		Built up area
	Watercourse or canal		Airport or runway
	Contour		Building
	Transmission line		Waterpoint
	Highway sealed		Tower
	Secondary road sealed		Landmark point
	Minor road unsealed		Railway
	Track		Railway station
	Racetrack		



Source: Spatial Vision

10.7 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

For all the following activities, refer to figure 2.

Remember

1. (a) What is the main use for farmland in the area surrounding Griffith?
(b) Sketch the symbol of this land use.
(c) Is this an example of farming type A or type B?

Explain

2. (a) Compare the pattern made by irrigation channels and natural waterways, such as Mirrool Creek.
(b) Why is irrigation useful in semi-arid areas? At what time of the year do you think it would be mainly used?
(c) How can you tell from the map that it is not hilly in the areas where there is irrigation farming?

Discover

3. (a) Imagine you travelled in a southerly direction for 2.5 kilometres from the city centre. Now select one square kilometre at this location. Count the number of buildings there are in your chosen square kilometre.
(b) Continue out from the city edge for at least another 7 kilometres. Choose another square kilometre and count the buildings in your chosen area.
(c) Compare your results. In which area would you be closer to your neighbours?
(d) Which one represents **intensive farming**?
4. There are many farms in the Griffith region, which means there are many people in the area to support shops, businesses, schools and cultural activities. However, in some parts of Australia, farms are very big and it is a long way to the nearest neighbours. Anna Creek, a beef cattle property in northern South Australia, is 24 000 square kilometres (2 400 000 hectares). The property is in a semi-arid region of South Australia, where vegetation is **sparse** and the nearest town for supplies is 170 kilometres away.
(a) Use the scale to calculate the number of square kilometres covered by the map in figure 2.
(b) How does this compare to the single farm of Anna Creek?
(c) At which location, Anna Creek or Griffith, could you most likely satisfy each of the following wishes: to play in a sport team every week, to regularly buy clothes, to collect data about lizards, to grow a lush lawn, to safely learn to drive, to have a private airstrip?

Think

5. Identify two natural factors and two human factors that might have influenced people to choose to live in the Griffith area.

10.8 Are rural communities sustainable?

Access this subtopic at www.jacplus.com.au



10.9 What are 'lifestyle' places?

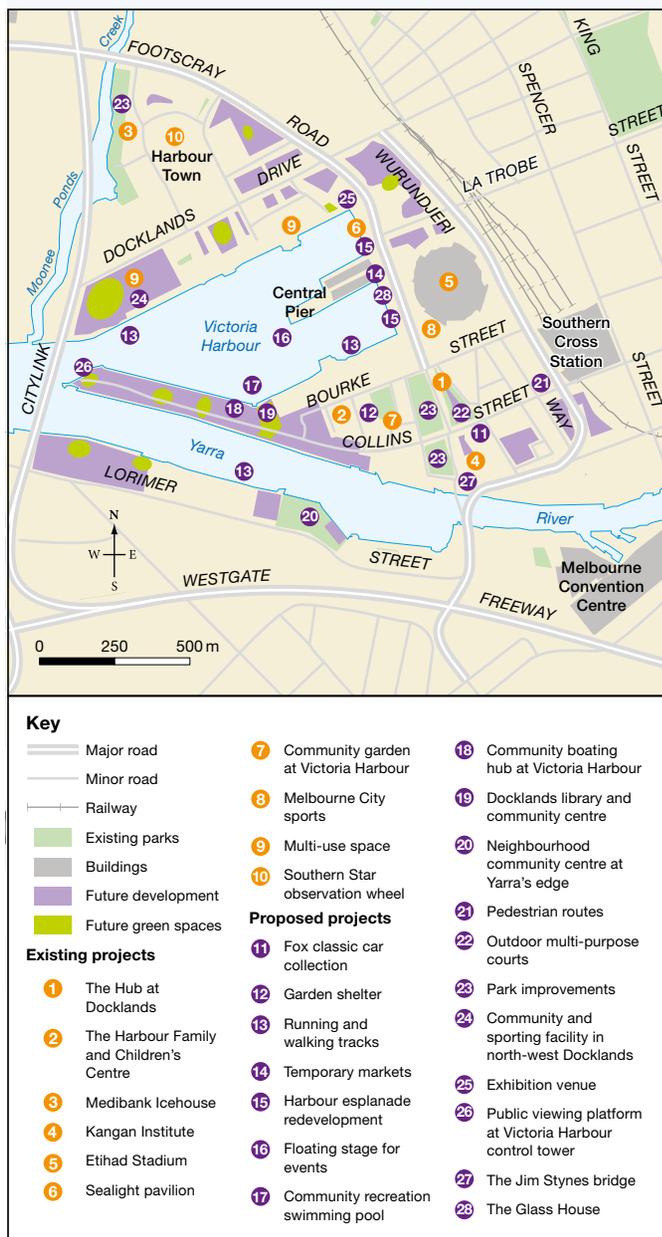
10.9.1 Lifestyle

In the years after 1990, the healthy state of the growing Australian and world economies meant that more and more people had jobs and were earning higher incomes. This gave them greater choice as to where and how they wanted to live, and the type of life that they wished to lead, because they had the resources (money) to allow them to choose.

For some people, ‘lifestyle choice’ means escaping the rush of the modern urban society by choosing a **sea change** or **tree change**. For others, it means using their new-found wealth to fulfil their wants and desires, no matter how wild. Others choose to live in inner-city areas, close to shops, cinemas, restaurants and galleries. Because of this last group of people, governments and businesses have been able to take older areas near the city centre and turn industrial zones into new activity centres where employment, residences, recreation and services can be found in the one location. Such places are in great demand by those who can afford it, particularly young professionals who want to be near the entertainment and facilities of the inner city.

For example, the Docklands development in Melbourne was designed to be the face of a new-look Melbourne: a new community identity of restaurants, entertainment and apartment living (see figure 1).

FIGURE 1 The future by 2022 and beyond: Docklands Community and Place Plan



Source: Spatial Vision

Docklands is a suburb of Melbourne, located two kilometres west of the central business district (CBD). It has a population of over 5700 people. It was planned that Docklands would be a 24-hour city for visitors and local residents. It occupies 200 hectares — an area bigger than Melbourne's central business district (which is about 175 hectares).

The local residents of this 24-hour city rely on public transport, as few have cars (see table 1). Most residents are professionals (see table 2).

TABLE 1 Number of cars per dwelling

Number of registered motor vehicles	Docklands (%)	Australia (%)
None	26.8	8.6
One motor vehicle	51.9	35.8
Two motor vehicles	16.2	36.1
Three or more vehicles	3.0	16.5
Number of motor vehicles not stated	2.0	3.0

TABLE 2 Selected occupations of people

Occupation	Docklands (%)	Australia (%)
Professionals	37.7	21.3
Managers	21.5	12.9
Community and personal service workers	6.5	9.7
Technicians and trade workers	5.7	14.2
Labourers	2.1	9.4
Machine operators and drivers	1.2	6.6

FIGURE 2 Lifestyle choices for those who have the resources (a) Modern condominiums at Canary Wharf in the centre of London — a lifestyle that has arisen from the old docks (b) The historic apartments above the shops in Mala Strana in the centre of Prague, Czech Republic

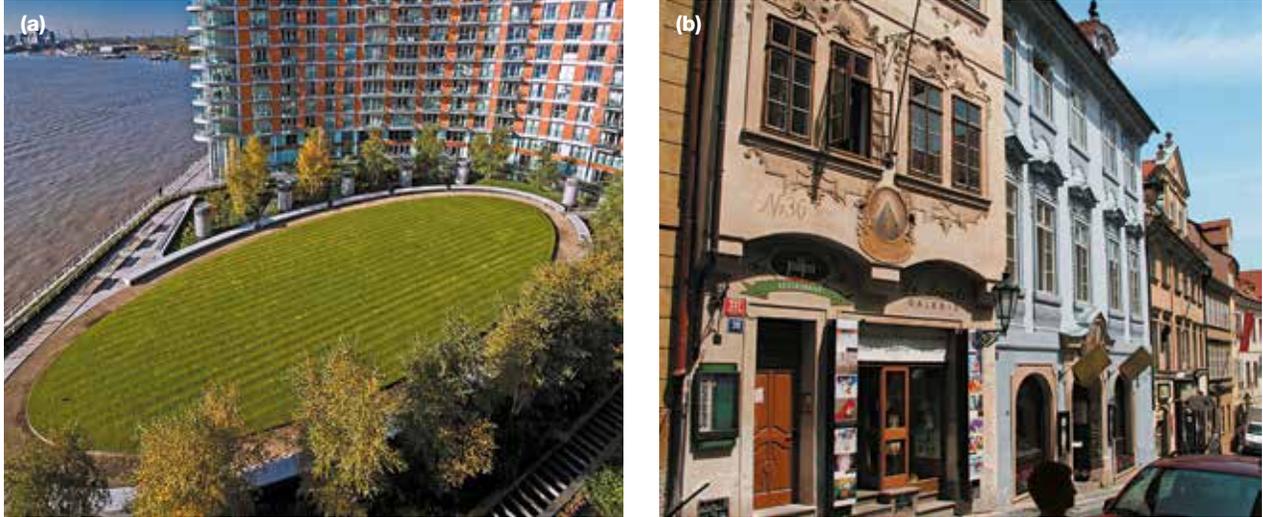


FIGURE 3 The contrast between the shantytowns, or favelas, of Rio de Janeiro and their more affluent neighbours is very clear: who has the greater lifestyle choice?



FIGURE 4 Contrasting lives in India (a) The growing middle classes in modern India often purchase modern apartments, like those in this building in New Delhi. (b) For many poor Indians in urban areas, their home and way of life is on the street. Land for housing is expensive in cities such as New Delhi, and beyond the means of many people.



FIGURE 5 (a) and (b) The perfect sea change? These houses in the canal district next to Venice Beach, California, give their owners perfect peace and tranquility. (c) ... or do they? (d) The beachfront houses on Venice Beach (e) Condominiums on the cliffs of the Pacific Ocean, in the well-off suburb of Santa Monica, California (f) Many homeless people in California opt to live on Venice Beach because of the climate.



FIGURE 5 continued



10.9 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Explain

1. Study figures 2, 3, 4 and 5. Identify the features in the photographs that indicate that the people living in these **places** have the resources to choose to live in such **environments**.
2. Create a cartoon that summarises the differences between a sea **change** and a tree **change**.
3. Compare the images in figures 3 and 4. What similarities and differences can you see in the 'lifestyle' choices of these residents of Rio de Janeiro and New Delhi? How much real power do they have to decide where they will live?
4. Refer to table 1.
 - (a) Identify two key facts the table reveals about the number of cars Docklands residents have compared to the average for other Australian suburbs.
 - (b) Think of a reason to explain this.
5. Refer to table 2.
 - (a) Identify two key facts the table reveals about Docklands residents compared to the average for other Australian suburbs.
 - (b) Think of a reason to explain this.
6. Refer to figure 1. Which features (existing or proposed) would make Docklands a 24-hour suburb?

Discover

7. Use online resources to investigate the current state of the Docklands development in Melbourne. Identify the planned zones and features that are in operation and those that have been changed, removed or not built.
8. Based on your research, do you believe that the Docklands **space** provides an enjoyable lifestyle for the people who live there? Give reasons for your answer.

Predict

9. Study the lifestyle **environment** in figure 5. From the evidence in the images, identify and list any possible **changes** (natural or human) that might affect the liveability of Venice Beach and Santa Monica.
10. Would you like to live in a **place** like Venice Beach? Give reasons for your answer.

Think

11. In groups of four, use a graphics software program to create a concept wheel that explores the meaning of the word lifestyle. Display all the wheels in a class electronic presentation.
12. As a class, compare and discuss the lifestyle wheels that you produced in question 11. Is there a common view of lifestyle that is representative of the whole class?

10.10 Where is my place?

10.10.1 My place

What is your **neighbourhood** or local place like? All of us live in a community, and these are often centred around the place where we live, go to school or work.

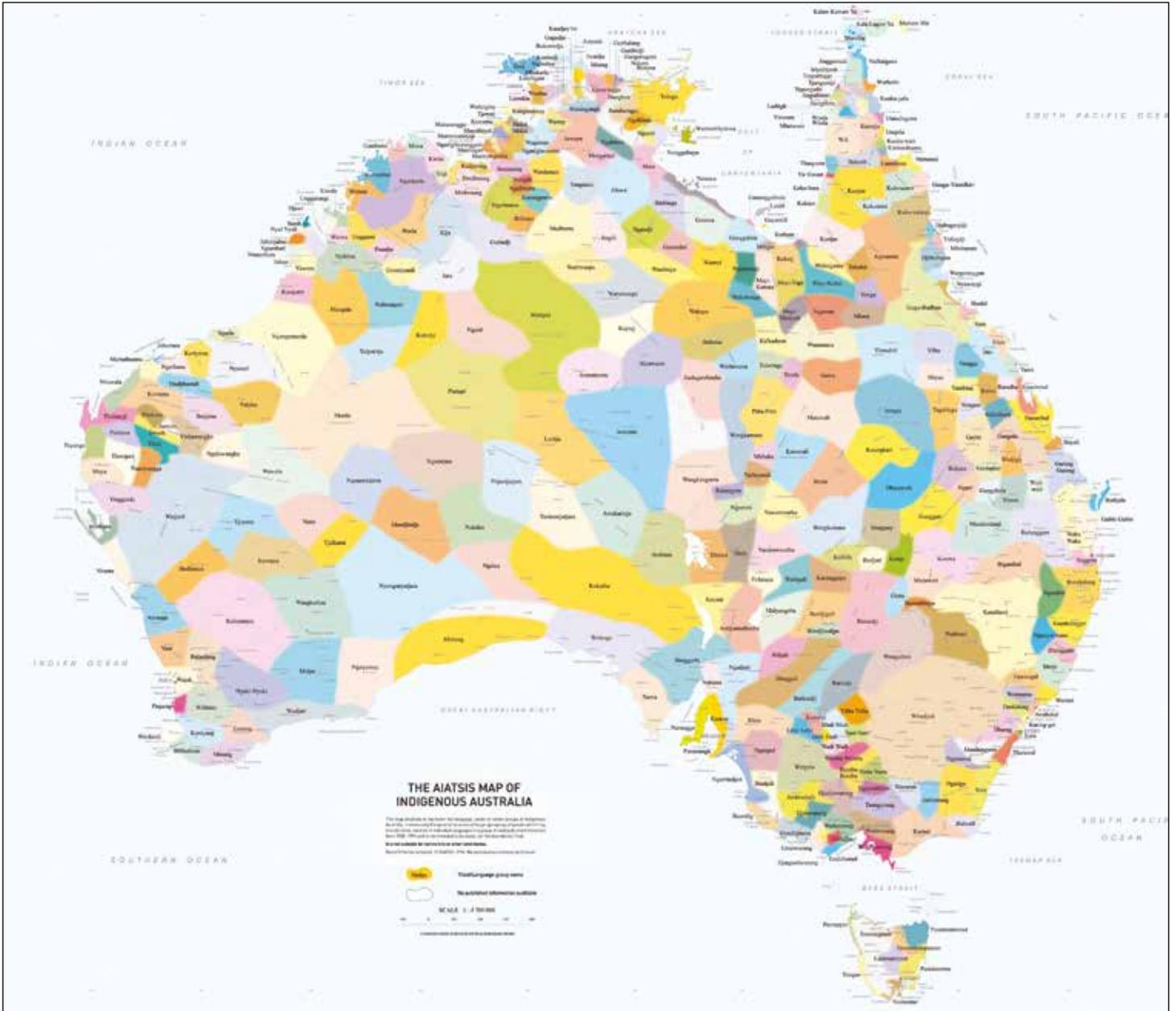
Teenagers have different types of local places that have special meaning for them, each one at a different scale: their bedroom, home and neighbourhood.

When you live in a neighbourhood, you become familiar with all the things that help to create the character of the place. Sometimes a neighbourhood is made up of people who have similar interests and beliefs, whether these be cultural, sporting, environmental or job-related. Other neighbourhoods have a mixture of people from different backgrounds, creating a vibrant, multicultural community identity. The fact that Australian neighbourhoods can be so different is what makes Australia such an interesting place to live in.

Neighbourhoods have always existed in Australia. The ‘country’ that is special to the many Aboriginal and Torres Strait Islander nations is often based on language. For instance, the Kulin Nation consists of five Victorian Aboriginal communities who lived in what is now the Melbourne region before Europeans invaded. Each community spoke its own language and controlled a region that had definite boundaries (see figure 1). Within each community, there were different dialects that overlapped. These dialects were spoken by different clans — groups of related families. Thus, these nations saw, and often still see, their neighbourhood as the region in which people spoke the same language and had the same customs, such as marriage rituals. People were, and are, socially connected.

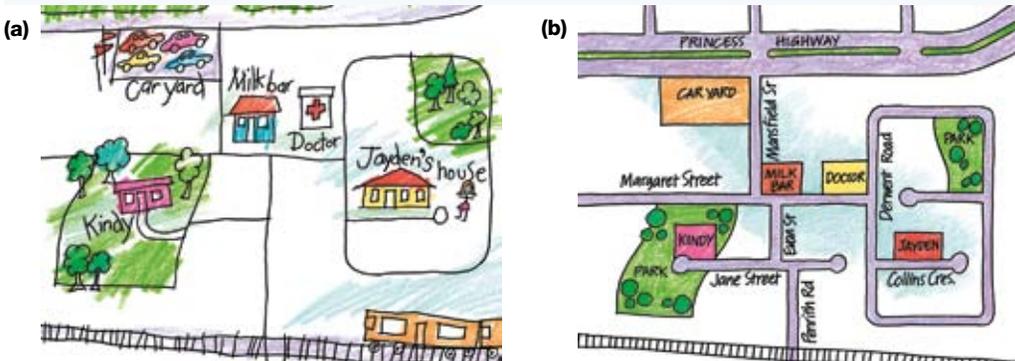
Because nearly 90 per cent of Australians live in towns and cities, most people are likely to live in a street that is part of a suburb, town or city, and which itself is part of a state or territory. On the other hand, there are Australians who do not live in urban areas, but still live in their own communities that are just as distinctive as neighbourhoods in towns and cities. How can we describe where our local place is and what it is like? Sometimes, people try to use words to do this, but it is not an easy task. Geographers have no such trouble, however; they can use maps.

FIGURE 1 The places belonging to Indigenous Australian peoples



Source: This map attempts to represent the language, social or nation groups of Aboriginal Australia. It shows only the general locations of larger groupings of people which may include clans, dialects or individual languages in a group. It used published resources from 1988–1994 and is not intended to be exact, nor the boundaries fixed. It is not suitable for native title or other land claims. David R Horton (creator), © Aboriginal Studies Press, AIATSIS, 1996. No reproduction without permission. To purchase a print version visit: www.aiatsis.ashop.com.au/

FIGURE 2 Mental map of Jayden’s local place (a) by Jayden and (b) by Annette, Jayden’s mother



10.10 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Think

1. Figure 2 shows two mental maps of the same neighbourhood **place**. One is drawn by Jayden, a year 7 boy, and the other is drawn by his mother. Compare the two maps by drawing up a table like the one below and filling in the spaces.

	Features that are different	Features that are similar
Land use		
Transport		
Street layout		
Relative sizes		
Names of places		
Other		

Explain

2. Suggest reasons to explain the major similarities and differences between the maps drawn by Jayden and his mother. Think about factors such as age, duties during the day, transport and friendships.

Discover

3. Create a mental map of your neighbourhood or local **place**. Locate your house in the centre of the sheet and work outwards from there. The map should be as detailed as possible. Include features such as:

- streets and their names
- houses of friends or family
- shops, parks, trees, post boxes, telephone poles, pedestrian crossings, railway lines and stations
- anything you can remember, but the map must be drawn from memory.

Present the map using geographical rules (BOLTSS). Since you are not drawing the map to a **scale**, write 'Not to scale' in the correct position. Remember to use conventional colours and symbols as far as possible. Compare your mental map to an actual map of your neighbourhood.

- (a) In what ways was your map accurate?
- (b) Which features did you not mark on your map?
- (c) Which parts of your neighbourhood did you know well and which did you not know well?
- (d) Think of reasons to explain your answers to part (c).

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 Try out this interactivity: How did they live here? (int-3091)

10.11 Where would you like to live?

10.11.1 What makes this place so liveable?

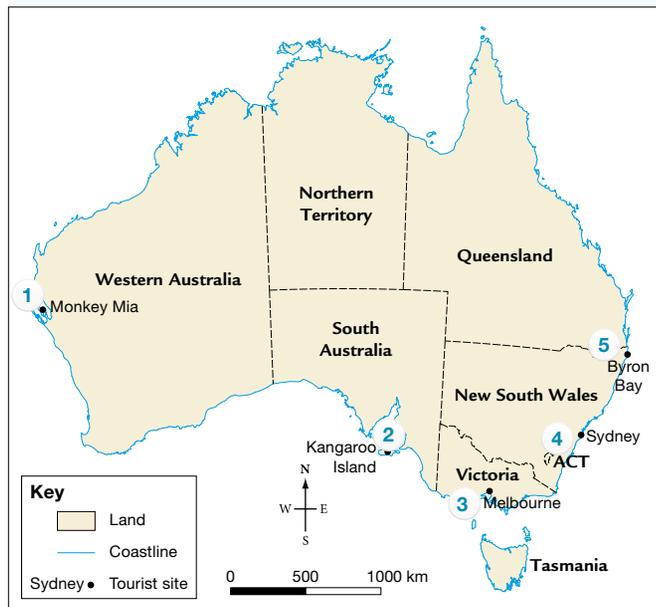
Where is your favourite place in Australia? Have you been to a holiday paradise, one that you think would be the perfect place to live? Is the climate perfect, the scenery spectacular? Is it safe, fun and the place for adventure? Is this place in a city, in the **wilderness** or in the next street? Is it paradise because your friends or family live there or because of the natural or **built environment**?

Among the most popular and beautiful tourist destinations in Australia are the Great Barrier Reef, Uluru, Melbourne, Sydney, the Gold Coast, the Great Ocean Road, Monkey Mia, Kakadu, the Tasmanian

Wilderness, the Blue Mountains, Port Arthur, Byron Bay, Kangaroo Island and Ningaloo Reef. Many of these places have unique landscapes, located within naturally stunning environments. Four of these are predominantly built environments: Sydney, Melbourne, the Gold Coast and Port Arthur. The remaining 11 places are best known for their natural, often remote, and almost wilderness environments.

Some of these wonderful places are found in or close to cities and large towns; some have significant local populations; and some are quite remote. They are all places that attract large numbers of visitors every year. People come to see or experience an aspect of the local environment that brings them pleasure. These places are often perfect for a holiday but they may also be a place to live. Is it mostly the excitement of a big city, natural beauty, or some other factor that makes you decide which place is the most liveable?

FIGURE 1 Five of Australia's most popular places for tourists



Source: Spatial Vision

1 Monkey Mia is an environment where you can experience natural wildlife by interacting with dolphins. Monkey Mia is located in Shark Bay on the coast of Western Australia, 850 kilometres north of Perth. For over 40 years, a small pod of dolphins has come ashore to connect with beachgoers. The Department of Environment and Conservation provides staff who supervise the feeding of fish to these dolphins each day. It is an unusual opportunity for people to see wild dolphins up close, quite near to the shore. Monkey Mia is a place of great natural beauty without a huge tourist resort attached. Most visitors camp. It is an important stop on the around-Australia tourist trail. Fewer than 800 residents currently live near the Monkey Mia Resort.



2 Kangaroo Island is a place of natural beauty. It is Australia's third largest island, found about 160 kilometres south of Adelaide. It is a wildlife lover's paradise, being home to many native Australian animals in their natural habitats, including koalas, kangaroos, seals and penguins. It has remote, unspoiled beaches and interesting rocky outcrops. Although first settled in the late 1830s, its present population of over 4200 is the highest it has ever been. It was originally settled as a fishing and farming community but today is better known as a tourist destination.



3 Melbourne is the second largest and most **liveable city** in Australia (2011–2015, the *Economist* magazine). It is the capital of Victoria and home to about 4.4 million residents. It is an attractive destination for tourists, who enjoy visiting its major sporting and cultural events, shops, restaurants and theatres. Melbourne is located beside Port Phillip Bay and on the Yarra River. It is not a city known for its beautiful natural environment, but it has become known for its distinctive laneways, bars and café culture.



4 Sydney is a built environment in a beautiful setting and is Australia's largest and oldest city. It is often called the 'Harbour City'. Sydney is popular with both domestic and international tourists and is home to 4.8 million residents. It has many attractions, including restaurants, beautiful beaches, theatres, galleries and iconic landmarks. It has a beautiful natural environment with varied experiences provided by the built environment. This makes it an extremely popular destination for everyone.



5 Byron Bay is a beachside town in northern New South Wales, located 160 kilometres south of Brisbane. Byron Bay is a very relaxed place with a local community that includes many artists and retired hippies. It is an important surfing place, with easy access to offshore reefs and stunning beaches. It has become a popular place for 'schoolies' end-of-year celebrations. Byron Bay has a population of about 30 000 people, who rely heavily on tourism and agriculture for their income.



10.11 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Explain

1. Brainstorm a list of the features to describe your most liveable **place**.
2. Is there a **place** in Australia that you have been to or heard about that is your most liveable **place**? Locate this **place** on a map and use images from the internet or magazines to explain how it fulfills your list of features from question 1.

Discover

3. Is your most liveable **place** in a natural or a built **environment** or a mixture of the two?
4. What would be the advantages and disadvantages of living in your most liveable **place**?
5. After reading the paragraphs numbered 1, 2, 3, 4 and 5, which of these **places** is most similar to your most liveable **place**? Explain your answer.

Predict

6. If you were looking for a **place** to retire, which of the **places** in figure 1 would be best and why?
7. If you wished to work as a national park ranger, which of the **places** in figure 1 would be best and why?
8. If you were planning a career in the theatre, which of the **places** in figure 1 would be best and why?
9. If you wished to live in a relaxed coastal **environment** close to a capital city, which of the **places** in figure 1 would be best and why?

Think

10. Design a map of your most liveable **place**. Consider the natural and built **environments**; distance to a city, services, job and recreational opportunities; climate; and lifestyle. Annotate your map to explain why this is where you would like to live. Use the **Nothing like Australia** weblink in the Resources tab to help find your ideal location.

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 Explore more with this weblink: [Nothing like Australia](#)

10.12 SkillBuilder: Creating a concept diagram

online only

WHAT IS A CONCEPT DIAGRAM?

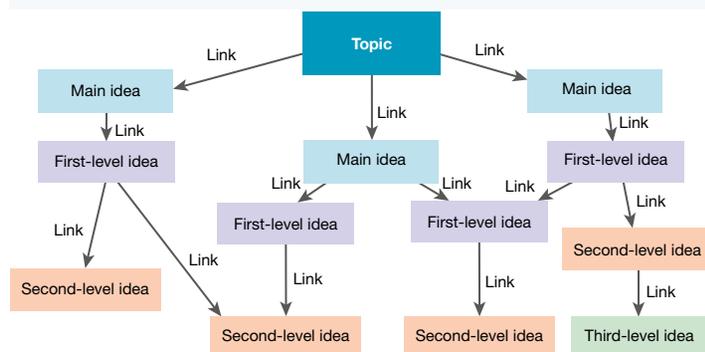
A concept diagram, sometimes mistakenly called a concept map, is a graphical tool that shows links between ideas, or concepts. Concept diagrams organise links into different levels.

Concept diagrams enable you to organise your ideas and communicate them to others.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 Example of a concept diagram





Watch this eLesson: Creating a concept diagram (eles-1640)



Try out this interactivity: Creating a concept diagram (int-3136)

10.13 Review

online only

10.13.1 Review

The Review section contains a range of different questions and activities to help you revise and recall what you have learned, especially prior to a topic test.

10.13.2 Reflect

The Reflect section provides you with an opportunity to apply and extend your learning. Access this subtopic at www.jacplus.com.au

10.6 SkillBuilder: Using topographic maps

10.6.1 Tell me

What are topographic maps?

Topographic maps are more than just contour maps showing the height and shape of the land. They also show features of the natural environment, such as forests and lakes, and features of human environments, such as roads and settlements. (Settlements are places where a community of people live.)

Why are topographic maps useful?

Topographic maps are useful when bushwalking, planning roads and checking the steepness of slopes. All topographic maps use similar symbols to show the main features in the landscape. These conventional symbols make it easy for map readers to quickly identify the features shown in the legend, or key.

Model

There are many observations that can accurately be made from a topographic map. Figure 2 is a topographic map extract of Mount Gambier. Blue Lake is a distinctive feature on this map, and it is surrounded by a steep slope. The built-up area, or township, is situated north of Blue Lake. A railway line passes through the town and the station is close to the civic centre and post office. The main town extends approximately four kilometres east–west and four kilometres north–south. The local golf club can be found in the north-east of town. These observations are made by using the legend, north arrow and scale.

10.6.2 Show me

How topographic maps help us to locate places on a map

You will need:

- a topographic map.

Area and grid references

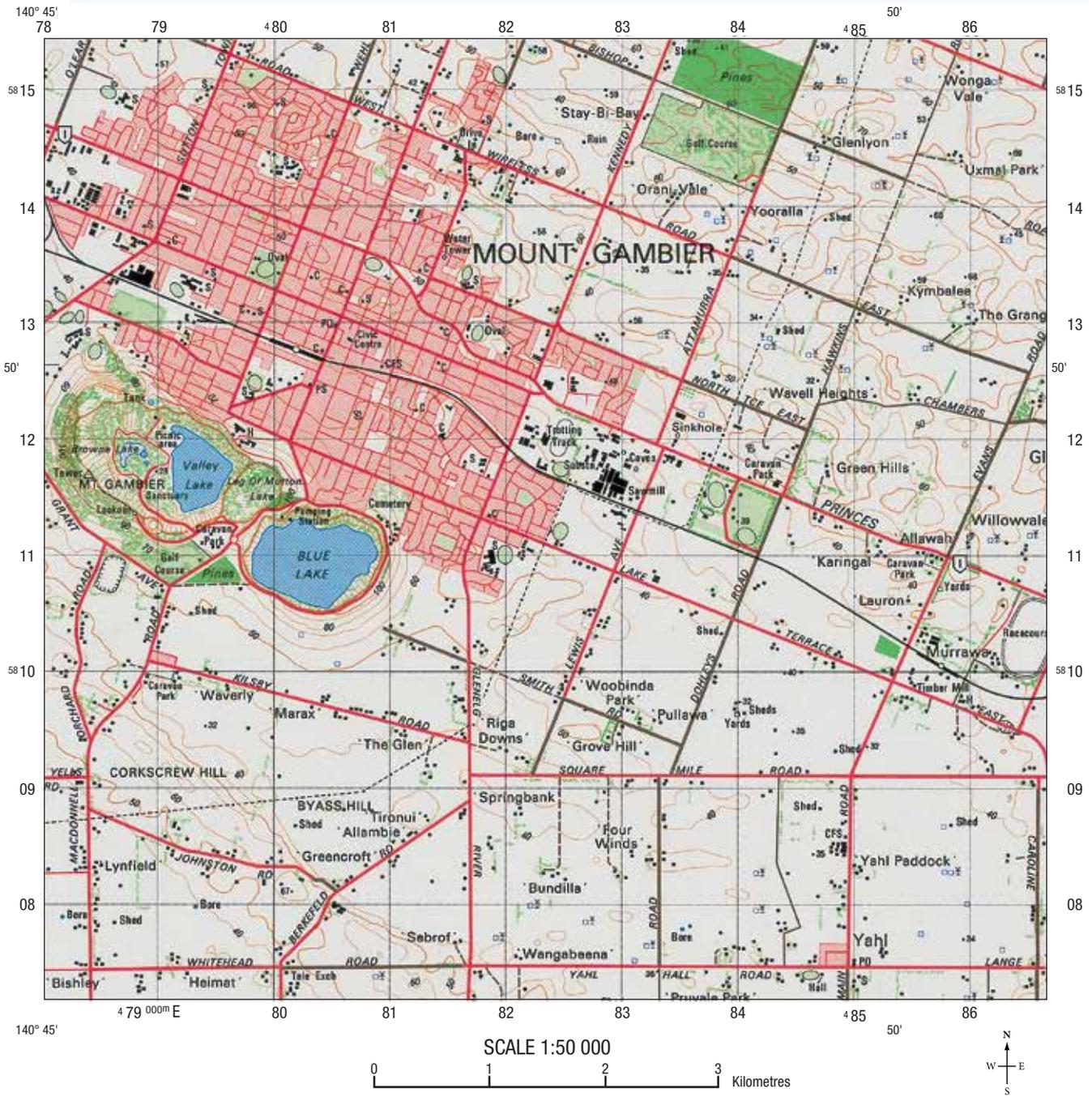
A 1-kilometre-square grid is overprinted on a topographic map. These grid lines are numbered with two-digit numbers in the map's margins. Lines that run up and down the map (north–south) are called eastings. The numbers increase as you move to the east. Lines that run horizontally across the map (east–west) are called northings. The numbers increase as you move north. In a grid reference, the eastings are given first, and then the northings.

Four-figure grid references tell you the grid square in which to find a feature. The letters AR are placed in front of a four-figure reference to show the area reference. For example, AR8513 contains the town of Kymbalee.

FIGURE 1 This is an aerial photograph of Mount Gambier, South Australia, which has many extinct volcanoes. Lakes have formed in the craters of several volcanoes, the most famous of which is Blue Lake. We can see many features in the photo, but a topographic map can give us more information, especially about the shape of the landscape — its topography.



FIGURE 2 This topographic map extract of Mount Gambier can be used to determine the location, direction and distance of physical and human features in the area shown on the map.

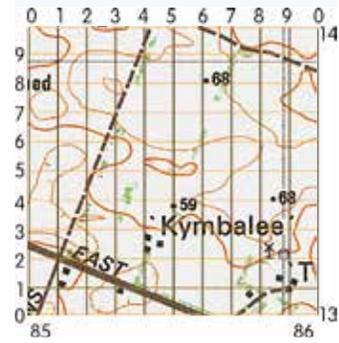


Built-up area; Parks, recreation areas.....		Power transmission line; Levee or bank.....	
Road, sealed surface, two or more lanes; National route marker.....		Survey beacon; spot elevation.....	
Road, sealed surface, one lane.....		Lake perennial; Watercourse.....	
Road, unsealed surface, two or more lanes; Bridge.....		Lake, intermittent; Land subject to inundation.....	
Road, unsealed surface, one lane; Gate; Cattle grid.....		Dam or waterhole on watercourse; Tank or small dam.....	
Vehicular track.....		Contours; Depression contours.....	
Railway, multiple track; Station; Siding.....		Cliff; Escarpment or low cliff.....	
Railway, single track, Cutting; Embankment.....		Pine plantation; Orchard or low cliff.....	
Building; Post office; Police station; School.....		Windmark.....	
Hospital; Church; Mine; Windmill.....		Trees and scrub, scattered.....	
Fence; Quarry.....		Trees and scrub, medium, dense.....	

Source: Government of South Australia, Department of Environment, Water and Natural Resources.

Six-figure grid references pinpoint an exact point in the grid square. The third and sixth figures represent one-tenth of the distance between the two grid numbers. These divisions are not written on the map, so they must be estimated. The letters GR are used in front of a six-figure grid reference. There are no spaces between the digits in four- or six-figure references; for example, Kymbalee's grid reference is GR854132.

FIGURE 3 Working out a six-figure grid reference



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 Watch this eLesson: Using topographic maps (eles-1641)

10.6.3 Let me do it

Developing my skills

Answer these questions using the topographic map extract of Mount Gambier.

Questions

- Examine figure 1. From which direction was this photograph of the crater lakes taken?
- Examine figure 2. Look at the contour lines to the south of Blue Lake.
Is the land flat or steep? How can you tell?
- Sketch the special symbols used in the legend showing that the crater lakes:
 - form a depression
 - have steep sides.
- Give the main features found at the following area references:
 - AR8010
 - AR8013.
- Give area references for the following features:
 - Valley Lake
 - the racecourse.
- Find the following features:
 - GR858087
 - GR816077
 - GR807128
 - GR812123.
- From figure 2, give six-figure grid references for features that show the following:
 - Mount Gambier has a large timber industry.
 - Mount Gambier is a popular tourist resort.
 - Mount Gambier has many sporting facilities.
 - Mount Gambier is the centre of a farming region.

Checklist

I have:

- identified north, south, east and west using the north point
- used the key to identify features
- used grid references to describe the location of a specific feature
- used the scale to calculate distances
- interpreted topography by considering how close together the contour lines are.

Skills questions

1. A topographic map is useful for working out:
 - (a) how the river level *changes* in high and low flow
 - (b) the shape of the land
 - (c) which birds are found in the area
 - (d) whether it is summer or winter.
2. Area references are used to:
 - (a) locate an exact point in the grid square
 - (b) calculate distance
 - (c) explain where buried treasure is located
 - (d) tell us the grid square that a feature is found in.
3. Identify the colours that have been used in the map legend for figure 2 and the type of landform feature that each represents.
4. Define the terms *eastings* and *northings* in sentences.
5. Which reading is given first: the easting or the northing?

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 Try out this interactivity: Using topographic maps (int-3137)

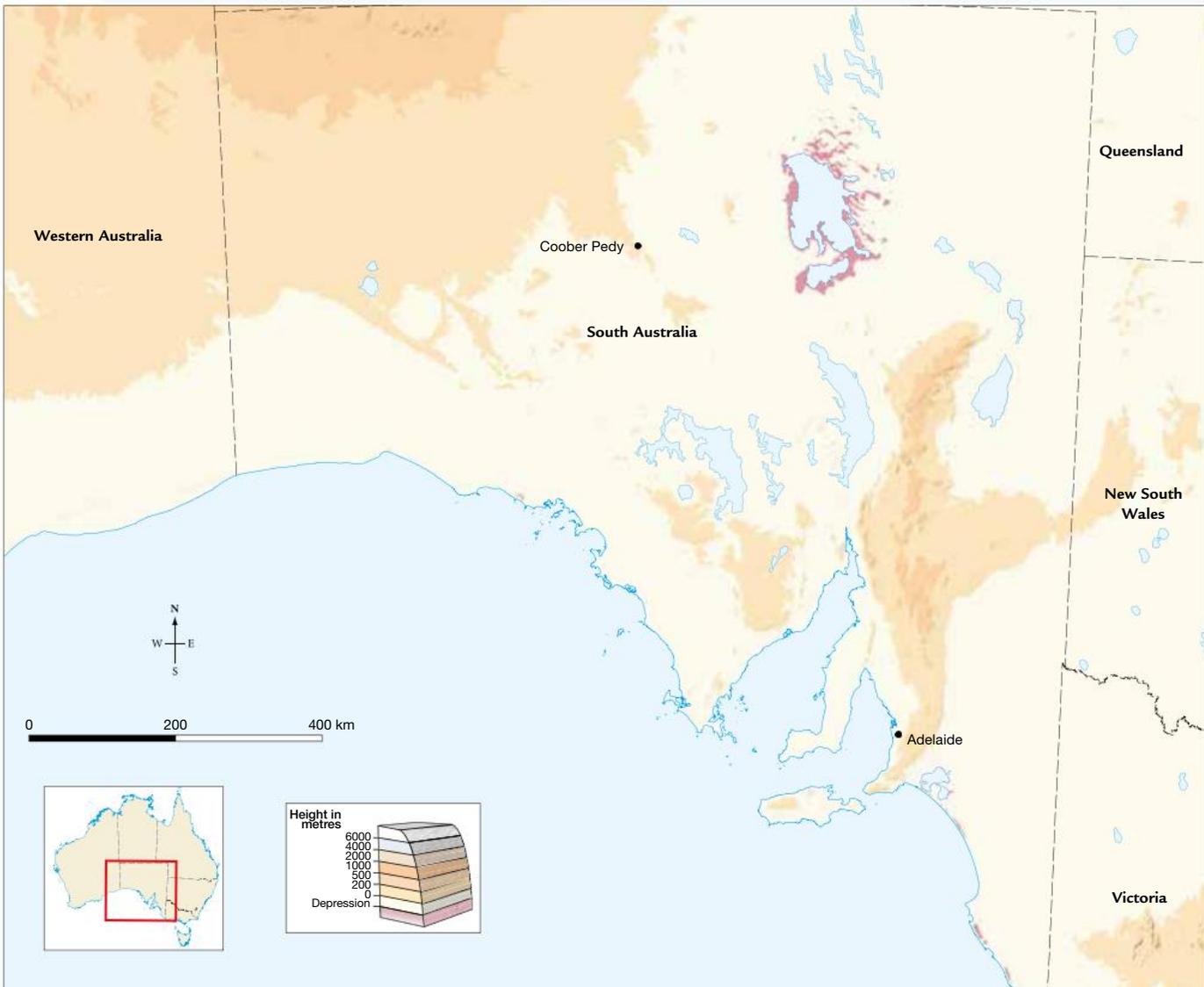
10.8 Are rural communities sustainable?

10.8.1 Rural communities

Rural communities are an important part of Australia’s social identity, but they are facing significant change and challenges in maintaining their population. Many are experiencing a decline because young people are leaving in search of education and employment. Some rural communities are able to alter this trend, and are surviving against the odds. Others have not fared so well.

Coober Pedy is a vibrant multicultural town in the far north of South Australia, 850 kilometres north of Adelaide and 700 kilometres south of Alice Springs. The town is located in one of the most arid environments of Australia.

FIGURE 1 Coober Pedy location map



Source: Spatial Vision

For thousands of years, Aboriginal peoples walked the stony desert of the Coober Pedy area as part of their rotational occupation of land. The traditional custodians of the land are the Antakirinja people. The town’s name may come from the name Kupa Piti, meaning ‘white man’s hole’. Opal was discovered in February 1915 and, after several cycles of boom and bust, the town expanded rapidly during the 1960s.

Opal developed into a multi-million dollar industry, and the town is sometimes called the ‘Opal Capital of the World’.

Opal continues to be important to Coober Pedy’s identity and economy, but the town now draws its income from mining services, tourism and public services. Coober Pedy has a large Aboriginal community, and the town’s population has now declined to an estimated 3500.

10.8.2 What does the future hold?

Coober Pedy is widely known for its underground housing (see figure 4), an effective and environmentally friendly response to the town’s searing summer heat and chilly desert evenings. Recent exploration has revealed significant deposits of iron ore, copper, gold and coal in the area, along with platinum, palladium and rare earths.

The location of the town makes it an ideal centre for mining services, and a base for the delivery of state and federal government services in the region. This presents an opportunity for the town to reverse its steady population decline and again see growth in its economy and population.

FIGURE 2 Climate graph for Coober Pedy, South Australia

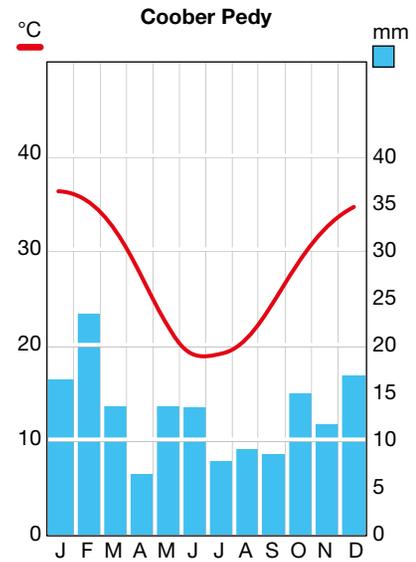


FIGURE 3 Along with other South Australian fields, Coober Pedy produces most of the world’s opal. Mullock heaps create Coober Pedy’s distinctive landscape.



FIGURE 4 Much of Coober Pedy lives underground to take advantage of the cooler underground climate.



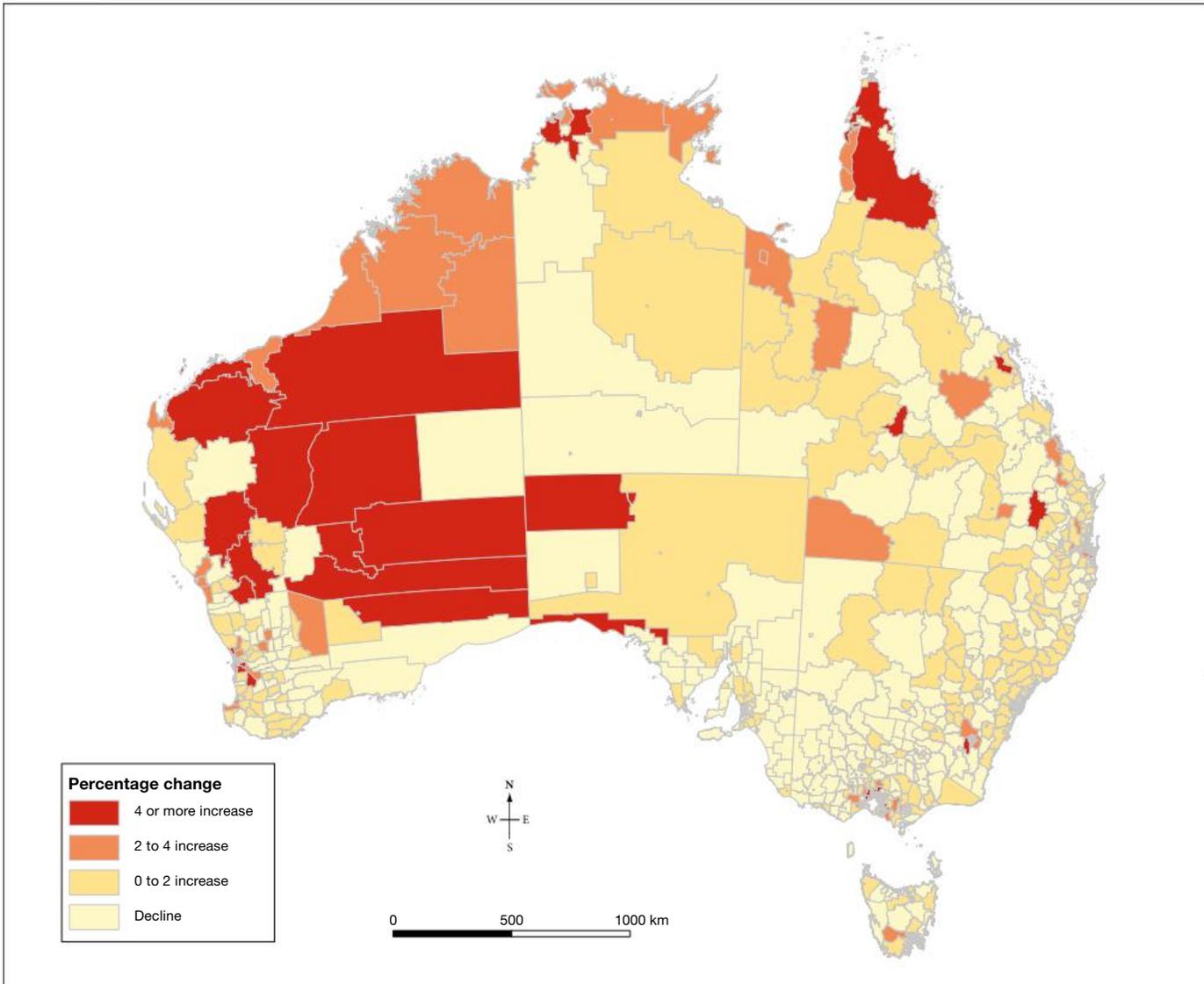
Coober Pedy has good hospital and medical services, primary and secondary schooling, a TAFE campus, childcare services and police. However, these services are under some pressure, and there is a continuing problem with the recruitment and retention of medical professionals. This rural environment is extremely remote, so many of the **pastoral** properties in the region have been linked to telecommunication services since 1987. The Stuart Highway provides the main transport and service route for the town.

10.8.3 A question of survival

Many rural communities are facing global pressures, such as more overseas competition and a change in the value of the Australian dollar. The rural communities that are not experiencing the trend of people moving to urban areas (figure 5) all have one thing in common: they have discovered another source of income. They may have shifted their focus to growing olives or grapes, or perhaps made use of a natural environmental resource such as a nearby national park.

In some cases, a rural community is unable to reinvent itself or tackle the problem effectively. The loss of an industry such as mining may have terrible effects on employment, leaving the resident population with lower incomes and few job prospects.

FIGURE 5 The rate of population change across Australia between 2010 and 2011



Source: Spatial Vision

10.8 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Describe the location of Coober Pedy.

Explain

2. Why are rural communities under threat?
3. Refer to figure 5. Which regions of Australia are experiencing negative population growth (less than 0.0 per cent)? Where are the rates of highest population growth occurring (more than 4.0 per cent)?

Discover

4. Use an internet mapping tool to view a satellite image of Coober Pedy. What clues can you see that tell you about the climate of Coober Pedy? Can you see the mullock heaps, as shown in figure 3?

Predict

5. Some rural communities revolve around only one particular industry, such as tourism or mining. What happens to the town when this industry fails? For example, a finite resource such as coal might be mined out, or a key tourist attraction such as a coral reef might be destroyed. In two separate columns, list the social and economic impacts of a failed industry.

Think

6. Sometimes, when rural communities begin to fail and their populations begin to decline, drastic measures need to be taken. The town of Trundle featured in an ABC series in which families could rent a house in the town for \$1 a month, in order to help stimulate the rural community and economy. In a small group, come up with a solution that could be put to the Council of Coober Pedy to help them reverse their population decline.

10.12 SkillBuilder: Creating a concept diagram

10.12.1 Tell me

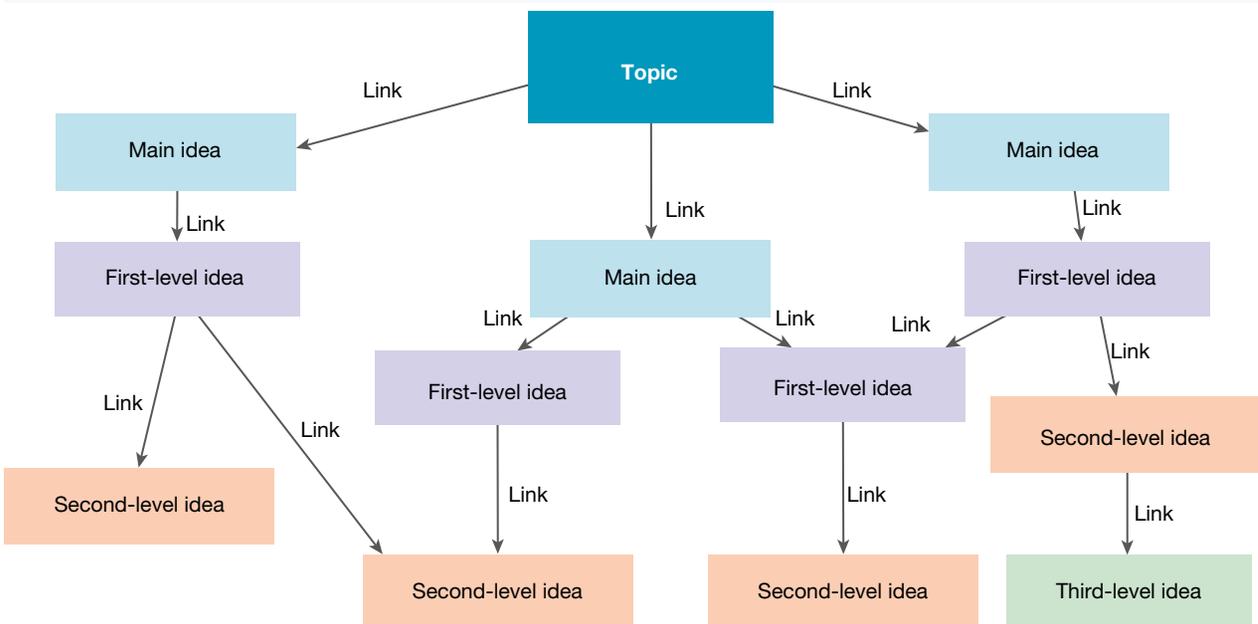
What is a concept diagram?

A concept diagram, sometimes mistakenly called a concept map, is a graphical tool that shows links between ideas, or concepts. Concept diagrams organise links into different levels.

Why are concept diagrams useful?

Concept diagrams enable you to organise your ideas and communicate them to others. They also help you to clarify and represent your knowledge of a topic or issue. They highlight the ways your thoughts and ideas relate to each other. They are useful for when you are reflecting on a topic or issue, especially towards the end of studying a topic, because they help you see connections between ideas and information. They can also be useful when brainstorming, and can help you in the further research of a topic.

FIGURE 1 Example of a concept diagram



Model

Concept diagrams should:

- include a clear title
- be presented neatly and clearly
- explain what each colour represents
- be easy for another person to understand.

10.12.2 Show me

How to create a concept diagram

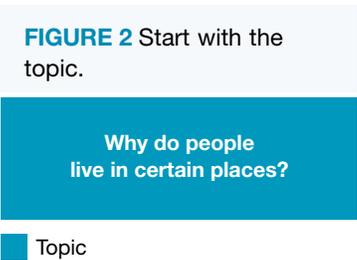
You will need:

- a blank sheet of paper
- a ruler
- colour pencils
- an eraser
- a black lead pencil.

Procedure:

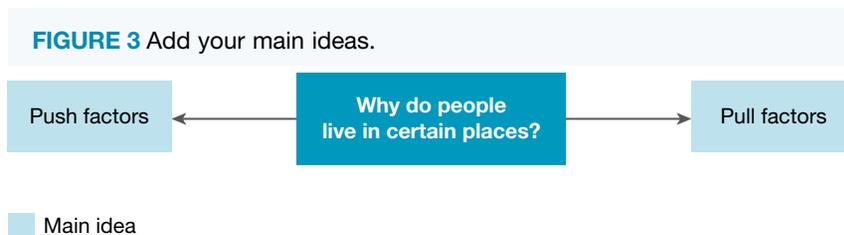
STEP 1

First, start with a topic. Place this in the middle of a blank sheet of paper. Rule a box or draw a circle around it.



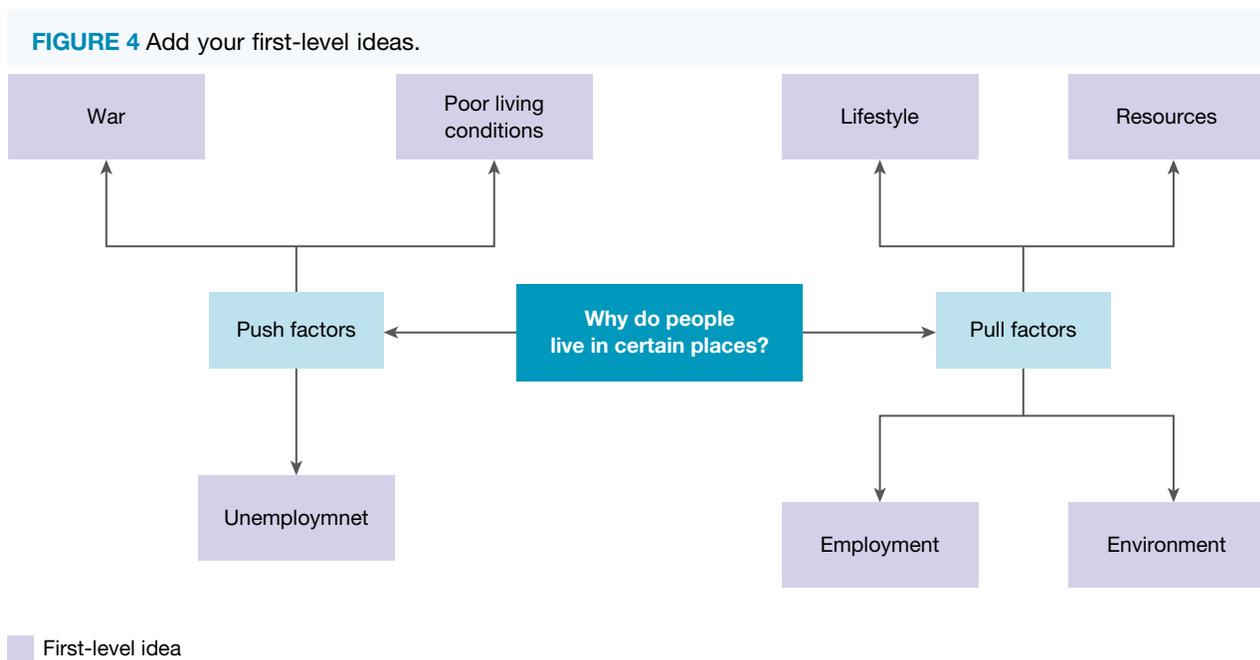
STEP 2

Use your ruler to draw lines out from this word and add key words about that topic or issue. This level is called main ideas.



STEP 3

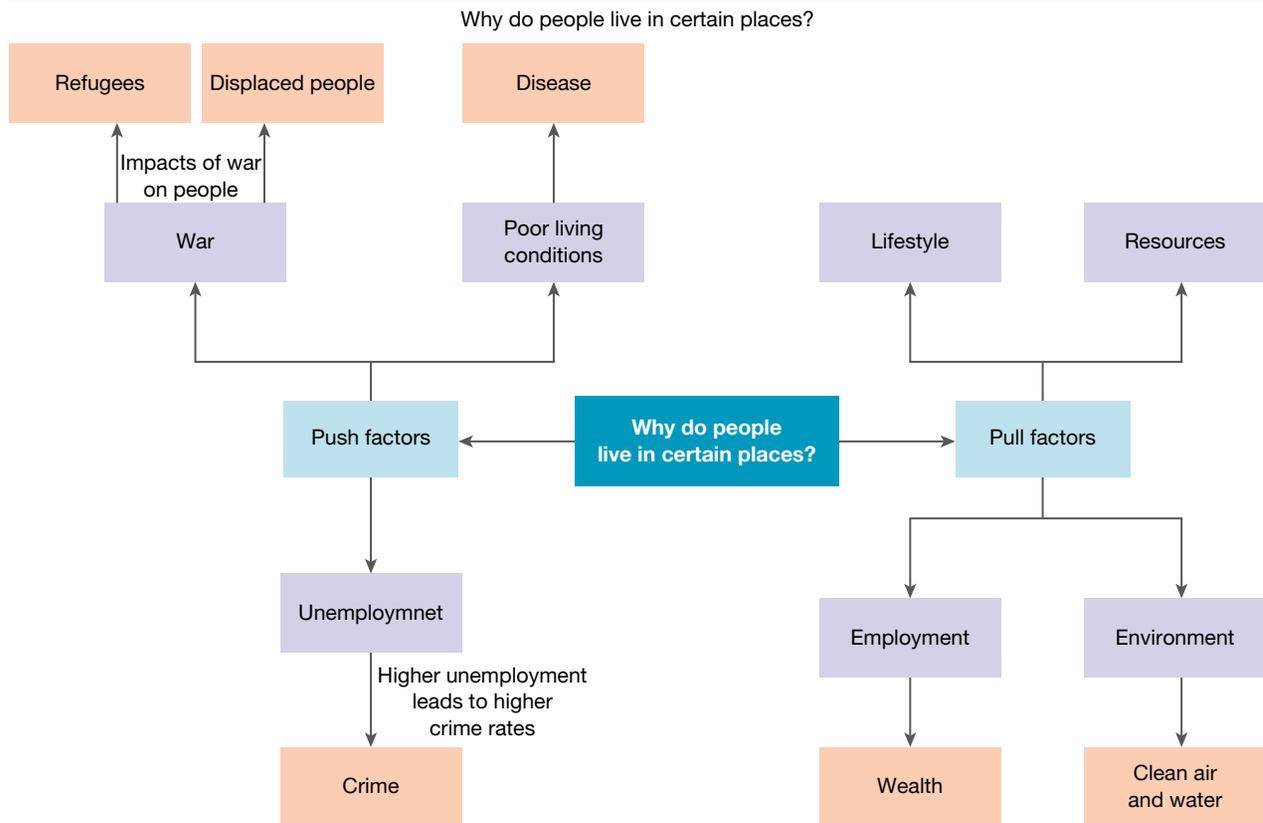
Add other lines to each of the key ideas and add words that relate to each of them. This level is called first-level ideas.



STEP 4

Add new lines and words, so that the diagram develops into a something that resembles a spider web. This level is called second-level ideas. If you like, you can add extra information on some of the lines. You may also choose to add colours to represent different levels or connections. Add a clear title.

FIGURE 5 Add second-level ideas and give your concept map a title.



Second-level idea

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 Watch this eLesson: Creating a concept diagram (eles-1640)

10.12.3 Let me do it

Developing my skills

Use the information in this topic to create a concept diagram of the reasons why Australians live where they do.

You may want to structure your concept diagram using some of the following topics you learned about:

- natural features or built features that attract people to live in certain places
- push and pull factors
- your own family's reasons for living where they do, or your classmates' families' reasons for living where they do
- reasons why remote areas are settled
- lifestyle choices.

Questions

1. How did you decide which ideas to include as your first-level ideas?
2. How easy was it to decide on your second- and third-level ideas?
3. What extra information were you able to add to the arrows that link your ideas?
4. Which aspect of creating a concept diagram did you find relatively easy and which did you find more challenging?

Checklist

I have:

- included a title
- neatly constructed and presented the information
- explained what each colour represents
- ensured the finished diagram is easy for another person to understand.

Skills questions

1. Concept diagrams:
 - (a) are a type of map geographers use
 - (b) show links between ideas and concepts
 - (c) use arrows to link places and ideas
 - (d) have first-level ideas only.
2. Which of the following is *incorrect*? Concept diagrams are useful:
 - (a) because they highlight the ways thoughts and ideas relate to each other
 - (b) when you are reflecting on a topic or issue
 - (c) when brainstorming a topic
 - (d) when planning a hike.
3. What is a first-level idea?
4. Can extra information be added to arrows to provide further information on a concept diagram?

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 Try out this interactivity: Creating a concept diagram (int-3136)

10.13 Review

10.13.1 Review

1. Construct a detailed list of factors (reasons) that influence where people live.
2. (a) Why did people live in the town of Coober Pedy? Why did they leave?
(b) Describe the services you would expect to find in Coober Pedy, given the type of activities in the region now.
(c) What environmental qualities do you think visitors to Coober Pedy value?
3. (a) Why do you think people want to live in remote locations?
(b) Why do you think people are able to live in remote locations these days?
4. What services allow FIFO settlements such as Tom Price (located in Western Australia) to exist?
5. What services and facilities does Docklands have that to allow it to be a 24-hour city for visitors?
6. How might the quality of the *environment* differ in the following places: Sydney, Monkey Mia, Byron Bay and Melbourne?

10.13.2 Reflect

7. Refer to table 1.

TABLE 1 Selected crimes in Docklands, 2008

Crime category	Melbourne LGA's rate per 100 000 population	Average rate in Victoria per 100 000 population
Burglary (residential)	1078	549
Assault	2629	596
Robbery	555	64
Theft from motor vehicle	6443	995
Theft (shoplifting)	2051	299

Note: Docklands is part of the Melbourne local government area (LGA).

- (a) Construct a series of column graphs to represent crime statistics in Docklands (Melbourne local government area) and the average for Victoria.
 - (b) Compare the numbers of crimes in Docklands (Melbourne local government area) with the average for Victoria, as revealed in your graphs.
 - (c) What might Docklands residents think of how safe it is to live there?
 - (d) What bias might there be in the statistics?
8. Describe the services and facilities that encourage community interaction and a feeling of connectedness in Melbourne.
 9. Which services and facilities in your community give you a feeling of connectedness? What more do you feel could be done in your local community to foster this?

TOPIC 11

People and places

11.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

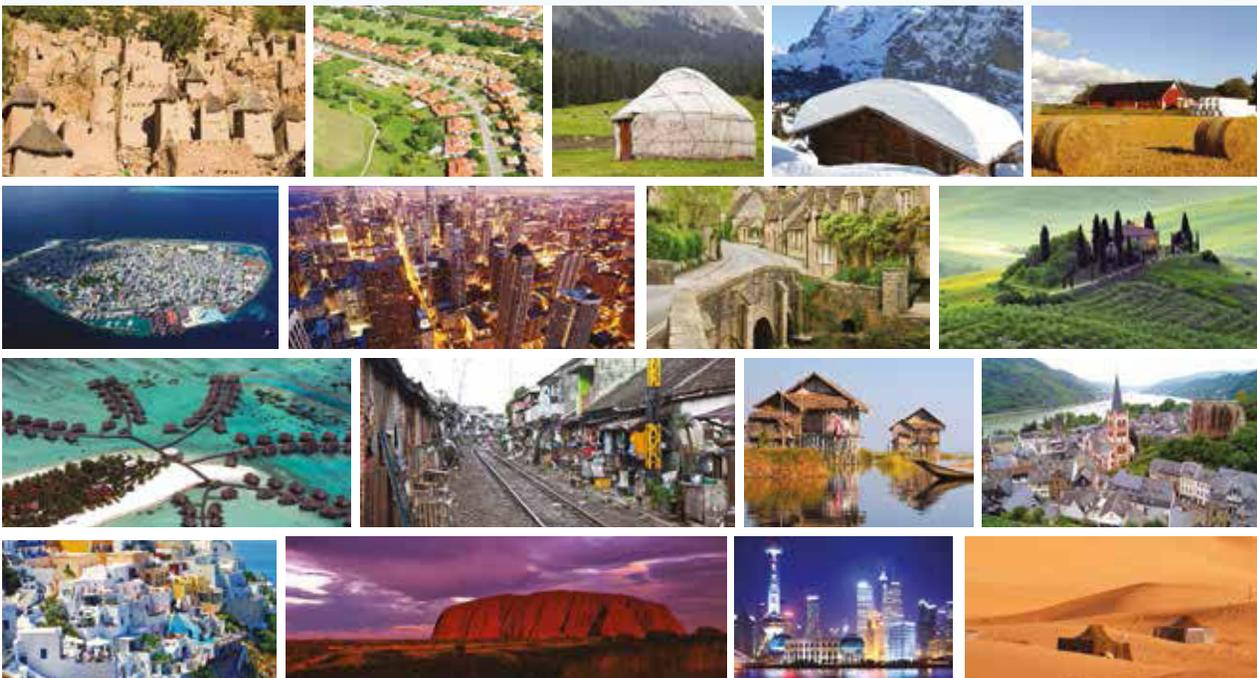
11.1.1 Introduction

We all live in different places. Places are important to people, whether they are rural or urban, remote or central, permanent or temporary. But no two places are alike; they differ in aspects such as their appearance, size and features. In your mind's eye, try to picture the similarities and the differences between places such as a country town, a popular tourist destination, a remote village overseas, a scientific base in Antarctica, an Indigenous community and a mining town. You may think of others to add to this list.

Starter questions

1. Brainstorm, as a class or individually, a list of other types of **places** in which people live around the world.
2. Choose three examples of **places** on your list that have been strongly influenced by the quality of the **environment**. Explain how the **place** is influenced by the **environment**.
3. Other than **environmental** qualities, what influences the characteristics of a **place**?
4. How true is it that 'no two places are the same'? Use images on these pages, or **places** you know, to support your opinion.

The places people live in around the world have many different characteristics and features.



INQUIRY SEQUENCE

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 Watch this eLesson: Why we live where we do (eles-1620)

11.2 Do most Australians live near water?

11.2.1 Historic settlements and transport networks

Does the availability of rainfall explain why Australians currently live where they do? Could it also be warmer weather, good soils, and access to the coast, mineral resources, people and flat land?

Fresh water availability and a coastal location have always influenced the places where Australia's inhabitants live, because our continent is huge, dry and isolated. Unlike Indigenous Australian peoples, the people who occupied Australia after 1788 have not been tied to a particular place in Australia by their understanding of 'country'. The liveability of places can be influenced by their access to resources.

Australia's first large European colonies were all built close to rivers and harbours, which provided safe anchorage for their sailing ships. The early colonisers and convicts, along with their possessions and food, were all transported from Europe by ship. These colonisers were quite wary of the unknown inland of the continent, so they clung to the coast and relied on sea transport. The sea allowed goods to be imported and exported; it provided fishing, whaling and sealing; and it brought cooler weather due to onshore breezes. Rivers, such as the Yarra (seen in figure 1), provided water for household, industrial and agricultural use, as well as a safe port for passengers and cargo.

Sydney, Melbourne, Brisbane, Hobart, Adelaide and Perth were generally the first settlements in each colony. They have maintained their importance as their state's largest city and its centre of government, transport and commerce. Big cities are great places to live because they provide many opportunities for work, education, healthcare and recreation.

Land use

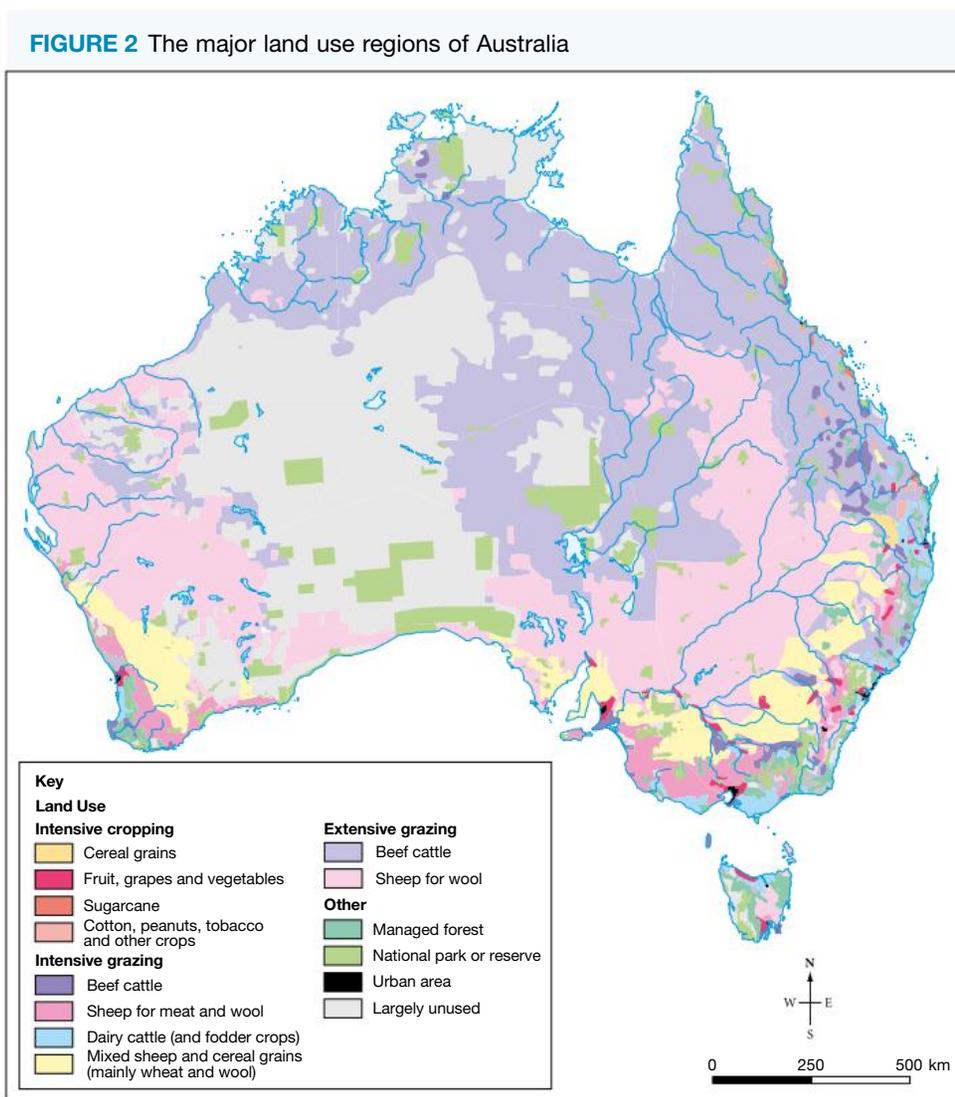
Beginning in 1788, Europeans and subsequent migrants have changed the natural environment by clearing vegetation and using the land for building cities and farms and creating the services people need.

FIGURE 1 The Yarra River, Melbourne, 1864



Examine figure 2 and try to work out the difference between **intensive** and **extensive** land use regions. The intensive regions are mostly located closer to the coast than extensive regions, and they are smaller areas. Compare this land use map to a rainfall map in your atlas. Does more rain tend to fall in the intensive or the extensive land use regions?

In places where rainfall is low or unreliable, such as central Australia, grass growth is seasonal. This semi-arid interior does not support the variety of land uses that are possible closer to the coast. Over 80 per cent of Australia's population lives within 500 kilometres of the coast between Brisbane and Adelaide; some are on farms but most are in regional towns and capital cities.

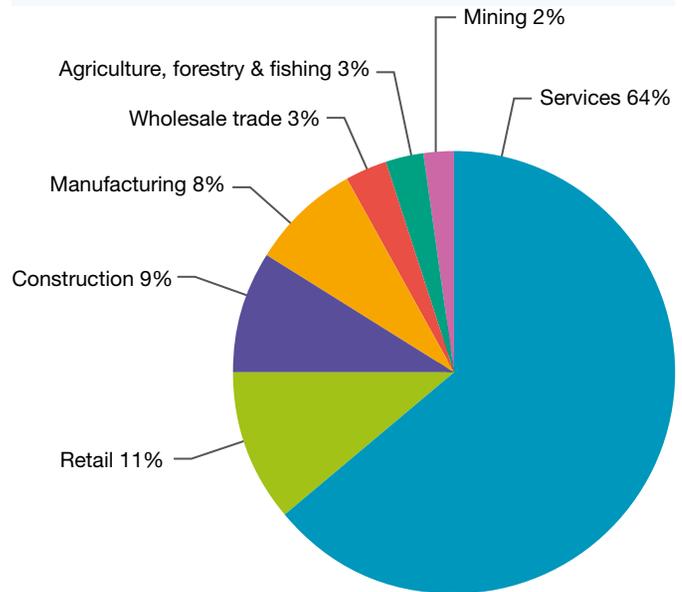


Jobs

People need to work in order to provide for their basic needs. Figure 3 shows that the majority of jobs in 2015 were in the sectors of services (health, finance, education and administration), retail trade and construction. Most of these job opportunities are available in major cities and regional centres, which are generally close to the coast and in areas of higher rainfall.

There are few job opportunities in dry and remote regions of Australia. Agriculture and mining provide some chances for employment in these places. Some jobs are also available in manufacturing (processing the output of farms and mines) and in services, such as healthcare and tourism. According to the Australian Bureau of Statistics, 25 per cent of new jobs created in the next 10 years will be in the services sector, especially healthcare, but these will mostly be in the cities. Mining jobs in remote places are declining due to the reduced international price for minerals and mine closures and very few new mines opening. Remote mining sites have skills shortages that require employers to pay very high wages to attract workers.

FIGURE 3 Australia's job sectors, 2015



11.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. List four reasons why the state capital cities were settled.
2. In Australia, are more workers employed in mining or in manufacturing?

Explain

3. What is the difference between intensive and extensive land use? Give examples of each type.
4. Locate and study a rainfall map of Australia (*Jacaranda Atlas Eighth Edition*, page 40) and the land use map of Australia (figure 2). Approximately how many millimetres of annual rainfall do areas of (a) intensive farming receive and (b) extensive farming receive?

Discover

5. Are there regions of intensive agriculture found in places with much less rainfall? Where are they? Investigate what technology these farmers might use to increase the available water for their crops?
6. 'Access to water improves the liveability of a place.' Write a paragraph that agrees with this statement and another that disagrees with this statement.

Predict

7. Design a cartoon that comments on future environmental conflict between water for everyday living in cities and water for farming in Australia. Remember that only about two per cent of employment in Australia is on farms.

Think

8. A doctor may be offered very high wages to work in a remote, dry place in north-western Australia. What economic, **environmental** and social measures might they use to decide between the liveability of this **place** and their current workplace in Melbourne?

11.3 SkillBuilder: Understanding satellite images

online only

WHAT ARE SATELLITE IMAGES?

Satellite images are images that show parts of our planet from satellites in space and transmitted to stations on Earth. Satellite images help geographers observe a much larger area of the Earth's surface than photographs taken from an aircraft.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 A false-colour satellite image of the Mt Lofty Ranges, South Australia



learn on RESOURCES — ONLINE ONLY

 Watch this eLesson: Understanding satellite images (eles-1643)

 Try out this interactivity: Understanding satellite images (int-3139)

11.4 Where is the fastest growing place?

Access this subtopic at www.jacplus.com.au

online only

11.5 SkillBuilder: Using alphanumeric grid references

online only

WHAT ARE ALPHANUMERIC GRID REFERENCES?

Alphanumeric grid references are a combination of letters and numbers that help us locate specific positions on a map. Letters and numbers are placed alongside the gridlines, just outside a map. The grid, letters and numbers allow you to pinpoint a place or feature by stating its alphanumeric grid reference.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 A map of Canberra and its suburbs with an overlaid alphanumeric grid



 **Watch this eLesson:** Using alphanumeric grid references (eles-1642)

 **Try out this interactivity:** Using alphanumeric grid references (int-3138)

11.6 What is life like in a country town?

11.6.1 The attraction of the country

Country towns come in all shapes and sizes. They can be small centres with a post office and general store or they can be substantial towns. Because most of Australia’s population and businesses are concentrated in the capital cities, even people who live in quite large towns outside the capital cities see themselves as living in the country.

Even though most Australians live in large urban centres, the rural or country regions are very important because this is where food is grown, water is sourced, **natural resources** are extracted and ecosystems can flourish. Many Australians travel to country places for holidays and many dream of moving to the country. The attractions of country places include cheaper housing, less traffic and a greater sense of safety.

11.6.2 Demography

Narrogin is a country town approximately 190 kilometres south-east of Perth. It is a regional centre in a very productive wheat- and sheep-farming area. The population of the town has remained fairly stable at around 4300 people for the past few years, but it is ageing. Prosperous towns like Narrogin become the focus for significant sporting and cultural organisations; the region’s recreation complex is usually located in such towns.

Kellerberrin, located on the Great Eastern Highway, is a smaller town approximately 200 kilometres east of Perth. The town has a population of around 1100 people and is located in wheat-growing country. Kellerberrin has far fewer community facilities than Narrogin.

TABLE 1 Actual and projected population figures for selected Western Australian urban centres

Year	Perth		Narrogin		Kellerberrin	
	Population	% growth	Population	% growth	Population	% growth
2011	1 819 560		4360		1210	
2016	2 004 260	+10.15	4220	-3.21	1080	-10.74
2021	2 225 210	+11.02	4180	-0.95	990	-8.33
2026	2 448 150	+10.02	3890	-6.93	880	-11.11

Source: Adapted from ‘WA Tomorrow 2015’, <https://www.planning.wa.gov.au/publications/6194.aspx>.

A sense of belonging

People who live in country centres have a strong sense of identity, connectedness and belonging. Towns like Kellerberrin and Narrogin feature a range of sporting clubs including Australian Rules football, hockey, netball, equestrian, athletics and cricket. These clubs cater for all age groups, and there is a strong focus on junior sport. Cultural activities like art exhibitions and theatre groups tend to be found in the larger towns. Declining populations have affected the ability of smaller towns to field teams in some major sports, and the range of cultural activities is also shrinking. A recent service now common in country towns of all sizes, however, is the Community Men’s Shed. Here, retired men meet to undertake practical projects with a community focus.

FIGURE 1 Growing up in a country town might mean ...



FIGURE 2 Lawn bowls is a popular sport in small towns.



11.6 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. In which direction would you travel from Narrogin to reach Perth? In which direction would you travel from Kellerberrin to get to Perth?
2. Provide three reasons why country **places** are important.

Explain

3. Classify each of the characteristics in figure 1 as economic, social or **environmental**.
4. Identify the characteristics in figure 1 that are attractive to you. Are most of these characteristics social, economic or **environmental**?
5. What are three opportunities in your community for young people to feel socially connected?

Discover

6. Study the data in table 1.
 - (a) The population of Perth is predicted to _____ between 2011 and 2026.
 - (b) How many people will have left Narrogin between 2011 and 2026? How many will have left Kellerberrin?
 - (c) Which town will be most affected by falling population? Explain why.
 - (d) Suggest why different groups such as teenagers, families and elderly people might leave towns such as Narrogin and Kellerberrin.
7. Indigenous Australians have always had a sense of belonging to a **place**, and elements of the natural **environment** are honoured on their flags. Find out what the Aboriginal flag and the Torres

Strait Islander flag look like. What aspects of the natural **environment** are represented on each of these flags?

8. As a class or group, brainstorm the meaning of the term *country life*. Create a list of words that describe your agreed view. Choose a suitable strategy to convey your representation of rural living.
9. (a) Create a list of Australian country towns that you have heard of.
(b) Collaborate with others to map the location of each of these towns.
(c) For each town, record its latitude, distance and direction from the state capital city.
(d) Complete the following generalisation about the known towns:
'Most of the towns we know are located _____'.

Think

10. In Australia, the trend is for people to move away from the country to the major cities. Suggest three reasons why you think this happens.

learn **on** RESOURCES — ONLINE ONLY

 Try out this interactivity: Country town services (int-3092)

11.7 How are places influenced by seasons?

Access this subtopic at www.jacplus.com.au

online
only

11.8 Do places change over time?

11.8.1 On the move

A town will change over time if the factors influencing people's decision making about living there also change. Change may be due to government plans, the perception of the natural environment, the economic activities that are carried out in the place and access to resources and other places.

The original buildings in Tallangatta, in north-east Victoria, about 40 kilometres from Albury and Wodonga, can be seen only when the water level in Lake Hume is very low. The current town was moved from its original location in 1956. Houses were lifted onto trucks (with parts of the buildings often falling off during the journey) and moved about eight kilometres (see figure 1). The original site, in a valley beside the Mitta Mitta River, was flooded when the size of Lake Hume was increased.

11.8.2 Town closed

In 1917, it was decided that a town was needed on the dry and very warm Nullarbor Plain to provide services for the Indian Pacific railway (see figure 2). With a population of 300, the town of Cook was once big enough to have a school, hospital, shop and accommodation for train drivers. When the railways were privatised in 1997, the town was closed. The population now stands at four, and the one shop is open only when the Indian Pacific is in town.

FIGURE 1 A Tallangatta house being moved to the new town site



FIGURE 2 The location of Cook



Source: Spatial Vision

11.8.3 Access to resources Resource depletion

Silverton, 25 kilometres north-west of Broken Hill, was once home to 3000 people who mainly worked in mining (see figure 3). Most people left, often taking their homes, when richer mines opened at Broken Hill. The current population is 50, and the town is now visited by many tourists. The town and its semi-arid surroundings have been used as the setting in many films, such as *Mad Max 2*, *Dirty Deeds*, *Mission Impossible 2* and *The Adventures of Priscilla, Queen of the Desert*.

Resource discovery

Karratha is a hot, dry place 1600 kilometres north of Perth. It was founded in the 1960s for workers on the growing iron ore mines in the Pilbara region. In the 1980s the development of the natural gas industry encouraged further growth. The town currently supports about 28 000 people and is expected to support up to 40 000 by 2030.

11.8.4 Sea change

Margaret River, 270 kilometres south of Perth, has become popular because it offers a rural lifestyle and is accessible to the capital city. People who move from the city to the coast are said to have made a 'sea change'. Those who move to an inland location are said to have made a 'tree change'.

FIGURE 3 The hotel in Silverton and the surrounding landscape have been used in films such as *Mad Max 2*.

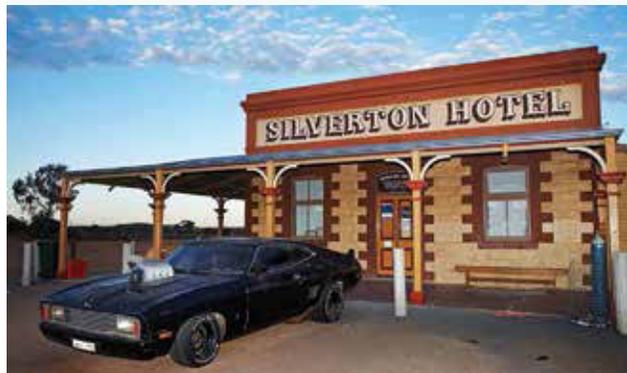


FIGURE 4 The planned town of Karratha



Change over time

Many people now recognise that the Margaret River region has many attractions, such as beaches, waterways, caves, wineries, national parks and mild weather that suits farming and tourism.

However, what people have thought about the region has changed over time. Before 1830, the Noongar people, including the Wardandi Nation, valued the natural characteristics (such as flora, fauna, weather, sea and rivers) and made few changes to the natural environment. In 1830, white settlers arrived to cut down trees and sell timber. In 1950, they began using the cleared areas for dairy cattle and beef cattle.

Tourists also began to value and visit the region's natural features, such as beaches, rivers and caves. By 1970, people were moving from the city to enjoy the quiet country atmosphere and, by 1990, the area had become popular as a sea change destination.

FIGURE 5 The Bussell Highway — the main street in Margaret River — 1991



TABLE 1 Population change in Margaret River

Year	Population of town
2001	3627
2006	4415
2011	5314
2016*	6700
2021*	8500

* predicted population

TABLE 2 Origin of people who moved to Margaret River, 2006–2011

Previous place of residence	Number
New South Wales	83
Victoria	35
Queensland	44
South Australia	30
Western Australia	1004
Tasmania	13
Northern Territory	20
Overseas	365

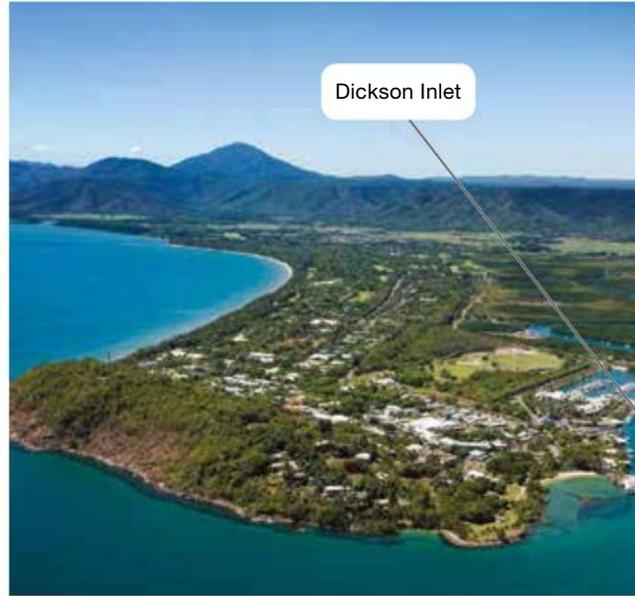
11.8.5 Tourism

Port Douglas, 60 kilometres north of Cairns, was a busy port in the 1870s and had a population of more than 10 000. The mining that had attracted people to this hot, wet area did not last. By the 1960s, the population was only 100. In the 1980s, road and air access to the town improved. People were prepared to travel long distances from within Australia and from overseas to enjoy the warm weather, stunning beaches and the World Heritage areas of the Great Barrier Reef and Daintree rainforest. The permanent population is now about 1300. During the peak holiday season (May to November) there are at least four times this number of people in Port Douglas.

FIGURE 6 Port Douglas in 1971, before the tourist boom



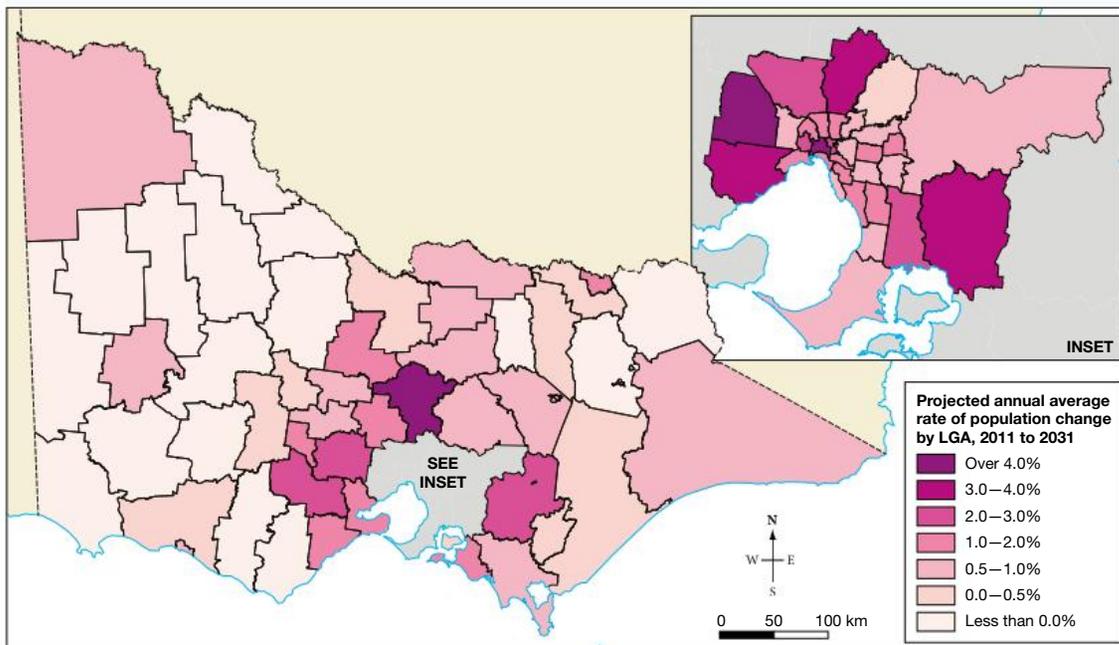
FIGURE 7 Port Douglas in 2009



11.8.6 Change in the future

Even in a small state like Victoria, predicted population growth varies across the state. Towns relying on big farms are predicted to lose population. The use of machinery and the closure of processing plants have reduced employment opportunities. Towns in regions very close to Melbourne are predicted to grow. People who live in these places still have access to jobs and entertainment in Melbourne even though they live in regional Victoria. More people means there is a need for more businesses.

FIGURE 8 Projected population change for regional Victoria, 2011–2031



Source: The Department of Environment, Land, Water and Planning.

11.8 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Which water storage drowned old Tallangatta? How far was the town moved?
2. In which region of Western Australia is Karratha?
3. What now draws people to Silverton?
4. What is the population of Port Douglas in the peak holiday season?

Explain

5. (a) How many states does the Indian Pacific travel through?
(b) Why do you think the train is called the Indian Pacific?
(c) In which general direction does the train travel from Sydney to Perth?
6. Read the description of the **change** over time for Margaret River. Create a timeline to show the **changing** view of Margaret River.
7. (a) Refer to tables 1 and 2 and calculate the population increase between each census. In which time period was the greatest population increase in Margaret River?
(b) What are the three main **places** new residents came from to settle in Margaret River between 2006 and 2011?
8. Refer to your atlas or find a climate graph and suggest why May to November is the peak holiday season in Port Douglas.
9. Refer to the map in figure 8.
(a) Describe the location of the areas predicted to grow by more than 3 per cent. For, example, are they inland or by the coast? Are they in the north, south, east or west of the state? Are they clustered together or spread out? Are they close to Melbourne?
(b) What will happen to towns in the □ regions?
(c) Estimate the proportion of Victoria that is predicted to increase its population and the proportion that is predicted to decrease its population.
10. Find maps of Victoria that provide information about landform and climate. Refer to your maps and figure 8 to complete the following.
(a) Think about landform and population **change**. Are most areas of declining population in **places** that are not mountainous? Are most areas of increasing population on the coast side of the mountains?
(b) Think about climate and population **change**. Are most of the highest growth population areas in **places** where rainfall is over 600 millimetres per year? Are most areas of declining population in **places** where the rainfall is lower?
(c) What might be reasons for your findings in (a) and (b)?

Discover

11. (a) Draw a sketch map of natural features at Port Douglas in 1971. Show the ocean, promontory, Dickson Inlet, flat land and hills. Add the settlement features (such as housing, roads and marina).
(b) Using another colour or an overlay, show the settlement features for 2009.
(c) Annotate your map to describe the **changes** that have occurred and the **changes** you think will happen in the next 10 years.
12. Provide another example of a town in Victoria that has **changed**. Clearly describe its geographic characteristics:
 - location — state, latitude, distance and direction from your school
 - surrounding landform
 - climate
 - significant physical features (e.g. mountain, river, ocean or lake).Collect images and data to show that **change** has occurred. Explain why the town has **changed**. Possible sources of information include your atlas, the local council, local newspaper and the Australian Bureau of Statistics.

Predict

13. Look at figure 5. What do you think the main street in Margaret River looks like today? Predict what you would expect to see in terms of the road, footpaths, plants, types of shops, types of buildings and open spaces. Use Google Street View and check your hypothesis. Do you think Street View visited at a busy holiday time?

Think

14. Factors that cause **change** can be categorised as social (related to people), economic (related to money) or **environmental** (related to setting or surroundings). Consider all the reasons for **change** provided in this subtopic and list each in its correct category. Use a different colour to add any other reasons not presented in this subtopic.

Look at your list to help you decide if you agree with the following statement: '**Environmental** factors are the main reason why towns **change**'. Compose a clear paragraph to express your opinion. The first sentence will clearly state your view. The rest of the paragraph should contain at least two pieces of evidence to support your view.

15. What would be the advantages and challenges of living in a town like Port Douglas, which relies on tourism? Use speech bubbles like the ones to the right.

It would be good because ...

But ...

11.9 What are isolated settlements like?

11.9.1 Way up north

Life in some towns is strongly influenced by geography. It is now possible to live in extreme conditions and be socially connected while enjoying access to a wide range of goods, services and community activities.

Dawson, with a population of 2000, is the second largest city in the Canadian state of Yukon. At the latitude of 64°N, it is only about 360 kilometres from the Arctic Circle.

Dawson is a long way from neighbouring towns. It is 770 kilometres from the next town to its north (Inuvik) and 810 kilometres to Anchorage, the largest town in Alaska.

11.9.2 Climate

TABLE 1 Average hours of sunlight at Dawson, Yukon and Longreach, Queensland

Month	Dawson, latitude 64°N	Longreach, latitude 23°S
January	4	13.5
February	6.9	13
March	10.2	12.5
April	13.7	12
May	17.1	11
June	20.6	11
July	21.4	11
August	18.1	11
September	14.6	12
October	11.2	12.5
November	7.8	13
December	4.7	13.5

FIGURE 1 Location of Dawson, Yukon, Canada



Source: Spatial Vision

11.9.3 Settlement

The site of Dawson, on the junction of the Yukon and Klondike rivers, was always an important hunting and meeting site for indigenous peoples, who still live in the area. The harsh climate deterred white colonisers from the area until gold was discovered in 1896. The population grew by thousands every week, quickly reaching 30 000.

However, most people did not stay long. Living conditions were very poor: people lived in tents and huts; they had no power, water or sewerage; and crops would not grow in the low temperatures. The **permafrost** also made it difficult to dig the foundations for buildings. Furthermore, it turned out that the gold was not accessible: it was in gravel that was frozen for most of the year.

Today

Today the town has **infrastructure**, and housing is solid and heated. The community of Dawson operates year round, with the climate having a strong influence on activities. A road to Alaska has encouraged tourism, and new mining techniques have increased goldmining.

The weather conditions mean that some jobs, such as road-making and building, cannot be done in the winter. Some of those employed in these industries move south in the winter, either for work or holidays.

The town of Dawson is no longer completely isolated in winter. Internet and phone connections allow communication; snow-ploughing and spreading of sand keep the roads open most of the time; and planes fly in and out all year.

The weather influences many aspects of social life in Dawson. The ‘Thaw di Gras’ carnival celebrates the end of winter, and music festivals and a kayak marathon take place in summer. Winter is the time of snowmobile treks, skiing and the famous Yukon Quest dog-sled race from Whitehorse (Yukon) to Fairbanks (Alaska). During the race, dogs and mushers (sled drivers) need protection from the cold, but if the weather warms to minus 4 °C, it becomes too hot for the dogs to travel during the day.

FIGURE 2 Climate graph, Dawson

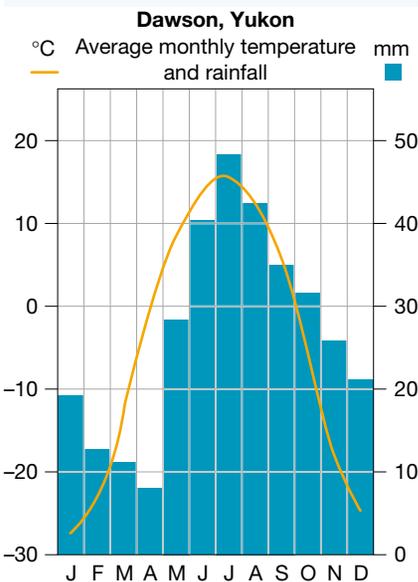


FIGURE 3 It is so cold in winter that the Yukon River freezes over, and the ice is thick enough to support fully loaded trucks.



11.9 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Refer to the map in figure 1. How far is Dawson from Whitehorse, the state capital?
2. (a) What influenced indigenous peoples to live in the Dawson area?
(b) Why did people move to Dawson in 1897?
(c) What influences people to live in Dawson nowadays?

Explain

3. List at least four ways in which the natural **environment** has influenced the settlement of this area.
4. What factors have improved liveability in Dawson?
5. (a) Construct a multiple bar or column graph to show the average number of hours of sunlight at Dawson and Longreach.
(b) On your graph, use colour, shading or symbols to show summer and winter at each location.
(c) Write one statement that is true for both Dawson and Longreach about their hours of sunlight.
(d) Imagine you live in Dawson, where the school year is from August to June. In which months would you arrive or leave in the dark?
6. Activities in Dawson include volleyball, curling, film festivals, craft, dances, motorcycle riding, gold panning, softball, writing workshops and outhouse races. Which of these would occur only in summer? Which would occur only in winter? Which could occur all year?

Discover

7. Use the **Bureau of Meteorology** weblink in the Resources tab to find the average monthly temperatures for your location. Present the statistics for the minimum and maximum temperature in a graph. Compare your graph to the one provided for Dawson. Write three clear statements comparing the average monthly temperatures of Dawson and your location. Write three clear statements comparing the monthly rainfall for Dawson and your location.

Predict

8. Which months of the year would be most popular for tourists visiting Dawson City? Provide at least two reasons to support your answer.
9. How do you think the climate would make school life in Dawson different from your life?

Think

10. What do you think happened to the early buildings when the heating from houses warmed the soil and melted the permafrost?
11. How have people tried to overcome the disadvantages of this location?

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 Explore more with this weblink: Bureau of Meteorology

11.10 Are all settlements permanent?

Access this subtopic at www.jacplus.com.au

online only

11.11 What is Old Delhi like?

Access this subtopic at www.jacplus.com.au



11.12 How is modern India changing?

Access this subtopic at www.jacplus.com.au



11.13 Review



11.13.1 Review

The Review section contains a range of different questions and activities to help you revise and recall what you have learned, especially prior to a topic test.

11.13.2 Reflect

The Reflect section provides you with an opportunity to apply and extend your learning.
Access this subtopic at www.jacplus.com.au

11.3 SkillBuilder: Understanding satellite images

11.3.1 Tell me

What are satellite images?

Satellite images are images that show parts of our planet from space. They are taken from satellites and transmitted to stations on Earth. Satellites can collect a variety of data, including standard photographic imagery, colour infra-red and radar data. They can show Earth in close-up or from far away. Special computer techniques allow data from satellites to be used to highlight patterns on the Earth's surface.

The most common type of satellite image comes from Landsat satellites. They are positioned 700 kilometres above the ground, orbiting the Earth every 100 minutes, and they use special cameras to detect variations in the light reflected from features on Earth. The process of detecting and recording the reflection of light is known as remote sensing.

FIGURE 1 A false-colour satellite image of the Mt Lofty Ranges



Source: Landsat 7

Why are satellite images useful?

Satellite images help geographers observe a much larger area of the Earth's surface than photographs taken from an aircraft. They can also provide data relatively quickly, so they are often used to monitor natural disasters, including cyclone activity, bushfires and floods. Digital information from satellites is beamed to stations on Earth as radar or microwave signals. Computers are then used to enhance the images, which enable the study of landforms, farmland, disasters, environmental change, weather patterns and even military targets.

Model

Different features can be highlighted in satellite images by selecting only certain bands of light reflected from Earth. These bands of light are assigned false colours to help reveal spatial patterns more clearly. In figure 1, showing the Mt Lofty Ranges in South Australia, the labels point out the patterns.

11.3.2 Show me

How to interpret a satellite image

You will need:

- a satellite image.

Procedure:

When you look at images taken from above, including satellite images, it can be confusing but you can improve with practice. The following steps can help you to systematically gather the most information you can from images. It is easier if you consider an image of a familiar place, but geographers are also interested in unfamiliar places.

STEP 1

Read the title and check for the date the image was taken. Read any accompanying information.

STEP 2

Identify the main features of the image. What stands out? For example, roads will appear as continuous lines intersected by other lines. Rivers tend to be snake-like, and sometimes you notice trees lining the riverbanks. Dwellings have rectangular roofs and are often clustered together.

FIGURE 2 Satellite image of Canberra, by GeoEye, 26 September 2011



Source: ©2016 Digital Globe

This image of Canberra is centred on new Parliament House, although the prominent central flag mast does not stand out. There appear to be wide circular roads and, if you can zoom in, cars are visible.

STEP 3

Look for and label the biophysical features. For example, the black area is Lake Burley Griffin. Green vegetation in a city might be planted or it might be remnant vegetation. Look at the patterns of green to make predictions. Remnant (or remaining) vegetation will often be in an irregular pattern, whereas planted vegetation may be in rows.

STEP 4

Look for and label the built features, such as roads, bridges, sports stadiums and residential housing. Again, look at patterns. Areas of small roofs with road access and surrounding vegetation suggest detached residential housing.

STEP 5

Some colours, patterns and shapes may still be puzzling. Obtain a map of the same area — try an atlas or street directory, Google Maps, Bing or Nearmap. Find names of key features to use in your description. If the features you have identified are shown on the map, check whether your analysis so far matches the map. Use the map to investigate the aspects that are still puzzling. Be aware that the image may have been taken at a different date from the date the map was produced; this might explain other differences in what you see.

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 Watch this eLesson: Understanding satellite images (eles-1643)

11.3.3 Let me do it

Developing my skills

If you have ever holidayed at the Gold Coast, you may have visited the Currumbin Wildlife Sanctuary. Currumbin generally has more natural vegetation than much of the Gold Coast (see figure 3), partly because it is more difficult to build on the steep hills there and partly because the forests are valued as wildlife habitat. Currumbin is a popular surf beach and holiday destination.

FIGURE 3 Satellite image of Currumbin on Australia's Gold Coast, 8 May 2000



Source: Satellite image courtesy of GeoEye. Copyright 2009. All rights reserved

Questions

Using the figure 3 image of Currumbin, answer the following questions.

1. Look carefully at the satellite image and make a list of features you can recognise.
2. Find the bridge that crosses Currumbin Creek. Are there any cars on the bridge?
3. What impact have visitors had on the plant life behind the beach?
4. Go to Google Maps and zoom in to Currumbin Beach, Queensland, to find a map of the area shown in figure 3. Turn the satellite layer on. What changes can you see?
5. Suggest how the biophysical features and topography have influenced the settlement pattern in this area.

Checklist

I have:

- checked the title
- identified biophysical and built features
- compared the satellite image with another map to check my interpretation.

Skills questions

1. Satellite images are used to show:
 - (a) a bird's-eye view of the Earth
 - (b) the contours of an area
 - (c) how difficult it is to walk in an area
 - (d) prevailing winds.
2. The Landsat satellites orbit the Earth:
 - (a) once a day
 - (b) every 100 minutes
 - (c) every four hours
 - (d) twice a week.
3. What are three types of imagery that can be collected using satellites?
4. Outline two advantages of satellite images.

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 Try out this interactivity: Understanding satellite images (int-3139)

11.4 Where is the fastest growing place?

11.4.1 The growth suburbs

Which place in Australia is growing the fastest? If a place is liked by lots of people, does that make it the best? What makes a suburb the most popular? Coastal areas have always been a popular place for Australians to relax and holiday. Is the fastest growing place in Australia near the coast?

People might move to a new place for many different reasons. The attractions that entice people to live somewhere are called its **pull factors**. Pull factors include cheaper housing, better climate, more job opportunities and improved lifestyle. People can also be forced to leave their home and move to a new place. These reasons are known as **push factors**. Loss of your job or business, poor school or health facilities, and a natural disaster, such as flood or fire, are examples of push factors.

The Australian Bureau of Statistics, which collects information for the Australian Government, says that four out of the five fastest growing suburbs in Australia are in the outer north, west and south of Melbourne. The fifth is near the Gold Coast, south of Brisbane. Over recent years, Melbourne has been Australia's fastest growing capital city. It is not surprising that it often tops tables as the world's most liveable city.

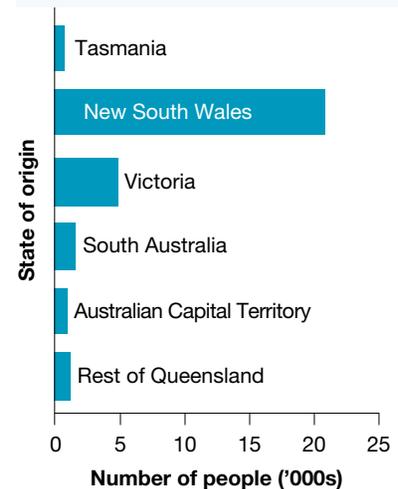
What makes the Gold Coast such a great place to live?

The Gold Coast's warm weather, beach culture and holiday lifestyle have attracted many new residents. Figure 1 shows that most of the new arrivals came from New South Wales. Many were attracted to the place their family visited on holiday, and they later decided to make it their permanent home. The Gold Coast is now the sixth-largest urban area in Australia. It is a major tourist destination, offering a wide range of work opportunities, community facilities and intercity and interstate transport links by road, rail and air. Many new residents are older Australians who have retired to this place.

The increased population has placed pressure on the coastal environment, as well as on the existing infrastructure of schools, hospitals, roads and housing.

Use Nearmap or Google Maps to access an **aerial photograph** of the Gold Coast region today. Compare this to figure 2, showing the changes that have occurred to the land use here over the past 50 years.

FIGURE 1 Net migration to the Gold Coast



Why was the Gold Coast chosen for an AFL expansion team and the 2018 Commonwealth Games?

The main AFL states are Victoria, South Australia, Western Australia and Tasmania, along with the Indigenous communities of the Northern Territory. In March 2009, the Gold Coast Football Club, now named the Gold Coast SUNS, was established, supported financially by the Australian Football League (AFL). The club's establishment on the Gold Coast has seen a rise in youth participation in AFL.

The six largest Australian cities now have at least one AFL club: Sydney (2 clubs), Melbourne (9 clubs), Brisbane (1 club), Perth (2 clubs), Adelaide (2 clubs) and Gold Coast (1 club).

The Gold Coast has also been chosen as the place where the Commonwealth Games will be held in 2018. Metricon Stadium at Carrara, the home of the Gold Coast SUNS, will be temporarily transformed and increased in capacity to host the athletics events as well as the opening and closing ceremonies for the 2018 Gold Coast Commonwealth Games. Australia has hosted five Commonwealth Games, but this is the first time that they have not been held in a state capital city.

FIGURE 2 Topographic map extract of the Gold Coast region in 1967



Source: Spatial Vision

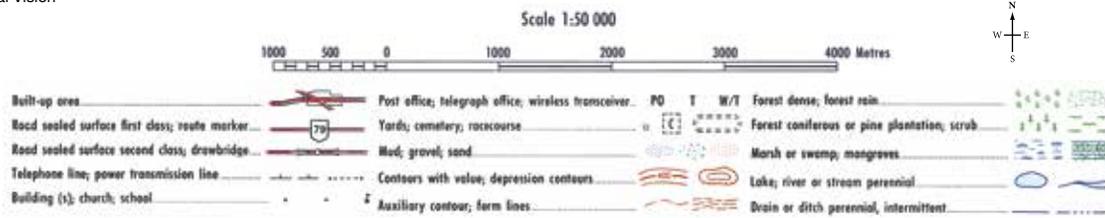


FIGURE 3 The new ground developed for the Gold Coast SUNS AFL team



11.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What features of the Gold Coast have made it grow so quickly?
2. Where have most of the new residents of this **place** come from?

Explain

3. What services, facilities and environmental attractions does the Gold Coast offer to people wishing to find a more liveable **place** to retire to?
4. Use examples to explain the difference between the environment, services and facilities that make up the push and pull factors which result in the rise or fall of the population of a place.
5. Think about the **place** where you live. Make a list of the pull factors that make your town or suburb more liveable. Then list the possible push factors that might make someone leave your suburb or town to live somewhere else.

Discover

6. Compare figure 2 with the Nearmap or Google Maps aerial image of the same **place** today.
 - (a) In a small group, identify the changes to the **environment**, both built and natural, that you can identify between the map and the photo.
 - (b) Collate this information in a table.
 - (c) Write one sentence to describe the change to the built **environment**.
 - (d) Write one sentence to describe the change to the natural or physical **environment**.
 - (e) The population of the Gold Coast is predicted to double to 1.2 million people by 2050. Is there much **space** left in this area of the Gold Coast for housing? Suggest where new suburbs could be established.

Predict

7. Using your knowledge of the factors that have made the Gold Coast so liveable and grow so fast, use your atlas to identify another **place** that could become the 'new' Gold Coast. Identify the pull factors for your location and write a paragraph to sell its advantages to potential residents.

11.5 SkillBuilder: Using alphanumeric grid references

11.5.1 Tell me

What are alphanumeric grid references?

Alphanumeric grid references are a combination of letters and numbers that help us locate specific positions on a map. They are linked to the lines that form a grid over certain kinds of maps. The letters and numbers are placed alongside the gridlines, just outside the map. The grid, letters and numbers allow you to pinpoint a place or feature by stating its alphanumeric grid reference.

Why are alphanumeric grid references useful?

If it weren't for grid references, finding places in detailed books of maps such as street directories and atlases would be very time consuming. Grid references allow the user to quickly locate the information they want among the hundreds of other features shown on a map. They also allow people to communicate with one another about location when they are using the same map.

Model

FIGURE 1 A section of the Melbourne CBD



Source: Russell Tate / Getty Images Australia

11.5.2 Show me

How to use alphanumeric grid references

You will need:

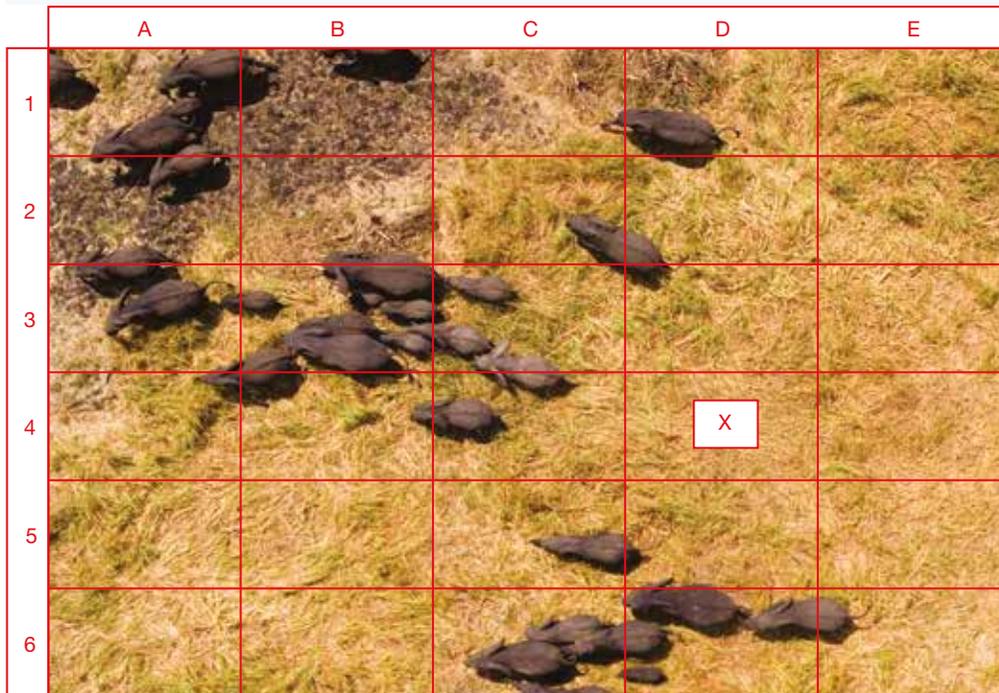
- a map that has alphanumeric grid references, such as a street directory
- a ruler.

Procedure:

STEP 1

Practise with the photo in figure 2 first. In this aerial photograph of elephants in Botswana, we want to locate the veterinarian, Jessica, who is at point X.

FIGURE 2 Aerial photo of elephants in Botswana



STEP 2

Place your finger in the grid square that contains the X. By running your finger up the column of squares, you can see that Jessica is in column D, and by running your finger across the row of squares, you can see that she is in row 4. Therefore, the grid reference for Jessica's location is D4.

STEP 3

Now follow the same process using your street directory. Identify a feature. From the grid square in which your chosen feature sits, run your finger up or down the column until you see a letter at the edge of the map. Write this down in your notebook. Go back to the grid square and run your finger across the row of squares until you see a number at the edge of the map. Write this after the letter you wrote down. Now write the name of the feature beside the grid reference.

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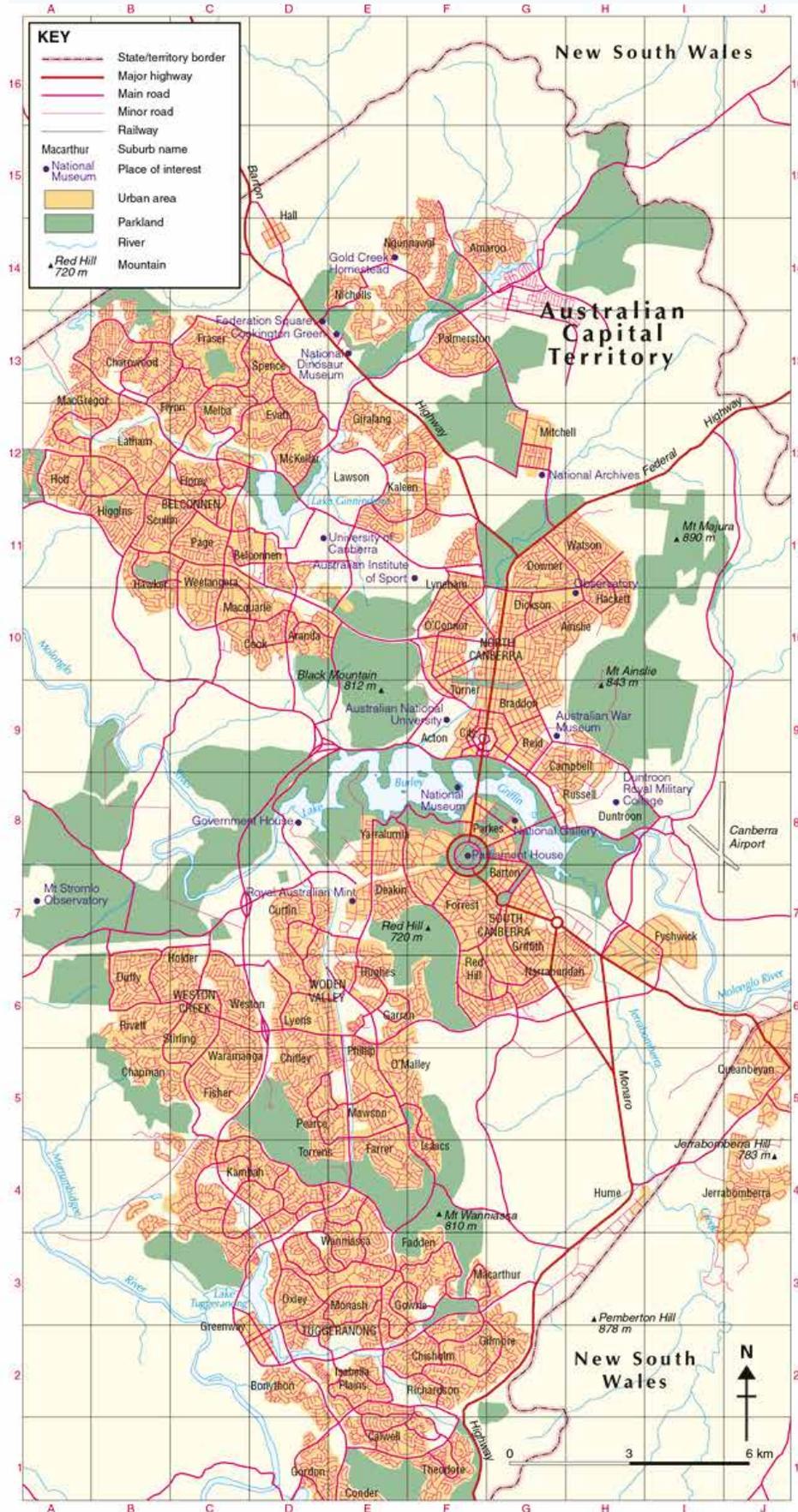
 Watch this eLesson: Using alphanumeric grid references (eles-1642)

11.5.3 Let me do it

Developing my skills

Use a street directory and the map of Canberra shown in figure 3 to answer the questions that follow.

FIGURE 3 Canberra and its suburbs



Source: MAPgraphics Pty Ltd, Brisbane.

Questions

1. Give grid references for the following features:
 - Canberra airport
 - Queanbeyan
 - Mt Ainslie.
2. The prime minister is hosting a group of leaders from the Asia–Pacific region. As part of their trip, the leaders will be visiting some of the local attractions in and around Canberra. Use the Canberra map and the following grid references to report on the places the group visited.
 - Before lunch the group went to E7, E13 and F11.
 - They had lunch at F9.
 - After lunch they visited G9 and H8 before making their way to A7.
 - That night they had dinner at D8.

Checklist

I have:

- run down the column of squares first and then run across the row of squares (and not the other way around)
- written the letter of the alphabet before the numeral
- double-checked my answer.

Skills questions

1. Alphanumeric grid references on a map help us to answer which of the following questions?
 - (a) When did it happen?
 - (b) Why did it happen?
 - (c) Where is it?
 - (d) Who is it?
2. Alphanumeric grid references are written:
 - (a) letter first, numeral second
 - (b) numeral first, letter second
 - (c) either letter or numeral first; it doesn't matter
 - (d) either letter or numeral first, depending on the type of map.
3. What is an alphanumeric grid reference?
4. Why are alphanumeric grid references useful?

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 Try out this interactivity: Using alphanumeric grid references (int-3138)

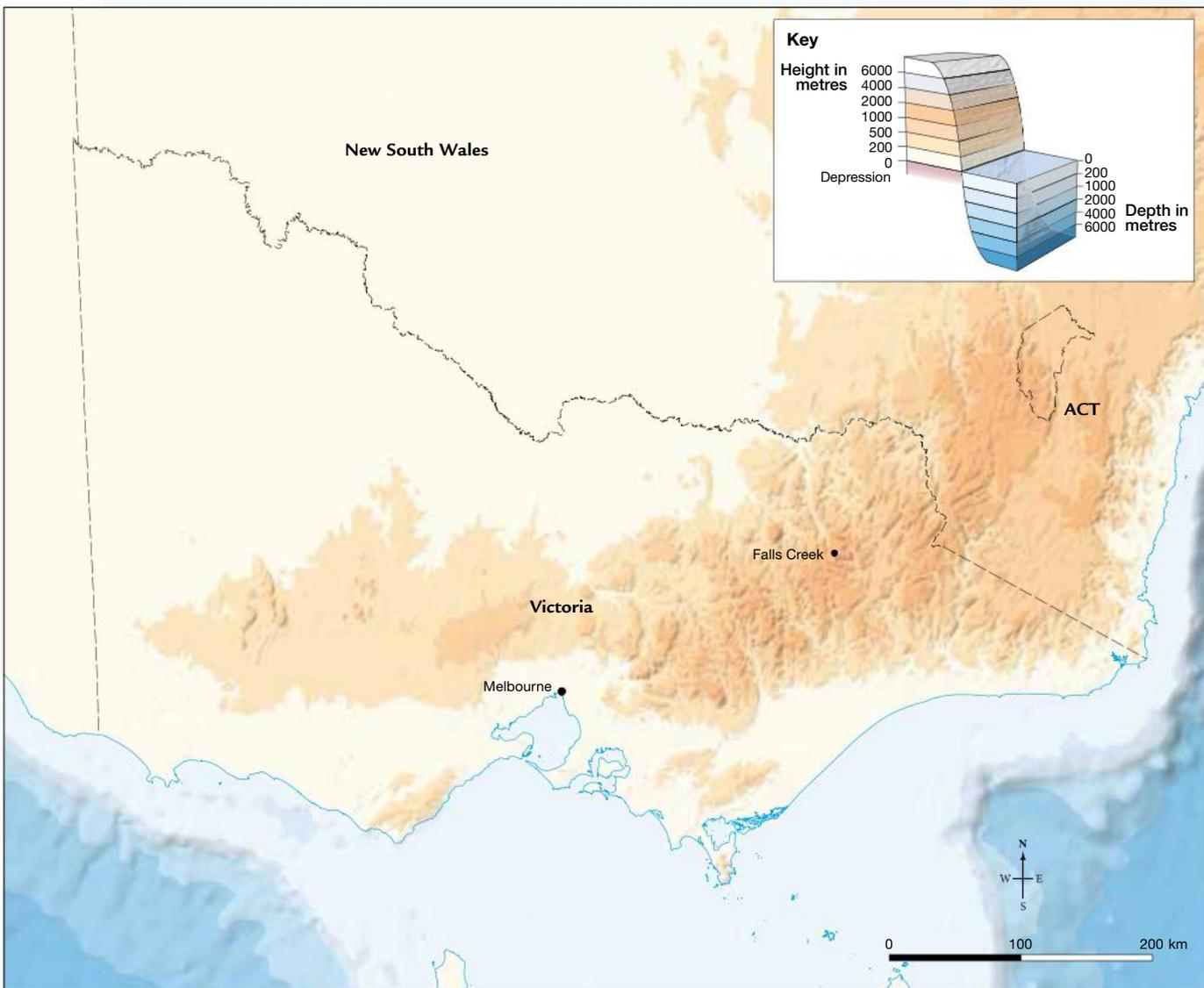
11.7 How are places influenced by seasons?

11.7.1 Falls Creek — a seasonal village

Many aspects of the way people live are influenced by the seasons. Our recreational activities, transport, housing features and clothing often change throughout the year. In some towns, there are changes in business activity and population as seasons change.

Falls Creek is located in north-east Victoria about 20 kilometres south of Victoria's highest mountain, Mt Bogong. It is in the Great Dividing Range, which extends from northern Queensland to western Victoria. As a ski resort, Falls Creek is very busy in winter and quiet in the summer. The village sits at an **elevation** of 1765 metres above sea level.

FIGURE 1 Location of Falls Creek, a ski resort in Victoria



Source: Spatial Vision

11.7.2 Climate

Falls Creek is much cooler and wetter than places at a similar latitude. It holds several rainfall and temperature records in Victoria.

- Lowest temperature: $-11\text{ }^{\circ}\text{C}$ (3 July 1970)
- Highest monthly rainfall: 989.6 mm (July 1964)
- Highest annual rainfall: 3738.5 mm (1956)

The elevation of Falls Creek means the air is always cooler, which increases the chances of rain or snow. The southern **aspect** of the ski slopes means that the snow remains on the slopes for longer.

FIGURE 2 Elevation and temperature: the higher a place is above sea level, the less heat it receives.

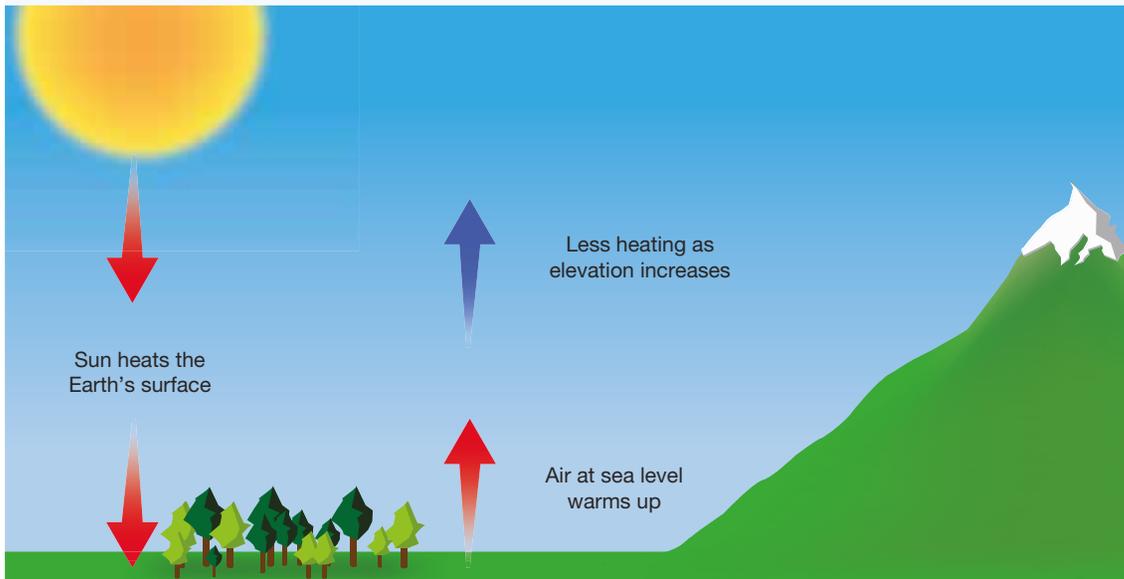
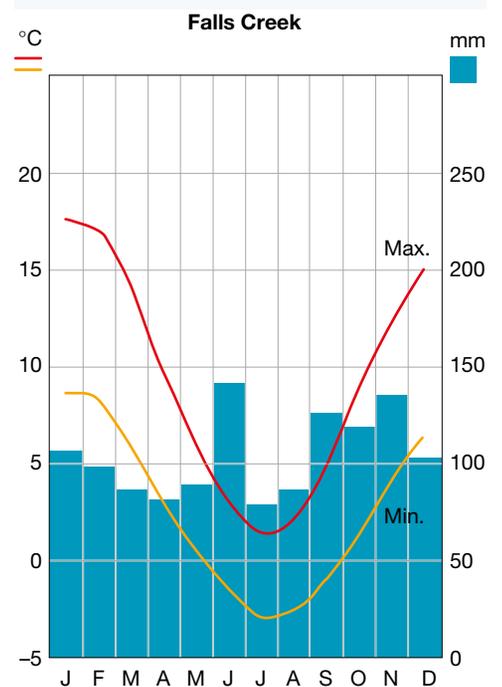


FIGURE 3 The influence of aspect on snow cover. The slope that does not face the sun is always cooler.



FIGURE 4 Climate graph for Falls Creek (latitude 36.87°S)



Snow is the major attraction at Falls Creek, and many snow-making machines are now used to improve snow cover and extend the ski season. Nearby Rocky Valley Lake provides plenty of water to feed into the high-pressure snow gun, but the temperature must also be very low (around $-2\text{ }^{\circ}\text{C}$) for the snow machine to work.

11.7.3 Seasonal activities

FIGURE 5 Seasonal activities include skiing and bushwalking.



TABLE 1 Some differences between summer and winter

Data	Summer	Winter
Population*	100 workers plus visitors	2000 workers plus visitors (can be 2500 at a time)
Visitor numbers [#]	35 000	130 000
Examples of type of work	Maintenance, building, road construction, revegetation and outdoor recreation	Maintenance, hospitality, snow activities, ski patrol and child minding
School enrolment*	10	40
Examples of activities	Cycling, bushwalking, fishing, altitude sports training, horse riding and tennis	Downhill skiing, cross-country skiing, snowboarding, snowshoeing, snow tubing, night skiing and snow bike riding
Special activities	Dragon boat races and alpine cycling competitions	Ice plunge, sled-dog races and skiing
Supermarkets	Open five days per week	Open seven days per week

Notes: *Numbers are approximate.

[#]Many visitors stay for several days.

11.7 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Remember

1. In which state of Australia is Falls Creek?
2. What is the special attraction that draws people to Falls Creek?
3. According to table 1, how many more people visit Falls Creek in winter than in summer?

Explain

- Using the description of the location of Falls Creek as a guide, describe the location of your town or city. Refer to your state, directions, distance and at least one other feature.
- Refer to the climate graph (figure 4) for Falls Creek. In which months would you expect it to snow?
- Explain why July would be a suitable month to operate the snow-making machines. Which other months could also be suitable?

Discover

- In which season is each of the following jobs most likely to be available at Falls Creek?
 - Child minder
 - Mechanic
 - Fitness trainer
 - Tennis coach
 - Ski instructor
 - Bicycle mechanic
 - Chef
 - Cleaner
 - Stable hand
 - Retail assistant
- How do the seasons influence the way of life in your town? Identify three aspects that **change** according to the season.
- In a group, brainstorm then create a list of towns that are busy in one season of the year. Choose one from the list and describe its location in at least three ways. In which season is the town busy? What is the attraction that draws people to the town?

Predict

- Over the past 50 years, there has been a general trend of a slight decrease in snowfall. If this trend continues, what impact will it have on the village of Falls Creek? Consider the impact on people (social impact), on business (economic impact) and on the natural surroundings (**environmental** impact).

Think

- Falls Creek has internet and mobile phone coverage. What influence do you think this would have on access to goods and services?
- Present the differences between summer and winter at Falls Creek in a visual format. Consider recreational activities, transport options, housing needs, clothing requirements and access to goods and services.

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 Try out this interactivity: Alpine regions — open or closed? (int-3093)

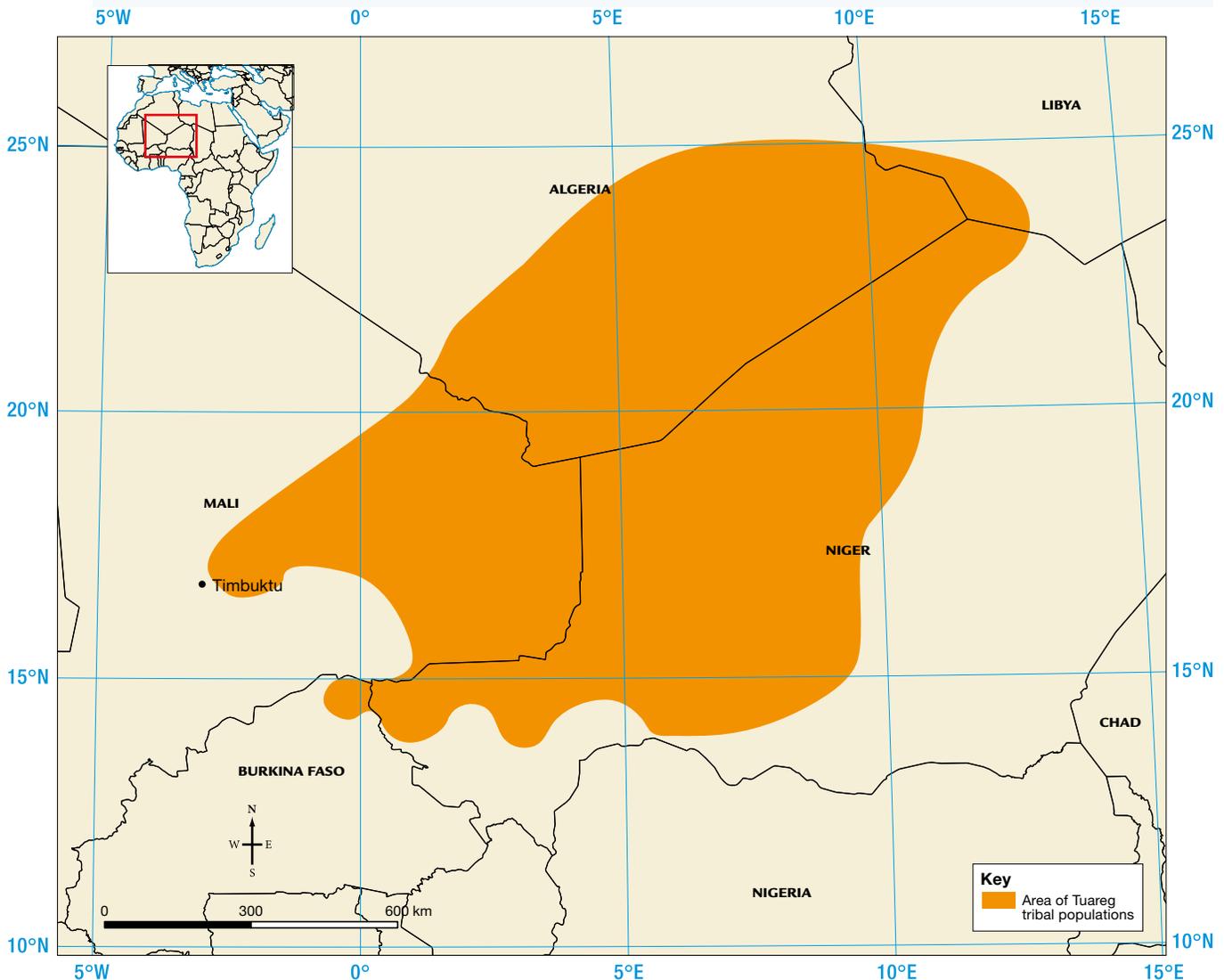
11.10 Are all settlements permanent?

11.10.1 Traditional Tuareg way of life

Most people live in the one place, but from time to time they may move to a new location. There are about 30 million people in the world who live a nomadic lifestyle. Nomads do not wander aimlessly. From time to time they pack up all their possessions and move, often returning to a place at some point in the future.

The Tuareg people (pronounced *twah-reg*) lead a nomadic way of life mainly in the Sahara Desert. A number of related families live in groups of 30 to 100. These groups usually move to a new site every two or three weeks, because the environment provides very little water and food.

FIGURE 1 Tuareg areas



11.10.2 A harsh environment

Timbuktu is a town in Mali (see figure 1) that has long been famous as a trading town. Here, goods such as salt were brought from the north across the Sahara, and goods such as gold came from the south.

FIGURE 2 Fulani traders in the Timbuktu market, Mali



Daytime temperatures are high and night-time temperatures can be cold. Rainfall is very low and unreliable. There can be long periods without rain and there can be sudden heavy downpours. Strong winds sometimes cause sandstorms that turn the sky yellow or orange, reduce visibility and cover everything with sand.

The climate means there is little vegetation and very little water in Timbuktu. Significant plant growth is only found at oases. This means that families have difficulty finding wood for cooking fires or vegetation for their animals. When firewood is unavailable, dried camel dung is used as fuel. When food for the animals is exhausted, the group must move to a new location. They move across the desert, traditionally finding their way by the stars, the moon and the landscape.

11.10.3 Nomadic herding

Animals have always been the most important possessions of the Tuareg people, and the need for grass and water for the animals is why the Tuareg people move from place to place.

FIGURE 3 Tuareg camels and goats



11.10.4 Household possessions

A nomadic way of life means that Tuareg families do not have many possessions, and the few they have must be light and portable.

For example, their housing is usually in the form of tents that have a simple structure. These provide shelter from heat in the daytime and from cold at night-time. Tuareg tents used to be made of skin and woven cloth but now they are often made of nylon. They are always placed so that the doorway is facing the non-wind side.

The main furnishings in their tents are rugs to cover the ground and to provide a sleeping mat. Sometimes a bed is constructed from palm slats resting on thin logs. Other furniture includes cushions and drawers or chests. A tent and other belongings can be packed up within a few hours.

For cooking, the Tuareg people use an open fire, sometimes with a hotplate. They use only a few utensils such as pots, containers, plates and spoons. Eating utensils are also minimal, and sometimes food is eaten by hand from a communal plate, as is customary across many different cultures around the world.

Tea is the most popular drink, and is the only food that includes sugar. A family will usually have a teapot and small cups, and the making of tea is a ceremony. Tea is offered to visitors and becomes part of business discussions.

FIGURE 4 A Tuareg man making tea outside his family tent in Mali



11.10.5 Clothing

The Tuareg people always wear clothing that covers them from head to toe. The men, who spend more time outside, wear a headscarf to cover their head, neck and much of their face. This is to prevent sunburn, stop the lips from cracking, and slow down the drying out of the mouth. Men over 18 years of age traditionally wear blue headscarves. Their long clothes also provide warmth during the coolest time just before sunrise.

11.10.6 Changes to way of life

In recent times, the Tuareg people have been forced to change their way of life for a number of reasons:

- Drought has reduced the amount of food available for the animals.
- Private ownership of land has reduced the areas in which the Tuareg can move.
- Political unrest has made some areas unsafe.
- Population growth has placed pressure on the available land.

An increasing number of Tuareg people are moving to the south and becoming semi-nomadic. This means they are in one location for a large part of the year. They are building more permanent buildings, such as **adobe** houses, and using some irrigation to help crops grow. Working for money is becoming more common, and children are sometimes able to attend school. Healthcare, such as the provision of vitamins to improve nutrition, is now reaching more people. Solar panels are being used in some areas to produce power to charge mobile phones, run solar cooking ovens and provide lights in schools.

Some traditions remain. Nomadic herding is still valued as the most important activity, and tents are still the main form of housing. Loose clothing is still popular, and the men are still well known for their blue scarves.

11.10 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Refer to figure 1.
 - (a) Name the five main countries through which the nomadic Tuareg people move.
 - (b) On which continent do the Tuareg people live?
 - (c) Do the Tuareg people live in the northern hemisphere or the southern hemisphere?

Explain

2. Identify and explain three ways in which the environment has influenced the traditional way of life of the nomadic Tuareg people.
3. Provide four reasons to explain why animals are highly valued by the Tuareg people. Suggest an item that is highly valued in Australian culture.

Discover

4. Refer to an atlas and complete the following.
 - For most of the region where the Tuareg people live, the population per square kilometre is _____.
 - Annual rainfall is _____.
 - Agriculture is _____.
 - GDP is _____.
 - Average January temperatures are _____.
 - Average July temperatures are _____.
5. Select another group of people who lead a nomadic way of life (such as the Awa, Penan, Orang Rimba or Tibetan nomads). Your task is to gather information about your chosen group. To guide your research, develop a key question for each of the following criteria: the environment, the people and the lifestyle. Represent your findings in at least three formats (such as a graph, a map, a satellite image, a photo, text or a diagram). Write three clear sentences to compare your group to the Tuareg people.

Predict

6. What do you think will happen to the Tuareg people's nomadic way of life in the future? Use a graphic organiser such as a web chart to present your suggestions. The central topic is 'Tuareg way of life in the future'. Each spoke will lead to an explanation of one aspect. Consider the influence of environmental factors (related to the natural world), economic factors (related to businesses and work) and social factors (related to people's welfare, hopes and attitudes).

Think

7. Compare a day in the life of a Tuareg nomad and yourself. Include:
 - (a) where and how you both live
 - (b) diet, clothing, housing type, possessions, settlement size, schooling, and travel. Present the comparison using annotated images (refer to the subtopic 8.8 SkillBuilder 'Annotating a photograph').

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 Try out this interactivity: Tuareg treks (int-3094)

11.11 What is Old Delhi like?

11.11.1 Old Delhi: past and present combined

Old Delhi is an area within the modern city of New Delhi in India. Old Delhi consists of the original walled city that dates back to 1639. It was founded by the Mughal emperor Shahjahan, and was known then as Shahjahanabad. The local people pride themselves on being a peaceful community in which Muslims, Hindus and Christians have lived together side by side for hundreds of years.

The British began developing the area now known as New Delhi outside the city walls of Old Delhi in about 1911. However, life has continued within the walls of the 6.1-square-kilometre old city, which still has its original 14 gates. This makes it just a little smaller than Lake Burley Griffin in Canberra, but with a population density of over 25 000 people per square kilometre!

FIGURE 1 Even though mobile phones are found everywhere in India, there is still room for a business that offers you a telephone line when you need it. The high buildings in Old Delhi mean that mobile reception is not good in many locations within the city walls.

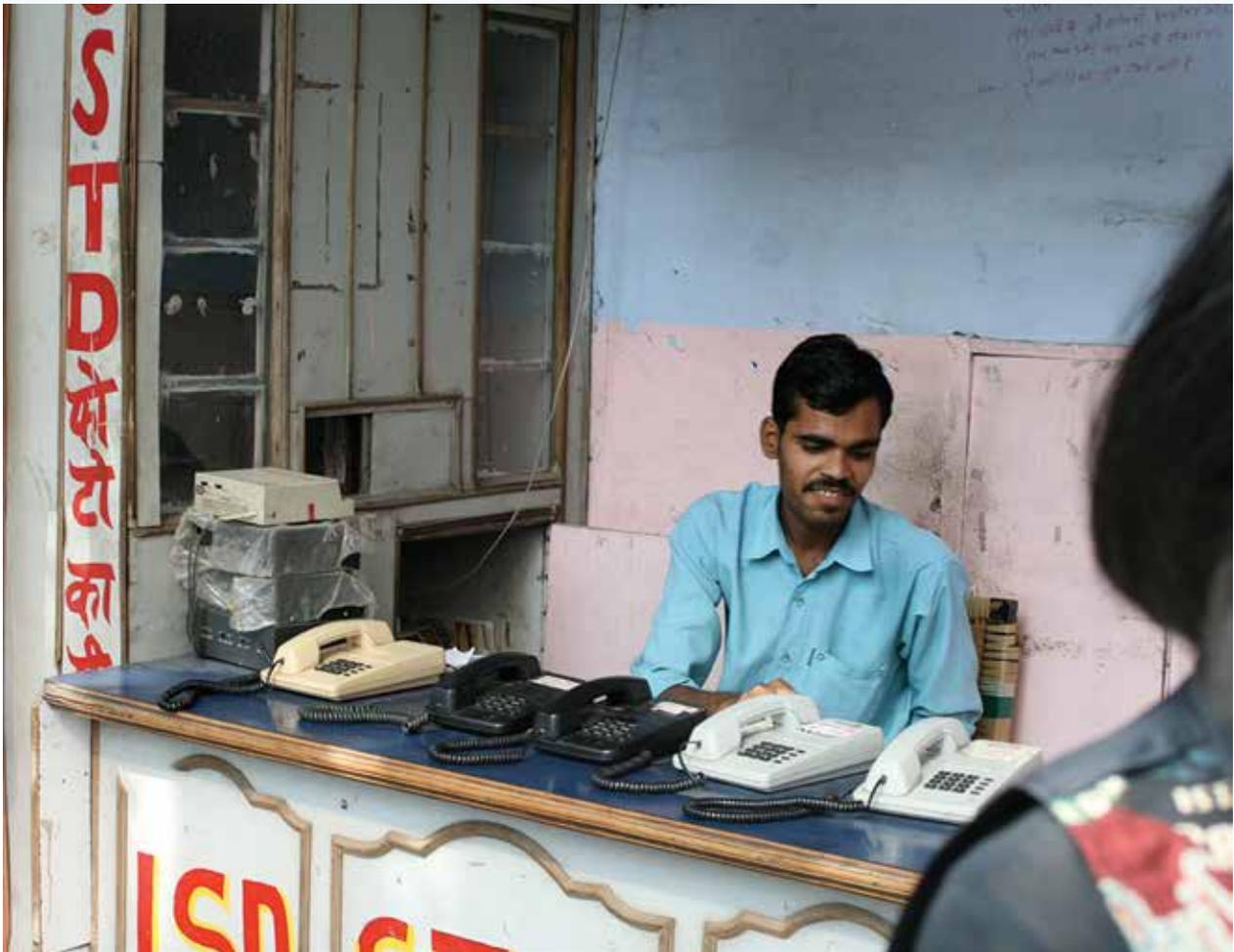


FIGURE 2 Building a new multi-storey building inside Old Delhi



FIGURE 3 People of different religions have lived in Delhi for centuries. About 80 per cent of the inhabitants of Old Delhi are Muslims, whereas in the whole of Delhi about 80 per cent of the population are Hindu. A number of **mosques**, temples and Christian churches are crammed into the old city, including (a) the Jama Masjid (Delhi's largest mosque); (b) small but important mosques such as Kalan Masjid, built around 1387; (c) the oldest Christian church in Delhi, St James Church.

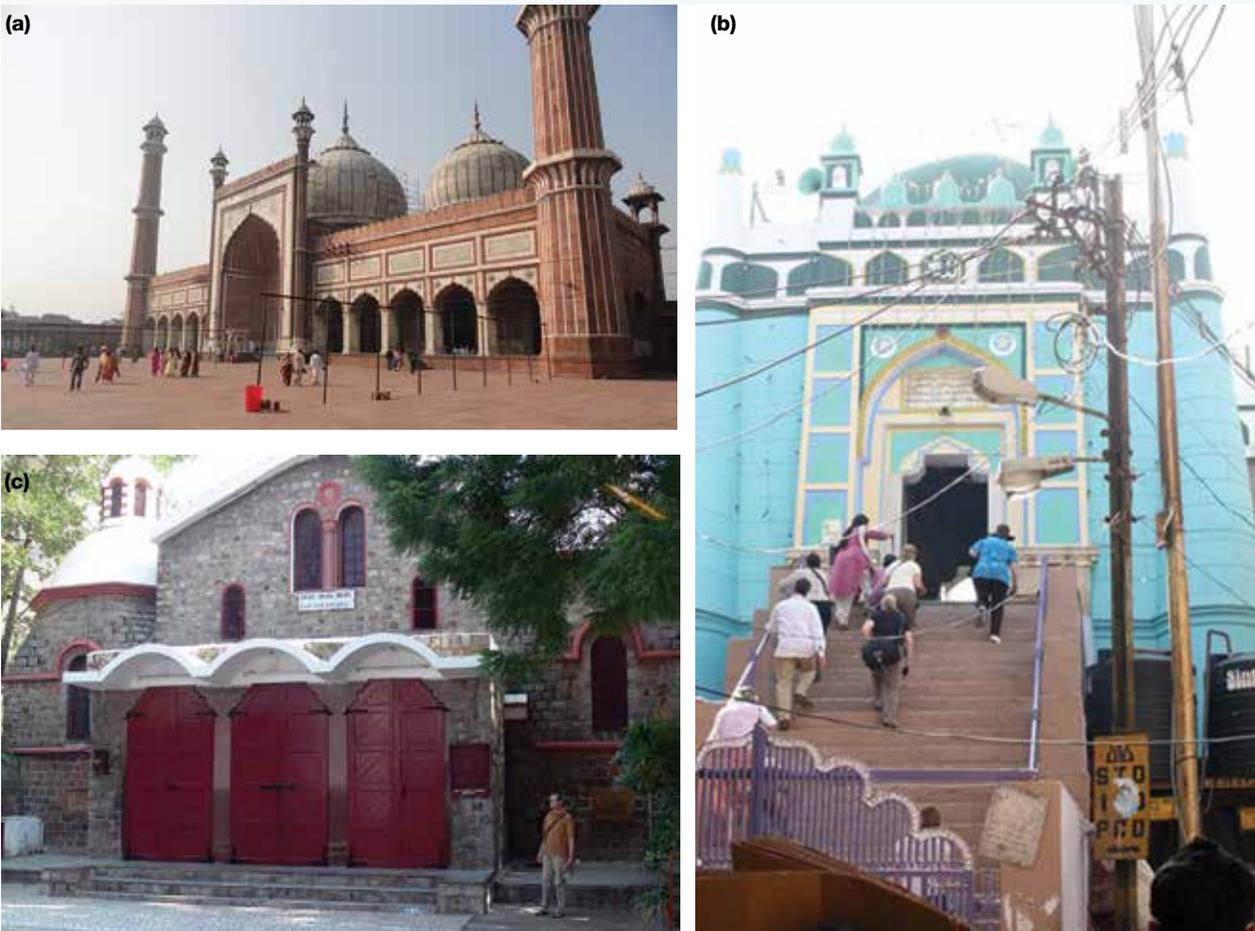


FIGURE 4 The bazaars in Old Delhi sell everything from food to bicycles.



FIGURE 5 Old Delhi is a hub of small industries, from metalwork to craft shops and food preparation. Power and telephone lines are draped from building to building.



FIGURE 6 There are many small shops in Old Delhi. (a) The welder works with old homemade equipment. (b) The cobbler repairs shoes with a minimum of equipment, using his feet as a vice. (c) The tailor uses an old sewing machine, operated by a foot pedal.



FIGURE 7 With space almost non-existent within the city walls, buildings can only go up. There is little green or open space, so clothes lines are hung wherever they will fit.



FIGURE 8 The narrow streets make rubbish collection impossible, even if local government did offer it. The roofs of lower buildings often become rubbish dumps for those on the higher floors. In Delhi, nearly all rubbish collection is handled by private contractors or by the wastepickers.



FIGURE 9 Within the city walls, fresh milk and meat is supplied by goats, as well as by smaller animals like chickens. They share the alleys and family courtyards with the motorbikes that are a favourite form of transport.



FIGURE 10 Street food is found everywhere in the streets and alleyways.

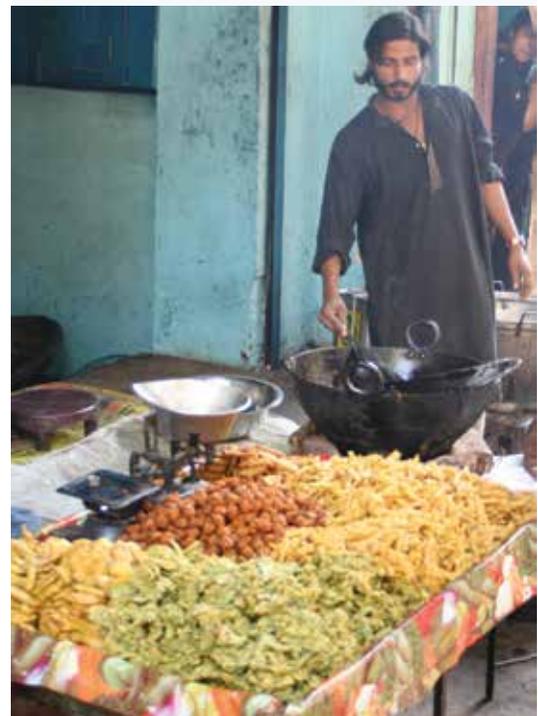


FIGURE 11 Getting ready for *iftar*, the communal **Ramadan** festival after sunset. The place is full of a range of *chaat* (tangy and spicy snacks). During Ramadan, communities start to cook a fast-breaking meal in the afternoon so that it is ready for all to eat after sunset. This often takes the form of a neighbourhood banquet, celebrating friendships, family and community.



FIGURE 12 Access to clean water is a major problem in Old Delhi. There is no internal plumbing, although some households are able to obtain water through a courtyard distributor system. In general, water supply is communal in Old Delhi, just as it is in much of rural India and older urban areas. Usually, only the middle class and wealthy can afford to have running water. The courtyards of newer homes sometimes have a water tank on the roof.



FIGURE 13 Goat and other meat is killed daily and sold by butchers who cut up and sell their meat from stalls on the street.



FIGURE 14 Schools in Old Delhi exist in small buildings down side alleys. Some schools teach in the English language.



FIGURE 15 With few jobs around, young people learn to be creative in finding a way of making a living. They work in the **informal sector**. Young boys might sell cool drinks, with cordial made with water from an urn. This is then cooled by ice from a block, which is big enough to take all day to melt.



11.11 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Explain

1. Using the SHEEPT system of classification, construct a table like the one below to summarise the major features of Old Delhi and of the lives of the people who live there.

	Social features	Historical features	Economic features	Environmental features	Political features	Technological features
Feature 1						
Feature 2						

2. Wordles are word collages that summarise and highlight the important words in a particular topic. Use the **Wordle** weblink in the Resources tab to create a Wordle that uses the main words and phrases from your table in question 1.
3. Using your table from question 1, identify five characteristics of Old Delhi that are very different from the **place** in which you live, and five characteristics that are similar.
4. Have a class debate on the statement: 'In many ways, our lives are similar to those of the people living in Old Delhi.'
5. Using Google Maps, view a map of Old Delhi. If you zoom in on this map, you will see that it names and shows the location of many features, including many businesses within the walled city. Study the map and make a list of the types of businesses found in Old Delhi.
6. In what ways does the information in the list you made for question 5 help to prove that the **environment** of Old Delhi is part of the modern side of India?
7. Compare the living conditions of Old Delhi with those that can be seen in the **places** illustrated in other subtopics. What similarities and differences do you notice?

Discover

8. Use the **Delhi passport** weblink in the Resources tab to research the history of Old Delhi as a **place**. Make a list of the key events and dates since its formation, and study a map of Old Delhi as it was in the 1800s, when it was known as Delhi.

Predict

9. Identify the main feature in the **environment** of Old Delhi that you believe to be the major problem facing its future. Justify your decision, using information from this subtopic and further information from internet searches and library resources.

Think

10. Use Google Earth to view an image of the **space** of Old Delhi in the present day. Using the Google Earth options, create an image of Old Delhi showing the distribution of the major human features, such as churches and mosques. Print out a copy of the map you have created.
11. Using the historical map of Old Delhi that you researched in question 8, identify some of the **changes** that have occurred in Old Delhi and surrounding areas since the 1880s.
12. Compare life in Old Delhi with life in India today.

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Explore more with these weblinks: Wordle, Delhi passport

11.12 How is modern India changing?

11.12.1 The multiple realities of India

Modern India is a very complex place. Indians themselves often talk about the ‘multiple realities’ of India. This means that there are many different pictures that visitors might see of life in India. Some of these may contradict each other, yet all of them are true.

There is a great difference between modern India and traditional India. The country is in the top ten national economies of the world. Since the 1990s, government policies have encouraged industrialisation, which has given jobs to many people and money for them to spend. India has almost 1.3 billion people, and there is now an increasing number of middle-class citizens who are highly educated, earning high incomes, and wanting the type of lifestyle that money can bring. In 2015, India had more than 90 billionaires (in US dollars), and almost 5 per cent of the world’s billionaires.

However, the gap between rich and poor is increasing. Economic growth has decreased the number of people living in poverty, but over 40 per cent of the population still lives in very basic conditions. Around 70 per cent of people still work in agriculture, and the rural poor are substantially worse off than other Indians. Incomes for farm workers are well below average.

FIGURE 1 In rural areas, many of the poor work in the informal sector. This snake charmer is one of a dying profession, working mainly for tourists and in festivals and markets, despite the fact that it is now illegal. The serpent is sacred in Hinduism, and snake charmers were once thought to have gifts of healing.



FIGURE 2 The modernisation of India has seen the rise of the service station roadside stop on major highways, like this one between Delhi and Agra.



FIGURE 3 A long drought in the 2000s put great pressure on dwindling water supplies in India, particularly in the countryside. However, urban growth and few environmental controls on local industry have also led to the pollution of small yet important lakes, like this one near Agra.



FIGURE 4 The contrasts of modern India (a) When modern buildings are constructed, bamboo poles are still used as scaffolding. (b)–(d) The growing middle class has created a ‘westernised’ lifestyle for many Indians, where people place great importance on always buying new goods and services. This can be seen in the advertisements within large shopping centres. (e) There is still room for local customs, however: look at what is on the sign hanging above the front of the McDonald’s store. Is this type of customer service what you would find at your local McDonald’s store?



FIGURE 5 A large proportion of India's economic growth has been in the **service sector**, where people work in jobs providing skills ranging from gardening and laundry to accountancy. For instance, many businesses in North America, Europe and Australia have 'outsourced' their telecommunications and work to **call centres** in India. This means that they hire people in India to do jobs that are more expensive to have done locally. Many global companies, like the one in this photo, now have bases in India.



FIGURE 6 The educated Indian middle class is growing so quickly that Indian radio stations can afford to target very specific audiences.



FIGURE 7 Advertising posters such as this can tell us many things about Indian society.



FIGURE 8 Three methods of transport in modern India



11.12 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Using the subtopic 8.8 SkillBuilder 'Annotating a photograph', construct a list of points about modern India that you can obtain from each place described in the photos and captions in this spread.
2. For each point, indicate whether the observation makes a statement about:
 - (a) India of the past
 - (b) India in the present
 - (c) India in the future.

Explain

3. Study figure 7. As the economy of India has grown and the country as a whole has become wealthier, Indian society has changed in ways that are not always obvious. Look at the messages that are given by the images and text on the advertising posters in figure 7. What do they say about how a wealthy, modern person should look? Conduct a class discussion about whether these kinds of attitudes are desirable or not.

Discover

4. One of the areas where the growth of the wealthy class in India can be seen is in sport. Use the internet to research the structure of the Indian Premier League (IPL) in cricket. Create a map showing where the different teams are based in India. Construct a table of the names of the owners and how they created their fortunes. What conclusions can you draw about the IPL as a symbol of modern India?

11.13 Review

11.13.1 Review

1. Explain the importance of the following factors in why people choose to live where they do.
 - Water
 - Transport
 - Jobs
2. Describe the services and facilities available in country towns such as Leongatha, which promote social connectedness among their residents.
3. Describe the services and facilities that make the Kimberley region liveable.
4. Think about the *environmental* features of the Margaret River region in Western Australia. Discuss how these features:
 - (a) sustained Indigenous Australian peoples
 - (b) attracted early settlers
 - (c) are valued by tourists today.
5. How and why do people live in Dawson, Canada, today?

11.13.2 Reflect

6. Examine table 1 and answer the questions that follow.

TABLE 1 Selected crimes in the South Gippsland local government area (LGA), 2007–2008

Crime category	South Gippsland LGA's rate per 100 000 population	Average rate in Victoria per 100 000 population
Burglary (residential)	272	549
Assault	0	596
Robbery	410	64
Theft from motor vehicle	160	995
Theft (shoplifting)	26	299

- (a) Construct a series of column graphs to represent crime statistics in the South Gippsland region and Victoria.
- (b) Compare the crime rates in the South Gippsland region with those in Victoria, as revealed in your graphs.
- (c) What might the residents of South Gippsland think of how safe it is to live there?
- (d) Compare the crime rates for the South Gippsland region and the Docklands region (see subtopic 10.13).

TOPIC 12

Liveable places

12.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

12.1.1 Introduction

Your quality of life is influenced by many factors, such as climate, landscape, community facilities, the location of your home, the sense of community identity and links to other settlements. You probably have an idea of a street, town, city or suburb where you would like to live, and your opinion may be quite different from those of others. This is because other people see different factors as important. This topic will look at how people define and improve liveability.

Starter questions

1. What would be the good things about living in the city shown here?
2. What would be the more challenging aspects about living in this city?
3. (a) What similarities and differences are there between this **place** and where you live?
(b) In which of these two **places** would you prefer to live and why?

The streets of Kolkata, India



INQUIRY SEQUENCE

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 Watch this eLesson: Making places liveable for young people (eles-1621)

12.2 What is liveability?

12.2.1 What do people think about liveability?

If you were told that Vancouver or Melbourne was the world's best place to live in, or the world's most liveable city, what would you think this means? Do city councils just brag about how good their city is or can liveability be measured? Is liveability the quality of life experienced by a city's residents?

Here are some made-up examples of what fictional people think about the liveability of their **community**. They come from different places and they are all trying to explain what liveability means to them.

'I think a liveable city is a city where I can have a healthy life and where I can safely and quickly get around on foot or by bicycle, public transport or even by car — as a last resort. A liveable city is a city for everyone, including children and old people, rich and poor, and people of different religions, races and fitness levels. A liveable city should be attractive, and have good schools, a choice of things to do and fresh air.'

John from Perth



'I think that a place is liveable if I have food every day, I do not have to walk more than 10 minutes to collect water for cooking and my father has work close by, so he is home for dinner. Liveability means warm weather, enough rain and being able to go to school every day.'

Nafula from Kenya



'Liveability means that I have a good job, good food, a nice house, a newish car, nice neighbours and a community that cares about my family and me.'
Oscar from western suburbs of Sydney



'Liveability is all about the **natural environment**. I think a place is liveable if the air is clean, there is plenty of water in the river and there is a healthy forest nearby. Being able to grow your own food, use renewable energy and live a simple life are all a part of what is important to me and can make a place liveable.'
Joy from Huon Valley, Tasmania



'A liveable place is somewhere I can have a computer and a television and a bed of my own in my own room. I would like a bike to get to school, three meals a day and two sisters. A liveable place would be clean, safe and modern. My grandmother and aunty would also live with us.'
Jing from a village in rural China



'Liveable cities have housing that is close to jobs, services and transport and is available for all income levels. Neighbourhoods are pedestrian-friendly with green spaces and lively retail sectors. They are mostly car-free, and have good schools and public buildings. A liveable city needs lots of different choices — choices in ways to live, places to work, shop and eat, and locations to linger in — whether alone or with other people.'
Alex, property developer from New York



'A liveable community offers many activities, celebrations and festivals that bring all of its residents together. Every year at Carnevale, my whole neighbourhood comes together to dance the samba. I would never wish to live anywhere else.'
Raul from Rio de Janeiro



'The place that I think would be the most liveable is Darwin. It has great footy grounds, public transport, good food, good houses, good shops and good schools. Where I live, my house is a dump and I cannot get anywhere unless I walk. I would like to live in Darwin and play football.'
Sam from near Alice Springs



'The community is what makes a place liveable. Being connected with my neighbours, through the community gardens, food co-op, volunteer network at our kids' school and the car-share scheme all make me feel a valued member of my community. I like knowing people who care and that we all care for each other.'
Laura from Bristol, United Kingdom



12.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Explain

1. Write a statement, similar to those in this section, about the community that you live in and what makes it liveable.
2. Would the statement of liveability in your community be different if you were blind, unemployed, elderly or unable to speak English? Write what you think a community liveability statement would be for two such residents of your community.

Discover

3. Carefully read the different opinions about what makes a **place** liveable.
 - (a) Make a list of the common themes mentioned by these people.
 - (b) Is there a shared common definition of what makes a **place** liveable? Discuss the differences with your class.
 - (c) On a map of the world, show the location of each **place** mentioned in this section.
 - (d) Does the **place** in which each person lives appear to influence their definition of the term *liveability*? Discuss this with your class.
4.
 - (a) Ask a much older person to describe the living conditions in the community they lived in as a teenager. Record or write down their memories.
 - (b) Do you think the current liveability of your community is better than that described by the older person? Provide an example to support your view.

Predict

5.
 - (a) Think about your community 50 years from now. How will the characteristics of this **place** be different? For example, think about the type of houses, the **distribution** of houses, the amount and type of traffic, the age of the population, the community facilities and other characteristics you think will be significant.
 - (b) What type of inventions might improve liveability?

Think

6. We have so far described liveability in a general sense. Some times living conditions can change quite quickly. Provide examples of how natural events, political events or economic events can influence the living conditions.
7.
 - (a) Which viewpoint or viewpoints about liveability do you agree with more than others? Give reasons for your answer.
 - (b) As a class, discuss your answer to question 7(a), and see if there are any patterns within the group.

12.3 Where are the most liveable cities?

12.3.1 What is liveability?

Everyone likes to be able to tell you they are the best, or in the top 10 of some category. Cities are no different. If you look at the official websites for many international cities, they will tell you that they are the safest, wealthiest, fastest-growing or have the best events calendar. Being able to boast that a city is the world's most liveable is great publicity.

Liveability can be defined as 'the features that create a place that people want to live in and are happy to live in'. It is usually measured by factors such as safety, health, comfort, community facilities and freedom.

12.3.2 Who says which is the most liveable?

Several international organisations have created lists of the world's most liveable cities. These organisations each compare data and produce a table that ranks the liveability of cities. This information is collected for workers considering overseas transfers or for companies that may need to compensate workers who are

transferred to a low-ranked city. The figures can also be used to attract migrants or investment. The various rankings compare a large number of cities; however, not all cities in the world are included in each survey.

The criteria used to produce the rankings include:

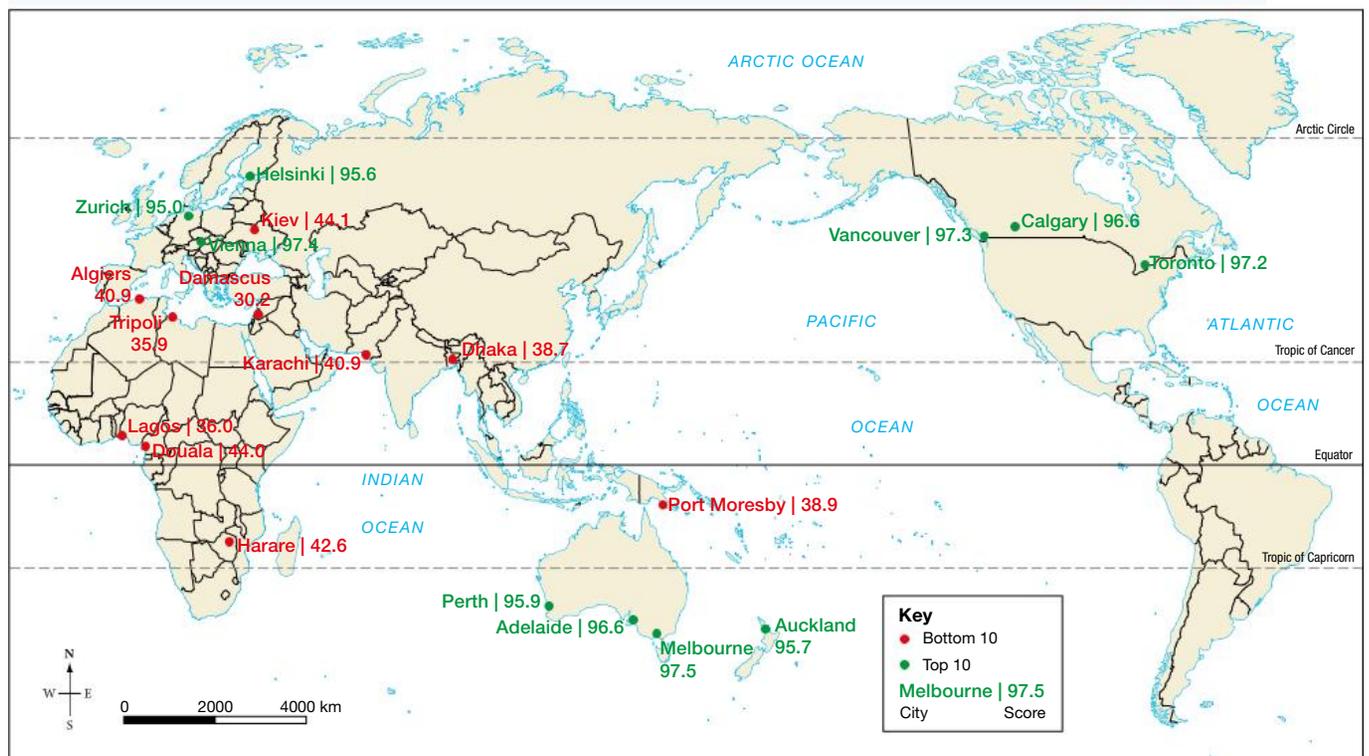
- stability or personal safety (crime, terror threats and civil unrest)
- healthcare
- culture and environment (religious tolerance, corruption, climate and potential natural disasters)
- education
- infrastructure (transport, housing, energy, water and communication)
- economic stability
- recreational and sporting facilities
- availability of consumer goods (food, cars and household items).

Figure 1 shows the top 10 and bottom 10 in the global cities liveability rankings, as released by the Economist Intelligence Unit (EIU) in August 2016. These rankings are released each year, so it is possible for you to log on (use the **Economist Intelligence Unit** weblink in the Resources tab) to get the most recent update to the rankings. This survey ranks 140 cities; a score of 100 equates to the perfect or ideal city. For the past few years, Vancouver, Melbourne and Vienna have shared the top ranking as the world's most liveable city.

The map shows that many of the world's top cities have scores that are very similar. The difference in score between the top four cities is only 0.3.

There is more than one published ranking, so obviously there is more than one list of liveable cities. With slightly different selection criteria, Zurich, Geneva and Frankfurt make it into the top 10 and, in another 2012 survey, Hong Kong was named the best city in the world.

FIGURE 1 The top 10 and bottom 10 in the global cities liveability rankings, as released by the Economist Intelligence Unit (EIU) in August 2016



Source: Economist Intelligence Unit (EIU), August 2016

A common feature of these surveys is that cities in the United States do not rank highly even though they are very popular locations for business, travel and residence. For example, Honolulu is ranked highest at 19 while other well known cities such as New York, Los Angeles and San Francisco are ranked at about 50.

What do these top 10 liveable cities have in common?

Looking at the locations of the most liveable cities, you can see most are found in Australia, Canada or Europe. They are all mid-sized cities, have quite low **population density**, low crime rates and infrastructure that copes quite well with the needs of the local community. They are found in places where there is a **temperate climate**, perhaps with the exception of Toronto, Calgary and Helsinki, which do have very cold winters.

The top cities also tend to be modern cities, not much more than 300 years old. They have been planned so that people can travel around them by both public and private transport. They are also found in some of the world's wealthiest or most developed nations.

Australian and Canadian cities perform better than cities in the United States due to US cities' higher crime and congestion rates.

12.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. How many cities are ranked in the EIU liveability ranking?
2. What is the difference between the score of the top city (Melbourne) and the tenth city?
3. Name the three lowest ranked cities in the 2015 liveability ranking.
4. In which type of climatic region are most of the liveable cities?

Explain

5. Analyse the information in figure 1.
 - (a) How many of the top 10 most liveable cities are found on each continent?
 - (b) How many of the most liveable cities are found in the northern hemisphere?
 - (c) Describe the distribution of the least liveable cities in the world.
 - (d) How many of the least liveable cities are found on each continent?
 - (e) How many of the least liveable cities are found in each hemisphere?

Discover

6.
 - (a) Work with a partner or in a group to find the most recent population figures for each of the cities shown on the map in figure 1. List your findings. Write one sentence to describe the population of the most liveable cities. Write one sentence to describe the population of the least liveable cities.
 - (b) Draw up a table or use a spreadsheet to collect at least five sets of information to compare the top 10 and bottom 10 in the liveable cities ranking. Use the population data you collected for the previous question as your first set of information. Other possible data sets are number of universities, number of hospitals, population density, any recent violence, traffic issues, the availability of public transport, housing types, presence of slums and water supply and sanitation. Comment on the differences between the most liveable and least liveable cities. Write at least three sentences.

Think

7. London and New York have a similar ranking. Why do you think these well known cities are ranked so low?
8. Why might a city suddenly fall down the liveability rankings?
9. What do you think could be done to improve a city's liveability ranking?

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- 🔗 Explore more with this weblink: Economist Intelligence Unit
- 🖱️ Try out this interactivity: My most liveable city (int-3095)



Deepen your understanding of this topic with related case studies and questions.
▶ Polluted cities

12.4 SkillBuilder: Drawing a climate graph

online only

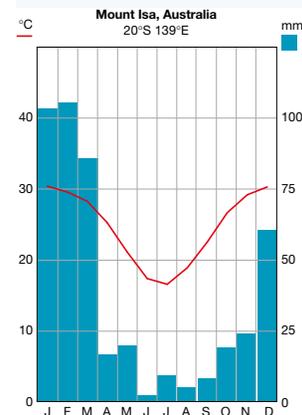
WHAT ARE CLIMATE GRAPHS?

Climate graphs, or climographs, are graphs that show climate data for a particular place over a 12-month period. They combine a column graph and a line graph. The line graph shows average monthly temperature, and the column graph shows average monthly precipitation (rainfall).

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 Climate graph for Mount Isa, Queensland



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- 🎬 Watch this eLesson: Drawing a climate graph (eles-1644)
- 🖱️ Try out this interactivity: Drawing a climate graph (int-3140)

12.5 What makes Melbourne the world's most liveable city?

Access this subtopic at www.jacplus.com.au

online only

12.6 Is being the most liveable city sustainable?

12.6.1 Sustainability

Australia's major cities consistently rate among the most liveable. Liveability, however, is not always the same as sustainability.

Sustainability considers how well a community is currently meeting the needs and expectations of its population and how well it will be able to continue providing for its population.

Indicators that a place is sustainable include:

- low working hours to meet basic needs
- easy access to education
- satisfactory and affordable housing
- plenty of recycling and composting
- reliable transport
- low emissions and high air quality
- **biodiversity**
- high renewable energy use and low non renewable energy use
- good water, forests and marine health
- ability to respond to disasters.

Sustainable cities index

This annual index considers 50 leading cities and ranks each against a range of indicators. These are organised under the headings of people (society), planet (environment) and profit (economy).

FIGURE 1 To achieve sustainability, a city's environmental, economic and social aspects must all be considered.

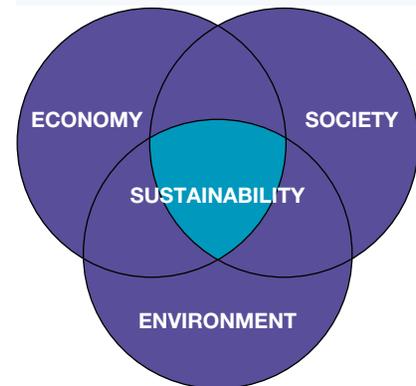


TABLE 1 Top 10 sustainable cities by each indicator, 2015

Ranking	People	Planet	Profit
1	Rotterdam	Frankfurt	Frankfurt
2	Seoul	Berlin	London
3	London	Copenhagen	Hong Kong
4	Sydney	Madrid	Amsterdam
5	Copenhagen	Rotterdam	Melbourne
6	Hong Kong	Amsterdam	Seoul
7	Amsterdam	Singapore	San Francisco
8	Melbourne	Rome	Brussels
9	Frankfurt	Toronto	Singapore
10	Berlin	Birmingham	Madrid

Source: ARCADIS, Sustainable Cities Index 2016

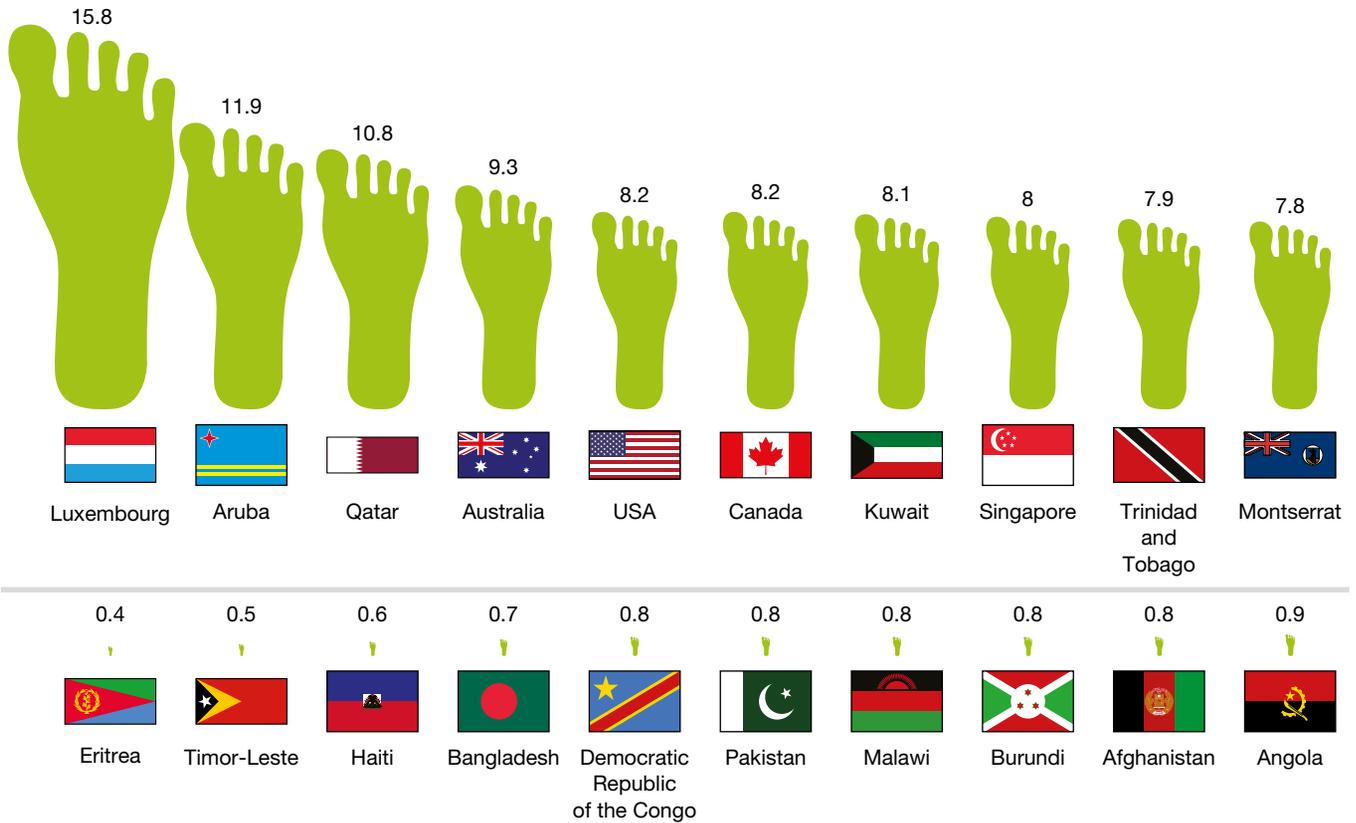
Ecological footprint

Everything we do and consume has an impact on the environment. Land is cleared to grow plants and animals; fish are caught in the sea; water is diverted for homes, businesses and farms; and most transport is powered by non-renewable resources. An **ecological footprint** calculates the land area (hectares) that would be needed to sustain an individual (expressed as per capita).

Generally, if you live in a high income country such as Australia, you are likely to have an ecological footprint that is much larger than a person who lives in a low income country such as Chad. The average ecological footprint of all people on Earth is 2.18 hectares. The average Australian footprint is about 6.8 hectares. To enjoy a sustainable way of life, the population needs to stay within the Earth's carrying capacity, and the average footprint should not be more than 1.89 hectares. As more countries develop industries and improve their standard of living, clever responses will be needed to ensure that everyone can enjoy a high standard of liveability.

Government policy can influence the ecological footprint through power generation, transport, water, industry support, rubbish collection and building regulations. Individuals can influence the ecological footprint through what they eat and buy, how they use water and power, whether they recycle and compost, and how they build their houses and travel.

FIGURE 2 Top 10 countries with the biggest and smallest ecological footprints (hectares per capita) per person, 2012



12.6 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

- What are the three aspects that are considered in a definition of *sustainability*?
- Refer to table 1 and your atlas. Answer the following questions.
 - There are 17 cities in the table. How many are located in the continent of Europe?
 - Which other continents are represented?
 - Which cities are in the top 10 for each of the three indicators for a sustainable city?
- Refer to figure 2 and locate and describe the distribution of countries with an ecological footprint of seven or more hectares per capita. Refer to pattern, directions, continents and latitude.

Discover

- Find an image that shows living conditions in a country with an ecological footprint of over seven hectares per capita. Refer to figure 2 for possible countries.
 - Find an image that shows living conditions in a country with an ecological footprint of less than one hectare per capita. Refer to figure 2 for possible countries.
 - Annotate your images to explain how the living conditions have an impact on the ecological footprint.

Predict

- What do you think will happen to the global ecological footprint if liveability improves on every continent?

Think

6. Refer to the list of things in section 12.6.1 which indicate that a *place* is *sustainable*. Categorise each indicator as applying to society, economy or *environment*. Suggest one more possible indicator for each category.
7. Consider the ways in which resources have been used to improve the liveability in your area. Which aspects would you be prepared to *change* a little so that others might improve the liveability of where they live?



Deepen your understanding of this topic with related case studies and questions.

- Christie Walk
- Mawson Lakes

12.7 Port Moresby – a less liveable city?

12.7.1 Port Moresby

The United Nations measures people's quality of life using the Human Development Index (HDI). In 2000, Papua New Guinea was ranked 133 in the world; in 2014 its ranking had dropped to 158 (out of 188). Its largest city, Port Moresby, faces many challenges to meet the needs of its people and improve the standard of living.

Environment

Port Moresby, the capital of Papua New Guinea (PNG), is located on the south-eastern coastline. Its population is approximately 350 000, and it is the largest city in PNG.

Safety

The crime rate in Port Moresby is very high, and the city has a reputation as one of the most dangerous in the world. Crimes are often very violent, and gang-based crime is common. There are not enough police, and many crimes are never solved. Travellers are advised to be very careful, to not wear obviously expensive jewellery, and to avoid travelling at night.

Health

The government in Papua New Guinea spends little on preventative measures such as clean water. It also spends little on health-care. For instance, not all pregnant women can give birth in a hospital, which leads to many complications in childbirth.

FIGURE 1 Location map of Port Moresby



Source: Spatial Vision

Education

School facilities in PNG are quite poor, and attendance rates are very low, particularly for girls. Poor bus services, lack of interest and inability to pay school fees all influence the attendance rate. Only a small proportion of students complete Year 12. The **literacy rate** of 55 per cent is quite low by world standards.

Economy

The government in PNG provides no welfare. Fortunately, many families can take advantage of the good growing conditions to produce food to eat and sell. Unemployment is very high, and most work is found in the **informal sector**. Many businesses in this sector involve selling food and other goods. About half the population lives on less than \$1 a day.

Life is difficult for girls, and there is much discrimination. Girls do not all get access to school; their literacy rate is lower than that of boys; child-bearing begins at a young age; and the level of violence against women is among the highest in the world.

FIGURE 2 Climate graph for Port Moresby

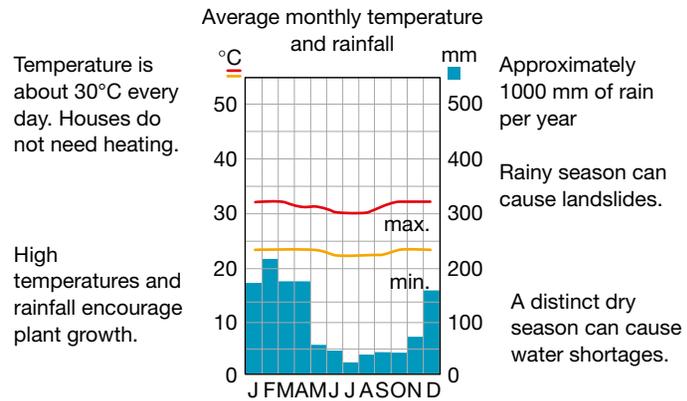


FIGURE 3 Sick children in a ward in Port Moresby General Hospital

Low spending on equipment

Shortage of medicine

Not enough doctors and nurses



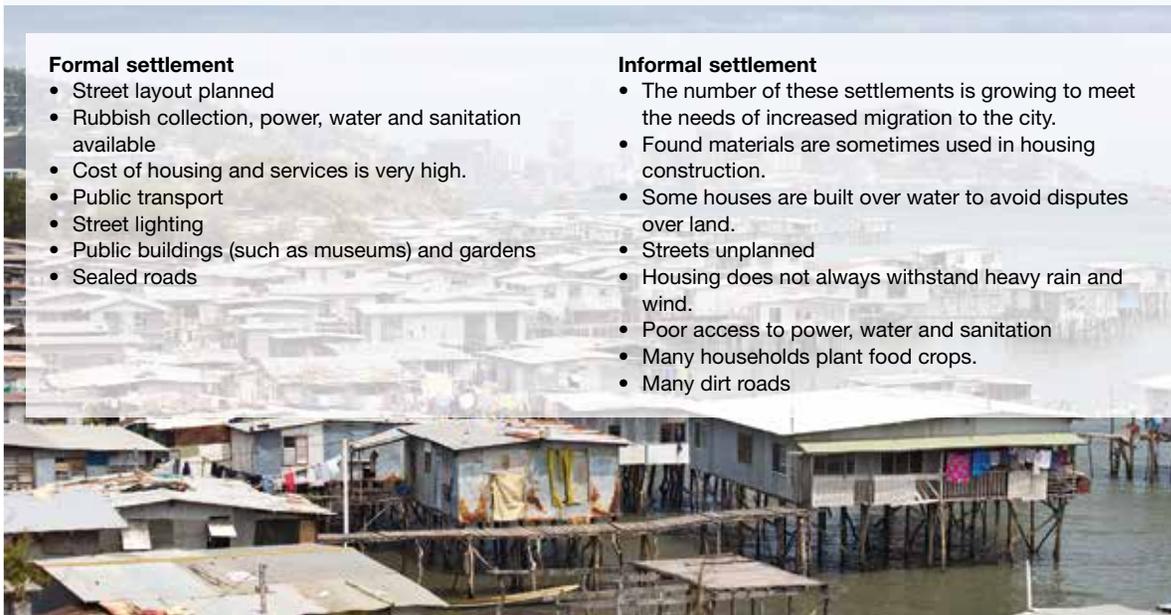
Treatable diseases are common

Average life expectancy is about 65 years

Highest HIV/AIDS infection rate in the Pacific region

Infrastructure

FIGURE 4 Port Moresby is a mixture of high-rise urbanised landscapes and village landscapes.



Formal settlement

- Street layout planned
- Rubbish collection, power, water and sanitation available
- Cost of housing and services is very high.
- Public transport
- Street lighting
- Public buildings (such as museums) and gardens
- Sealed roads

Informal settlement

- The number of these settlements is growing to meet the needs of increased migration to the city.
- Found materials are sometimes used in housing construction.
- Some houses are built over water to avoid disputes over land.
- Streets unplanned
- Housing does not always withstand heavy rain and wind.
- Poor access to power, water and sanitation
- Many households plant food crops.
- Many dirt roads

12.7 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Refer to figure 1. At what latitude is Port Moresby?
2. Why don't all children attend school?
3. In which sector of the economy do most people find work?

Explain

4. How does environmental quality (such as climate) influence living conditions in Port Moresby?
5. Why are travellers advised to be careful in Port Moresby?
6. Refer to figure 3. Which is the biggest health issue facing Port Moresby? Why?
7. Use the **Slum life** weblink in the Resources tab to watch a video showing life in slums. Explain how slums are part of the process of city growth.

Discover

8. What is the difference between the population of Port Moresby and the biggest city in your state or territory?
9. (a) Compare the literacy rate in Papua New Guinea and Australia.
(b) Compare the life expectancy in Papua New Guinea and Australia.
(c) Compare the HDI ranking of Papua New Guinea and Australia.

Think

10. Find an image of an informal settlement in a country other than Papua New Guinea. What are the advantages and disadvantages of informal settlements?

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Try out this interactivity: Environmental quality (int-3096)



Explore more with this weblink: Slum life

12.8 Dhaka — a less liveable city?

Access this subtopic at www.jacplus.com.au



12.9 Is there enough to eat?

12.9.1 Distribution of hunger

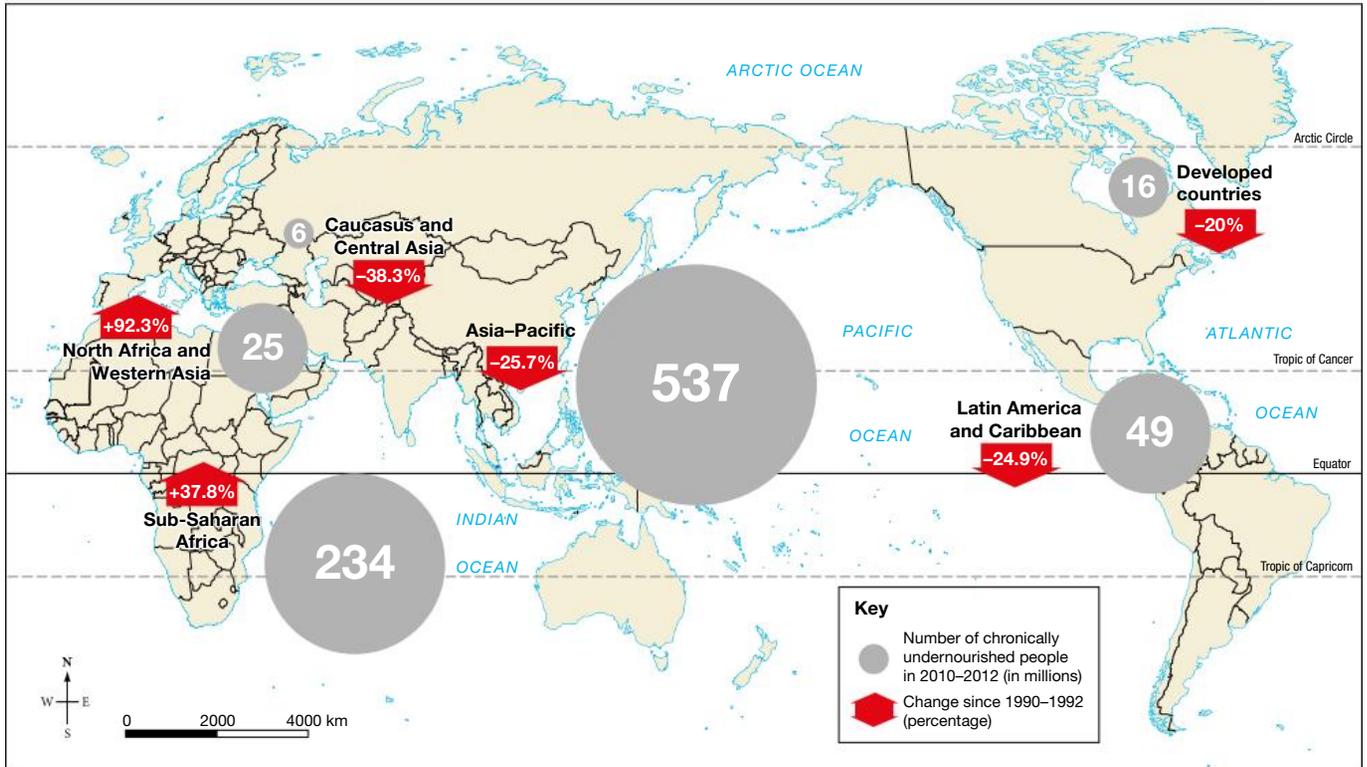
A basic human requirement is food, and access to enough food is a strong measure of liveability. Even in a world where there is plenty of food and millions of people are overweight, about one person in eight does not have enough to eat.

There are approximately 870 million undernourished people in the world today. Many children in poorer countries are underweight and do not get enough food to be healthy and active.

Three-quarters of all hungry people live in rural areas, mainly in the villages of Asia and Africa (see figure 1). Most of these people depend on **agriculture** for their food. They rarely have other sources of income or employment. As a result, they may be forced to live on one quarter of the recommended calorie intake and a small amount of water each day.

If enough rain does not fall at the right time of year, crops will not grow well and there will be little grass for **livestock**. However, rainfall is not the only factor contributing to hunger. Figure 2 summarises causes of hunger.

FIGURE 1 Distribution of hunger, 2010–2012



Source: Food and Agriculture Organisation

FIGURE 2 Causes of hunger



12.9.2 Impact of hunger

A lack of energy and poor health caused by a lack of food are made even worse by poor nutrition.

TABLE 1 The impact of hunger is felt by individuals, families, communities, regions and whole countries.

Social impacts	Economic impacts	Environmental impacts
<ul style="list-style-type: none">• People become unwell.• Many people (particularly children) die.• Fathers leave in search of work.• There is political unrest.	<ul style="list-style-type: none">• Food production declines.• The population of cities grows.• Poverty increases.• The government cannot afford new infrastructure.	<ul style="list-style-type: none">• Soil is overused.• Too much land is cleared.• Soil fertility and local biodiversity decline.

12.9.3 Ending hunger

There is a range of organisations that focus on reducing hunger. Sometimes food is provided for immediate consumption and sometimes projects are undertaken to increase food production in the future. Actions can happen on a range of scales:

- Individuals in any country can join groups or donate to organisations that work to reduce hunger.
- The government of the affected country can provide assistance to the poor or improve infrastructure.
- Other countries can provide financial and food aid or consider the impact of their own policies.

12.9 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Refer to figure 1.
 - (a) Which region has the largest number of hungry people? Name three countries in this region.
 - (b) Describe the **change** in the distribution of hunger. Use the following questions to help.
 - In which regions has the number of hungry people increased?
 - By what percentage?
 - In which regions has the number of hungry people decreased?
2. Copy and complete the following sentence to make it accurate. 'Most of the world's hungry people live in _____ villages in _____ and _____.'

Explain

3. Refer to figure 1. In 1990–1992 there were about one billion people who did not get enough food. How many people suffered from hunger in 2012? Is this an increase or decrease? By how many million has it changed?
4. How can poor roads contribute to hunger?

Discover

5. Work with a partner to find an example of a project that is trying to solve the immediate issue of hunger and an example of a project that is trying to make food production **sustainable**. Describe where the project is taking place and which organisation manages the project. Create an outline of the project. Refer to figure 2 and explain which of the causes will be reduced by the project.

Think

6. Here is a statement that is often in news reports: 'Hunger is caused by drought'. Is this accurate? Write your answer in a paragraph. Consider figure 2 and complete the following to help plan your answer:
 - Which causes of hunger are natural factors such as the weather?
 - Which causes are the result of actions by people?
 - Is the statement 'Hunger is caused by drought' accurate?
 - What evidence will you use to support your view?
7. Consider table 1. Provide one more example for each category of impact — social, economic and **environmental**.

12.10 How can liveability be improved?

12.10.1 Sustainable Development Goals

Many countries cannot afford to provide infrastructure for their growing population. The underlying cause of very low liveability is poverty. Reducing poverty is fundamental to improving living conditions in many parts of the world.

United Nations Development Goals

The United Nations (UN) is an organisation with members from 193 countries. In 2000, 189 countries signed a pledge to free people from extreme poverty by 2015 (Millennium Development Goals 2000–2015). In 2015, a new pledge was signed with 17 goals, each with specific targets to be reached over 15 years (Sustainable Development Goals 2015–2030).

TABLE 1 UN Development Goals

Millennium Development Goals 2000–2015	Examples of achievements of MDGs	Sustainable Development Goals 2015–2030	
Eradicate extreme poverty and hunger	Less people live in extreme poverty	No poverty	Industry, innovation and infrastructure
Achieve universal primary education	Primary school enrolments have increased	Zero hunger	Reduce inequality
Promote gender equality and empower women	Many more girls are attending school	Good health and wellbeing	Sustainable cities and communities
Reduce child mortality	More babies are surviving	Quality education	Responsible consumption and production
Improve maternal health	More mothers have access to healthcare when giving birth	Gender equality	Combat climate change
Combat HIV/AIDS, malaria and other diseases	Vaccination has reduced incidence of measles	Clean water and sanitation	Conserve and use ocean resources sustainably
Ensure environmental sustainability	Safe water is available to more people	Affordable and clean energy	Protect and use earth resources sustainably
Develop a global partnership for development	Huge increase in number of people with phone and internet	Decent work and economic growth	Provide access to justice and promote peaceful societies

Australian Government and NGOs

The Australian Government recognises that we are **global citizens**, and it supports an overseas aid program through its Department of Foreign Affairs and Trade. Overseas aid helps improve outcomes in health, education, economic growth and disaster response in many locations.

The Australian Government runs projects to improve living conditions, often working with other countries or with **non-government organisations** (NGOs). NGOs also run programs on their own. Well-known NGOs include World Vision, CARE Australia and Australian Red Cross.

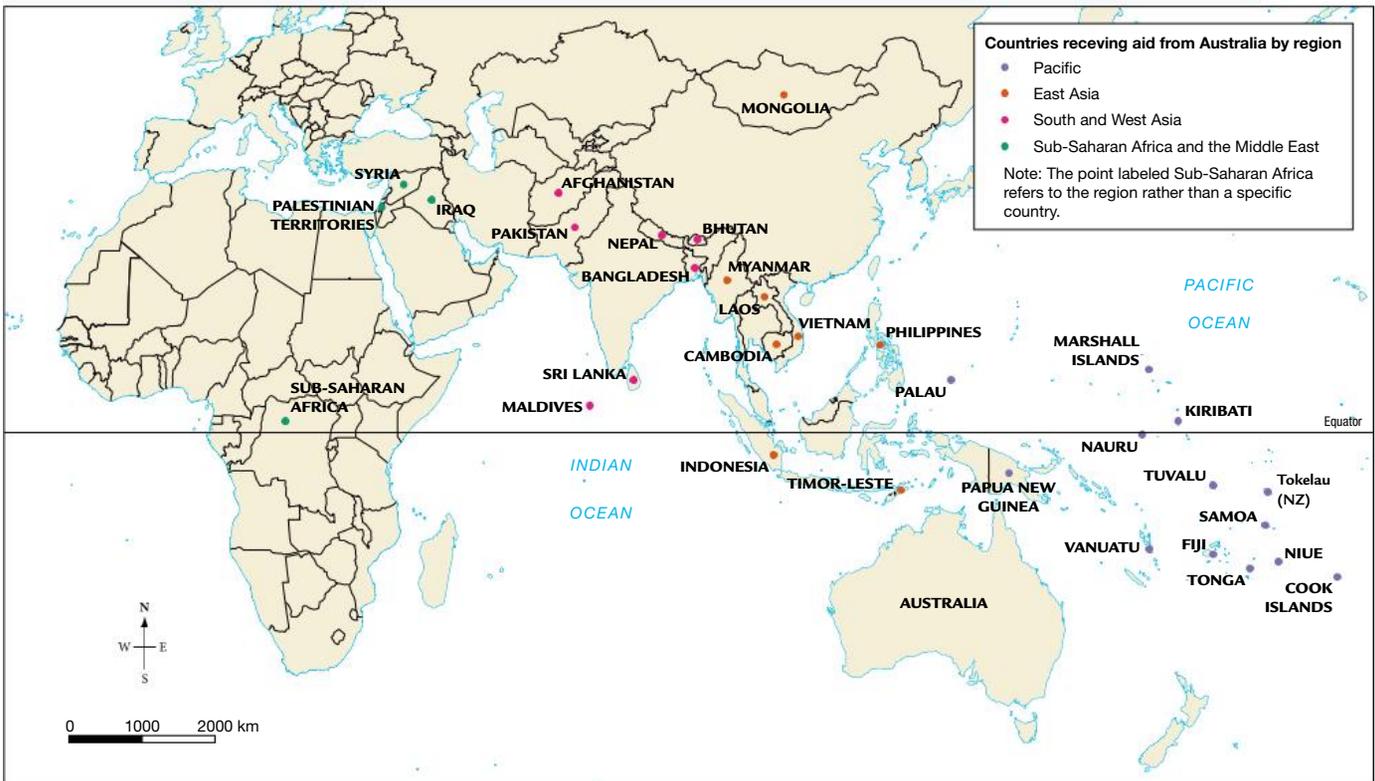
Small changes, big results

Simple and **appropriate technology** can make an enormous difference to people's lives in developing countries (see figure 3).

In addition, a small amount of money can sometimes create a big difference to an individual or community group. Microfinance, or microcredit, is a system of lending small amounts of money, perhaps \$150. The money is used to invest in something that can generate income. A person might buy an animal for

milking and breeding, equipment for basket-making, stock for a store, or materials for jewellery-making. The loan must be repaid, but at a low interest rate, and further loans can be taken out.

FIGURE 1 Countries receiving assistance from Australia



Source: Department of Foreign Affairs and Trade

FIGURE 2 Examples of projects to improve liveability (a) A child immunisation clinic on the Kokoda Track (b) Building schools and improving education in Indonesia (c; overleaf) The installation of a pump for water in South Sudan.



FIGURE 2 continued



FIGURE 3 Appropriate technology (a) Electricity in Nepal is not available to all houses, so a solar lamp increases the opportunities to read. (b) In South Africa, people push hippo rollers, which make it easier to collect water from distant wells and bring it home.



12.10 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. Which organisation developed the Millennium Development Goals and the Sustainable Development Goals?
2. How many countries are there in the world? What percentage of countries supported these sets of goals?

Explain

3. Study the images in figures 2 and 3. Which of the Sustainable Development Goals have been addressed in these projects?

Discover

4. Refer to figure 1. Describe the distribution of places that receive aid from Australia. Think in terms of region, such as Asia, East Asia, the Middle East, South Asia, West Asia, Pacific, Africa and the Caribbean.

5. Prepare a report about the work of one NGO involved in programs that aim to improve liveability in an overseas country. Include background information about the location of the project (country and locality); statistical data about living conditions (such as life expectancy, access to safe water, doctors per 100 000 people); and **environmental** conditions. Describe the NGO and its project and how it is aiming to improve liveability.

Think

6. Choose one of the Sustainable Development Goals. Use a visual organiser to explain how achieving this goal will improve liveability. Take into account the flow-on effects and the impact on people, the economy and the **environment**.

12.11 What makes a place liveable for you?

12.11.1 Liveability studies

A study of a region's liveability will reflect its natural characteristics and human characteristics. All communities would like a safe, healthy and pleasant place to live, a sustainable environment, the chance to earn a liveable wage, reliable infrastructure and opportunities for social interaction.

The findings of a liveability survey will be influenced by a range of factors.

- Where a person lives influences their access to services, employment and environmental features, and their address may influence their perception of the quality of the region.
- Different age groups have different views and needs.
- Current economic conditions influence a person; for example, a major employer may have closed or opened.
- Environmental conditions affect a person; for example, a region may be experiencing drought.
- Government policies influence infrastructure, housing assistance, and grants to local sports clubs.

To find out about the liveability of an area, a number of themes need to be investigated. Some of these can be gained from **census** statistics, while others can be gained only through surveys and fieldwork.

TABLE 1 Matching liveability indicators to key themes

Measure	Examples of indicators	
Social	<ul style="list-style-type: none"> • Population characteristics (gender, age) • Education (primary, secondary, tertiary) • Health (life expectancy, health-centre attendance, length of walking tracks, smoking rates, weight, chronic diseases) • Safety (perception, crime rates, road deaths and injuries, work safety) 	<ul style="list-style-type: none"> • Volunteering • Voting • Aged care accommodation • Access to public transport • Membership of clubs and organisations • Diversity (ethnicity)
Environmental	<ul style="list-style-type: none"> • Biodiversity • Planning for the future • Water access • Waste management • Ecological footprint 	<ul style="list-style-type: none"> • Public spaces • Household recycling • Weather • Land clearing
Economic	<ul style="list-style-type: none"> • Employment • Variety of businesses • Income • Financial stress • Housing types 	<ul style="list-style-type: none"> • House ownership • Infrastructure • Internet access • Power • Car ownership

In any community there will usually be agreement about some things that improve liveability. All groups accept that safe water, sealed roads and a reliable power supply are important.

If a community wants to obtain certain kinds of items on its liveability ‘wish list’, it sometimes needs help from national, state or local government. Examples of such items include major roads, railways and desalination plants. Sometimes, though, a wish-list item is best obtained by an individual or community. This is the case when setting up sporting clubs, youth groups and local music events.

FIGURE 1 Community wish list: some aspects of liveability are common to all groups and some are desired by particular groups.



Community wish list

- Playgrounds
 - Paths for prams
 - Primary schools
 - Single-person housing
 - Family housing
 - Friendly community
 - Shopping nearby
 - Paths for scooters
 - Health services
- Public transport
 - Neighbourhood house
 - Parks and gardens
 - Public seating
 - Recognition of those from non-English-speaking backgrounds
 - Financial security
 - University of the Third Age

FIELDWORK TASK

Looking at your school environment

Geographers are particularly interested in:

- the location of things
- the distance between things
- the distribution patterns we can see when we produce a map
- the movement between places
- the connection between places
- the changes that happen over time.

How can you apply these concepts when finding ways of improving your school environment? Work in pairs to gather the data needed for the following fieldwork task. Each student will complete a report of findings.

Step 1: Study the distribution of resources and landscapes over space in the schoolyard.

- Obtain an outline map of the schoolyard.
- Walk around the schoolyard and identify different categories of land use. Design a key for your map and mark in the land uses on your map.

FIGURE 2 A modern school environment



- As you walk around the schoolyard, also note the landscape (slopes, swamp, bare ground, concrete and so on). Record the information about the landscape on your map. You may add to your key or annotate the map. You may also wish to use an overlay. (See the 'Creating and analysing overlay maps' SkillBuilder in subtopic 12.12.) You could also add images.

- Describe the distribution of land uses in the schoolyard. Can you identify regions? Mark these on your map. Consider using an overlay. Is there any interconnection between the landscape and land use?

Step 2: Study the patterns of movement in the schoolyard.

- Choose two places that students often walk past.
- Record the number of students who pass and the direction of travel in two 5-minute sessions.
- Add this information to your map. Which are the busiest walkways in the schoolyard?

Step 3: Make recommendations for improvements to the schoolyard.

Based on the information you have gathered, describe:

- pleasing aspects of the schoolyard
- disappointing aspects of the schoolyard
- your three most effective suggestions for improving the schoolyard.

Mark the location of the proposed changes on your map. You may include images of proposed changes.

Conduct a short survey of 10 other students to find out what they think about your three suggestions for improving the schoolyard.

When conducting your survey, there are three types of questions you need to ask: those that seek an opinion, those that seek a fact and those that seek a suggestion.

- To seek opinions, try to ask for a rating. For example, *There should be more seats in the schoolyard. Do you (a) strongly disagree? (b) disagree? (c) neither agree nor disagree? (d) agree? (e) strongly agree?*
- To seek facts, ask for a structured response. For example, *How often do you use the seating by the oval? (a) Every day (b) 1–3 times a week (c) A few times a month (d) A few times a year (e) Almost never.*
- To seek suggestions, use open-ended questions. For example, *What sorts of plants do you think should be planted along the front fence?*

Create one question for each of your suggestions. Cover each type of question. Ensure you have your map with you when you ask the questions.

Collate, or gather, the survey data for each question. For each question, count the number of responses that are the same, and present the result in words, in a table or in a graph. (You might choose a bar graph, for example). There might be a clear trend in the responses or there might be variety in the responses.

To what extent do your survey findings support your suggestions? Describe the result.

12.11 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What are the three themes used when investigating liveability? Why do you think these are chosen?

Explain

2. Refer to table 1 and identify two aspects that could be placed in a different theme. Justify your suggested **change**. Suggest one more indicator that should be included. Into which theme would it belong?

Discover

3. Refer to figure 1 and use an organiser like a Venn diagram to compare and contrast the liveability wish lists for young families and older people.
4. Find a local news story about a change to liveability in your area. Is the change economic, social or environmental? Is the **change** predicted to be positive or negative? Will the **change** be permanent?

Think

5. How could the improvement in liveability for one age group actually help the liveability of another age group? Provide an example.

12.12 SkillBuilder: Creating and analysing overlay maps

online only

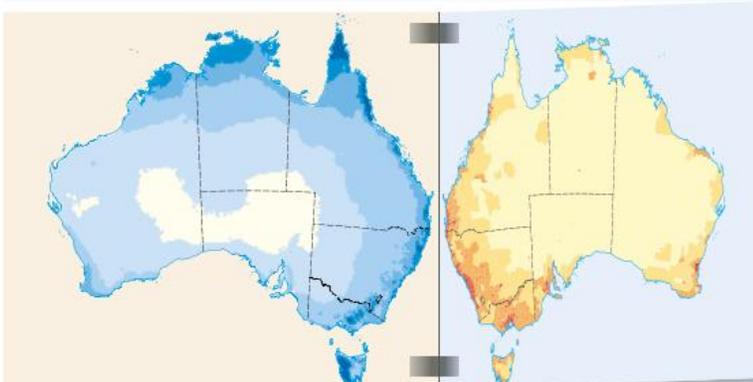
WHAT ARE OVERLAY MAPS?

An overlay map usually consists of two or more maps of the same area. A base map is overlaid with a transparent overlay, showing different information. Overlay maps allow users to see the relationships between the information on two or more maps.

Go online to access:

- a clear step-by-step explanation to help you master the skill
- a model of what you are aiming for
- a checklist of key aspects of the skill
- a series of questions to help you apply the skill and to check your understanding.

FIGURE 1 Base map with overlay



learn on RESOURCES — ONLINE ONLY

 Watch this eLesson: Creating and analysing overlay maps (eles-1645)

 Try out this interactivity: Creating and analysing overlay maps (int-3141)

12.13 How could my community be made more liveable?

12.13.1 Transport strategies

People in towns and cities are always looking for strategies to improve their living conditions. A community is made up of people from a range of age groups, a number of different land uses, a range of needs and a variety of interests. Ideas and plans for improvement may be overarching or targeted.

The movement of people within and between neighbourhoods is an important issue in towns and cities. The humble bicycle is now seen as a way of increasing mobility, reducing traffic congestion, reducing air pollution and boosting health. Bicycle tracks

FIGURE 1 Recreational riding along a trail mainly designed for bicycles



encourage recreational riding for all ages and dedicated bicycle paths along main routes (see figure 2) encourage people to commute by bicycle, rather than car, to work and school.

In 1965, a group in Amsterdam, the Netherlands, introduced the idea of bike sharing — public bicycles that are hired, usually for short trips. This first attempt was not a success, but the idea persisted. Modern bike-sharing systems have overcome problems of theft and vandalism by using easily identifiable specialty bicycles, monitoring the bicycles' locations with radio frequency or GPS, and requiring credit-card payment or smart-card-based membership to check-out bicycles. In some places, bicycles can be located on your mobile phone, and there are more links

between bicycles and existing public transport. Today there are more than 500 cities in 49 countries that have bike-sharing programs, with a combined fleet of over 500 000 bicycles. Bike-sharing programs are an example of a popular strategy that is aimed at improving liveability for a range of ages and locations within a community.

An example of a successful bike-sharing scheme is in Paris. The Vélib was introduced in 2007 and quickly doubled in size. By 2012, bicycle trips in the city had grown by 41 per cent. Bike sharing is part of a plan to reduce car traffic and pollution in Paris, which includes closing streets to cars on weekends, reducing speed limits, encouraging bus travel and extending bicycle lanes.

FIGURE 2 Special bicycle lanes increase the safety of bike riding



12.13 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What are three advantages of increasing bicycle riding?
2. What problems were faced by the first bike-sharing scheme?

Explain

3. Use the **Bike-sharing** weblink in the Resources tab and scroll down the webpage to the link '(See data.)'. This will take you to an Excel document. Use this document to answer the following questions.
 - (a) In 2012, how many bike-sharing programs were there in each of these regions?
 - Asia-Pacific
 - Europe
 - Latin America
 - Middle East
 - North America
 - (b) Name at least two countries with bike-sharing programs in each of these regions.
 - (c) Which region has the most programs?
 - (d) Which region has had programs for the longest period of time?
 - (e) Which region has introduced programs most recently?

- (f) Which region has the greatest number of bicycles? Is this the same region that has the greatest number of programs?
- (g) Explain how you could present data about bike-sharing programs on a map. Provide examples of how you would show:
- countries with programs
 - the number of programs per country
 - the number of bicycles per country.

Discover

4. Find out about a bike-sharing scheme in Australia or overseas. Describe its location and the region it covers. Provide three other key facts about the scheme.
5. Some cities provide schemes to encourage people to ride bikes. Find out about the success of bike incentive schemes in European cities. Include the name of the city, the date of the scheme, summary of the scheme and evidence of success or failure.

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 Explore more with this weblink: Bike-sharing

RESEARCH TASK

Teenage spaces in your community

A community is made up of a number of groups that interconnect. Teenagers are an important part of any community.

1. Produce a pie graph to show the population of your community. Refer to the latest census data provided by the Australian Bureau of Statistics. Show the percentage of each of the following categories: less than 13 years old, teenagers, adults and elderly.
Participation by teenagers in the community will be influenced by values, abilities and interests.
2. (a) Find and read a news article in the local media that is about teenagers. Note the source and date and summarise it in three dot points. For example, is it about an issue that relates to only teenagers, a space used by teenagers, an achievement by teenagers, a complaint about teenagers or a positive story about teenagers?
(b) As a class or in a small group, brainstorm a list of the ways in which teenagers participate in the community. Divide the agreed list into the following categories: informal, **formal**, social, cultural and physical.
3. (a) Find a map of your local area and use dots to show the spaces that are most attractive to teenagers. Ensure that your map satisfies all mapping conventions (BOLTSS).
(b) Describe the distribution pattern of attractive places. Is the pattern linear (in a line or lines), clustered (in small groups) or scattered?
(c) Think about the pattern you have mapped and your knowledge of the region. Are most of your favourite spaces indoors or outdoors? To what extent is there a connection between the pattern on your map and other features in your neighbourhood? Are your favourite spaces in places that are strongly influenced by the natural environment or the built environment?
(d) Add an overlay to your **base map** and use dots to show the least favourite spaces for teenagers. Describe the pattern shown on your overlay map. To what extent is there a connection between the pattern on your overlay map and other features in your neighbourhood?
4. Provide up to three examples of ways you participate in communities bigger than the local neighbourhood. For each example:
 - (a) Describe the scale of that community. Does it cross local council borders, state borders or national borders?
 - (b) Refer to a relevant map (for example, in your atlas or a street directory) to find out the direction and distance from that place to where you live. Add an arrow to your map pointing in the correct direction. Add a label to the arrow to describe the activity and the distance.

Improving your community

5. (a) Identify a space in your neighbourhood that you think could be improved for teenagers. It may be one that is currently attractive, or it may be a least favourite space.
- (b) Provide an image (photograph, diagram or map) of this space. Annotate the image to describe its current characteristics.
- (c) Identify the key concerns about this space. You might think about safety, tolerance, sustainability, access, inclusiveness, services, environmental quality, health and respect.
- (d) How would you improve this space?
- To help you think of suggestions, use your research skills to find out about ways in which liveability has been improved for teenagers in other parts of the world. Consider European countries in particular.
 - Discuss the ways in which the European ideas are relevant, or not relevant, to your community.
 - Provide a planning suggestion for each of the concerns you raised in question 5(c).
- (e) Provide a new image to show the impact of your proposals. This could be a diagram, sketch, annotated photograph, model or whatever helps communicate what the impacts might be.
- (f) Which are your two most important suggestions? What criteria did you use to choose these suggestions? Which suggestion is most likely to be implemented? Why?
- (g) Compare your suggestions to the ideas of others in your class. What are the common elements? What would you put in a master plan for teenage spaces in your community?

12.14 Review



12.14.1 Review

The Review section contains a range of different questions and activities to help you revise and recall what you have learned, especially prior to a topic test.

12.14.2 Reflect

The Reflect section provides you with an opportunity to apply and extend your learning. Access this subtopic at www.jacplus.com.au

12.4 Skillbuilder: Drawing a climate graph

12.4.1 Tell me

What are climate graphs?

Climate graphs, or climographs, are graphs that show climate data for a particular place. They combine a column graph and a line graph. The line graph always shows average monthly temperature, and the column graph always shows average monthly precipitation (rainfall). Temperature can be shown in one line, as mean monthly temperature; or it can be shown in two lines, as maximum and minimum monthly temperature.

Why are climate graphs useful?

Climate graphs are used to show the climate of a place over a 12-month period. As the red line on the graph shows temperature and the blue columns show rainfall, you can quickly understand the graph. It is much easier to compare the climate of two places by looking at climate graphs than by looking at tables of statistics, so drawing and using these graphs is an important geographical skill. It also makes it very easy to compare climate patterns for different areas when the graphs are drawn using the same conventions. The left-hand axis represents temperature and the right-hand axis represents rainfall, so you must take care to read from the correct scale when interpreting a climate graph.

Mount Isa is located in the arid Gulf Country region of Queensland. It has some of the world's richest deposits of copper, silver and zinc. It is one of the largest centres in outback Australia. Most of the population of nearly 23 000 people are involved in mining. In the climate graphs in figures 1 and 2, you can see how one or two temperature lines can be used to give us an understanding of the climate.

FIGURE 1 Climate graph for Mount Isa, Queensland

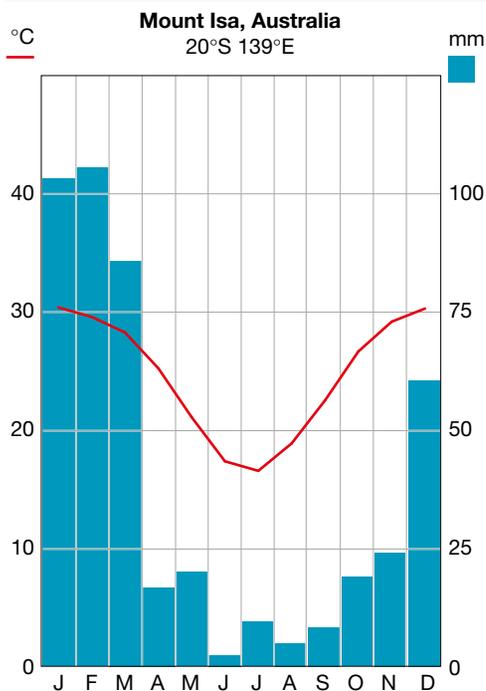


FIGURE 2 Climate graph for Mount Isa, showing maximum and minimum temperature averages

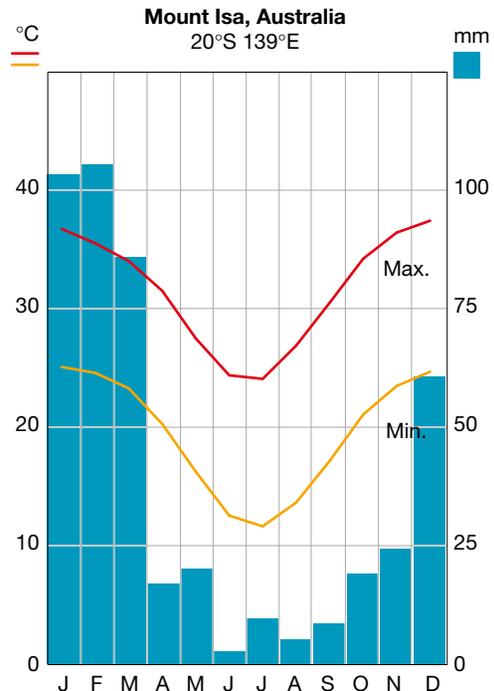
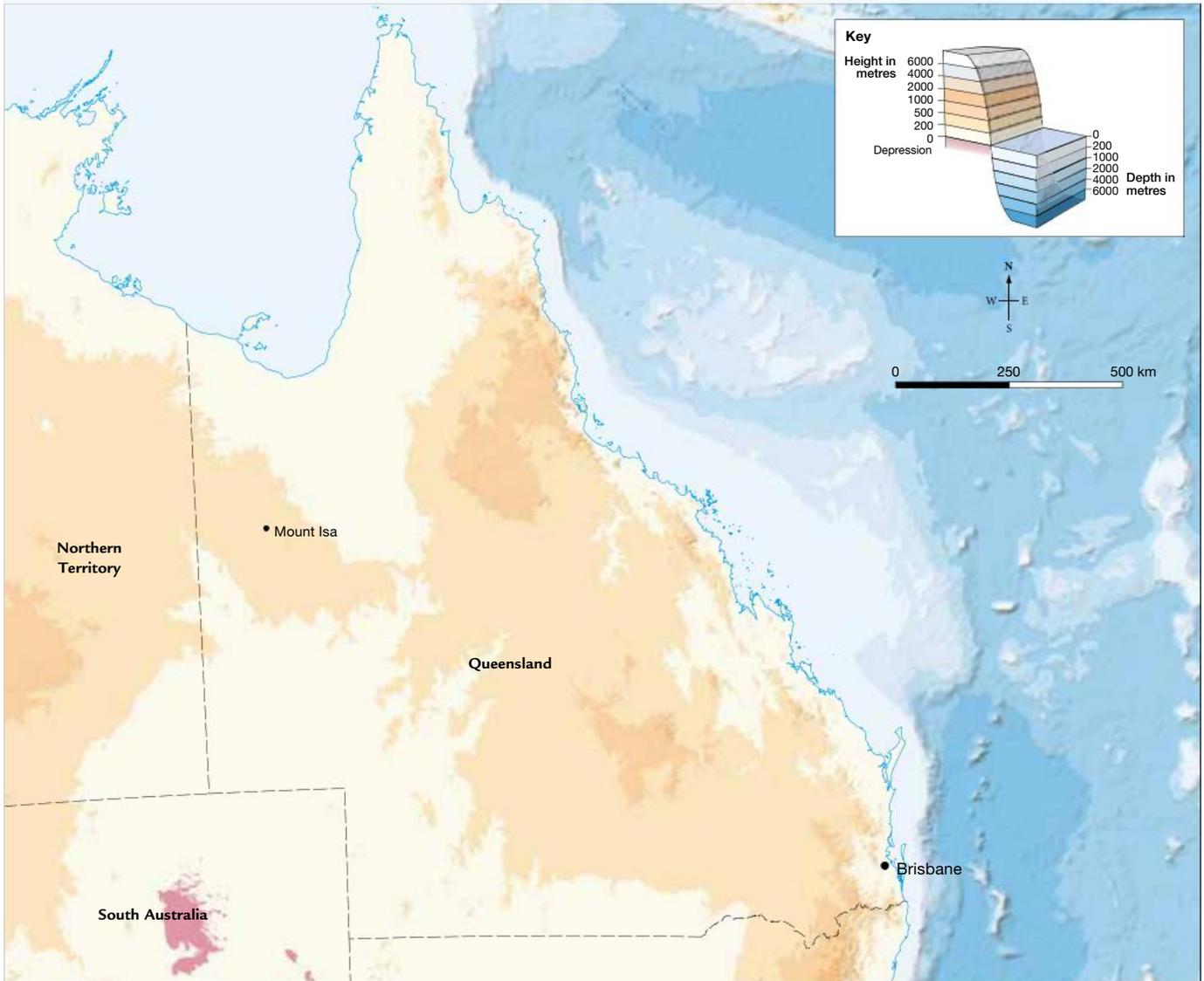


FIGURE 3 Location of Mount Isa



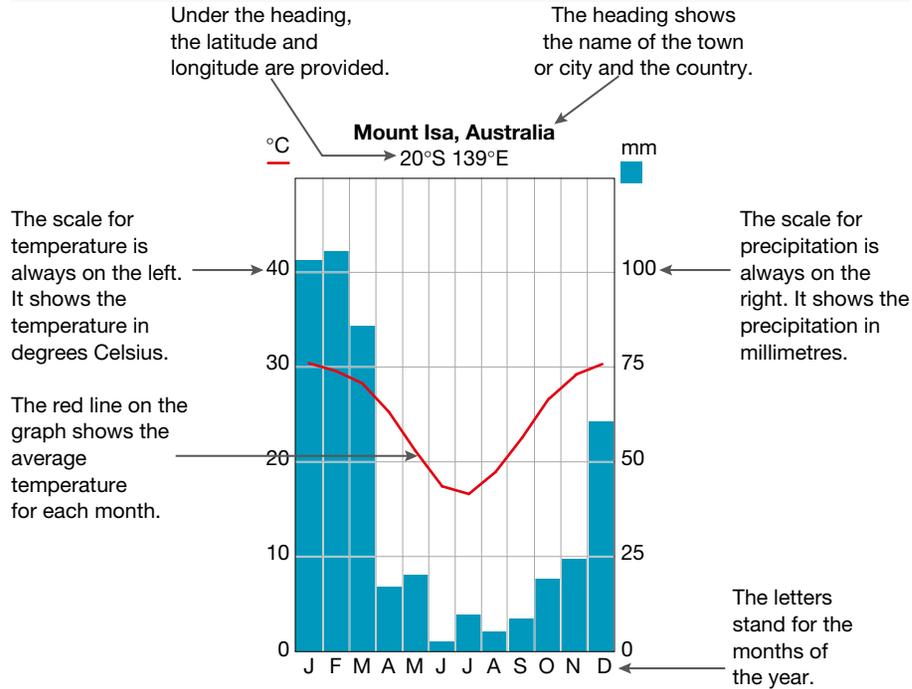
Source: Spatial Vision

Model

A good climate graph:

- is drawn in pencil first, and then coloured
- has ruled axes
- has labelled axes
- makes use of small dots before a line is drawn
- has a smooth curve for the line in red
- has columns shaded in blue
- includes a title
- includes a source.

FIGURE 4 Features of a climate graph



12.4.2 Show me

How to complete a climate graph

You will need:

- data to plot on your graph
- graph paper
- a grey lead pencil
- a ruler
- a red pen and a blue pencil.

Procedure:

To complete a climate graph, you must have data for the place of interest. If you need to find data, use the **World climate** weblink in the Resources tab for locations outside Australia, and use the **Bureau of Meteorology** weblink for Australian locations.

STEP 1

Look at the data in table 1. Two sets of data are given: average monthly precipitation and average monthly temperature.

TABLE 1 New Delhi, 28°N 77°E, average monthly precipitation and average monthly temperature

	Jan.	Feb.	Mar.	Apr.	Ma.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°C	14.1	16.9	22.4	28.6	32.8	33.8	31.0	29.8	29.2	26.0	20.3	15.4
mm	22.7	20.1	14.5	10.1	15.0	67.9	200.4	200.3	122.5	18.5	3.0	10.0

Source: www.worldclimate.com

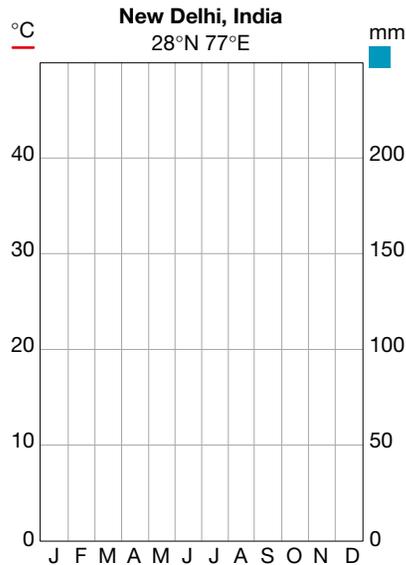
STEP 2

Consider the range of the data before you decide what scales will work for the vertical axes. For the right-hand axis, find the wettest month. The precipitation scale begins at 0 and extends far enough to include the wettest month. For the left-hand axis, find the highest and lowest temperatures. A scale of 0 °C to 40 °C will suit most climate graphs. Try to use temperature and precipitation scales that prevent the line and column graphs from overlapping; however, this may not be possible if the place has a very high rainfall.

STEP 3

Use a ruler and pencil to draw the axes on graph paper. Divide the horizontal axis into 12 equal sections to represent the months of the year. Label each month. Label the temperatures on the left vertical axis and precipitation on the right vertical axis.

FIGURE 5 Set of axes for New Delhi



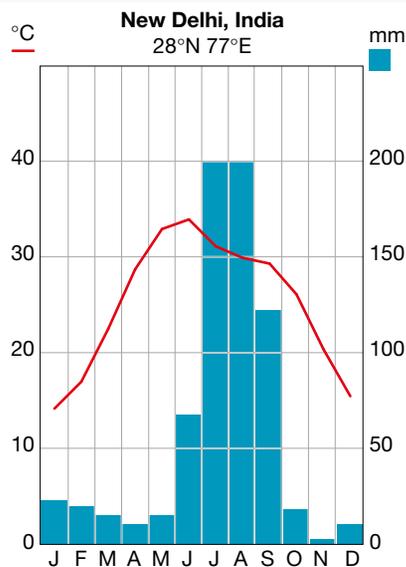
STEP 4

Construct a column graph showing the average monthly rainfall for New Delhi. Make sure you use the right-hand vertical scale to plot your data. Rule a line across each column and colour the column blue.

STEP 5

Construct a line graph showing the average monthly temperature for New Delhi. Plot the temperature by placing a dot in the centre of each month. Make sure that you use the left-hand vertical scale. Use a red pen to join the dots with a smooth curve; don't use a ruler.

FIGURE 6 New Delhi, climate graph



Source: www.worldclimate.com

STEP 6

Add a title, giving the name of the place, the country and the latitude and longitude. You can also show the elevation if you wish.

STEP 7

Add the source of your data.

learn on RESOURCES — ONLINE ONLY

 Watch this eLesson: Drawing a climate graph (eles-1644)

 Explore more with these weblinks: World climate, Bureau of Meteorology

12.4.3 Let me do it

Developing my skills

Use the data in table 2, or select data using the **World climate** weblink in the Resources tab for a place that is relevant to your studies in geography. Then draw a climate graph.

TABLE 2 Mount Buller, Victoria, 37.15° S, 146.44°E, elevation 1707 m, average monthly precipitation and average monthly temperature

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	17.2	16.5	14.4	10.0	6.2	3.0	1.4	2.0	4.9	8.2	11.8	14.3
mm	59.0	68.0	44.8	76.1	110.0	154.2	161.0	145.6	143.0	110.6	126.8	84.3

Source: Australian Bureau of Meteorology

Questions

Mount Buller is a mountain in the Australian Alps. It is three hours' drive from Melbourne, and is the closest major mountain to Melbourne for skiing in winter.

1. Which month is warmest in Mount Buller?
2. Which month is coolest in Mount Buller?
3. Which month has the greatest precipitation in Mount Buller?
4. Which month has the least precipitation in Mount Buller?
5. Describe the climate of Mount Buller.

Checklist

I have:

- ruled the axes and labelled them
- drawn first in lead pencil and then used colour
- used small dots for the lines and then created a smooth curve with red pen
- shaded the columns in blue
- included a title and source.

Skills questions

1. Climate graphs are used to show:
 - (a) temperature and wind
 - (b) the shape of the land
 - (c) total hours of sunlight
 - (d) precipitation and temperature.

2. When a climate graph includes two lines, they represent:
 - (a) wind and rain
 - (b) minimum and maximum temperatures
 - (c) rainfall for the past two years
 - (d) wind and temperature.
3. Why might blue have been chosen as the conventional colour for showing precipitation?
4. Why don't we draw one climate graph for a whole country, such as Australia?

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 Try out this interactivity: Drawing a climate graph (int-3140)

12.5 What makes Melbourne the world's most liveable city?

12.5.1 What is Melbourne like?

What makes Melbourne such a liveable city? Use the **Melbourne view** weblink in the Resources tab to listen to why it was voted the world's most liveable city. Think about whether or not Melbourne is a 'perfect' city. Saying that a city is the 'most liveable' gives it a ranking, like those given to cars or restaurants. The criteria that are used for the selection process may change, though. In 2015 it was best, but why?

FIGURE 1 The balance of good features and not-so-good features.



12.5.2 Is all of Melbourne the same?

Within the most liveable city, there are some parts that are more liveable than others. People may have higher incomes, larger houses, more and better cars, a view of the sea or the Yarra River, and better shops and entertainment facilities. This does not mean that the highly liveable inner eastern and southern suburbs do not have pockets of poorer housing and homelessness; it is just that they have fewer of them.

Like most large cities, Melbourne is known for its regions. There is a north–south divide, with the Yarra River acting as the boundary, and an east–west divide, with the CBD as its boundary. The west is predominantly flat, dry land, with cheaper housing and land values. The south and east are the leafy suburbs with bayside and hill views, more expensive land and larger houses. The inner north is quite trendy, and more expensive than the west. But the outer suburbs, in all directions, are less well serviced by infrastructure. These areas have huge new suburbs full of large houses on smallish blocks, which are much cheaper than anything close to the centre of the city.

FIGURE 2 (a) Central Melbourne — the Yarra River, parkland, sporting facilities and central business district (b) Melbourne tram (c) Modern office buildings (d) Graffiti in Hosier Lane (e) Outer suburban area of South Morang (f) Studley Park, not far from the city centre



FIGURE 3 Promotion for Melbourne



12.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. What are two ways of describing the weather in Melbourne?
2. What is the city's traffic like during peak times?
3. (a) What is the difference between the landforms in Melbourne's east and west?
(b) What is the difference in rainfall between Melbourne's east and west?

Explain

4. View a video about Melbourne being ranked the world's most liveable city using the **Melbourne view** weblink in the Resources tab. Do you think the filmmaker believes that Melbourne really deserves its number one ranking? Explain your answer with reference to the content of the clip.
5. Look at the images of Melbourne in figure 2. List 10 liveability factors that these images illustrate.

Discover

6. Which of Melbourne's not-so-good features may have an impact on whether it remains the world's most liveable city?

Think

7. Which Australian city do you live in, live closest to or know best? Write a summary of it, similar to that provided in figure 1. Can you identify any major differences between your city and Melbourne?
8. Why do you think that four of Australia's major cities are ranked in the world's top 10?

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Explore more with this weblink: [Melbourne view](#)

12.8 Dhaka – a less liveable city?

12.8.1 Dhaka

Some regions of Dhaka are similar to Australian suburban areas, with solid housing structures, shopping centres, high car ownership, and high expenditure on cars, household possessions, personal services and technology. However, it is the incidence of poverty and unplanned urban growth that leads to the city being ranked as one of the least liveable in the world.

Environment

Dhaka is the capital city of Bangladesh. It is located in Asia at latitude 23.43°N.

FIGURE 1 Location of Dhaka



As you can see in figure 2:

- there is a distinct dry season
- eighty per cent of rain falls in the wet season (the monsoon)

- it is often hot and humid
- approximately 2000 mm of rain falls per year
- it is warm to hot all year.

TABLE 1 Humidity levels in Dhaka

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Humidity (%)	54	50	45	56	72	80	80	79	79	73	67	64

Dhaka is only 2–13 metres above sea level. Snow-melt from the Himalayas feeds the rivers. This area is at high risk from climate change. Any increase in snow- and ice-melt or rainfall will add to river flow. There are many rivers that flow near Dhaka. There is a high risk of flooding. During the monsoon, there are often strong winds, which also cause damage.

FIGURE 2 Climate graph for Dhaka

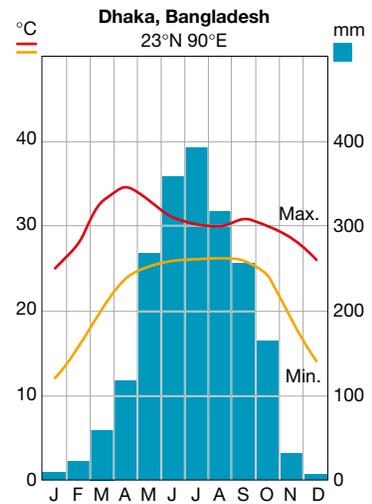
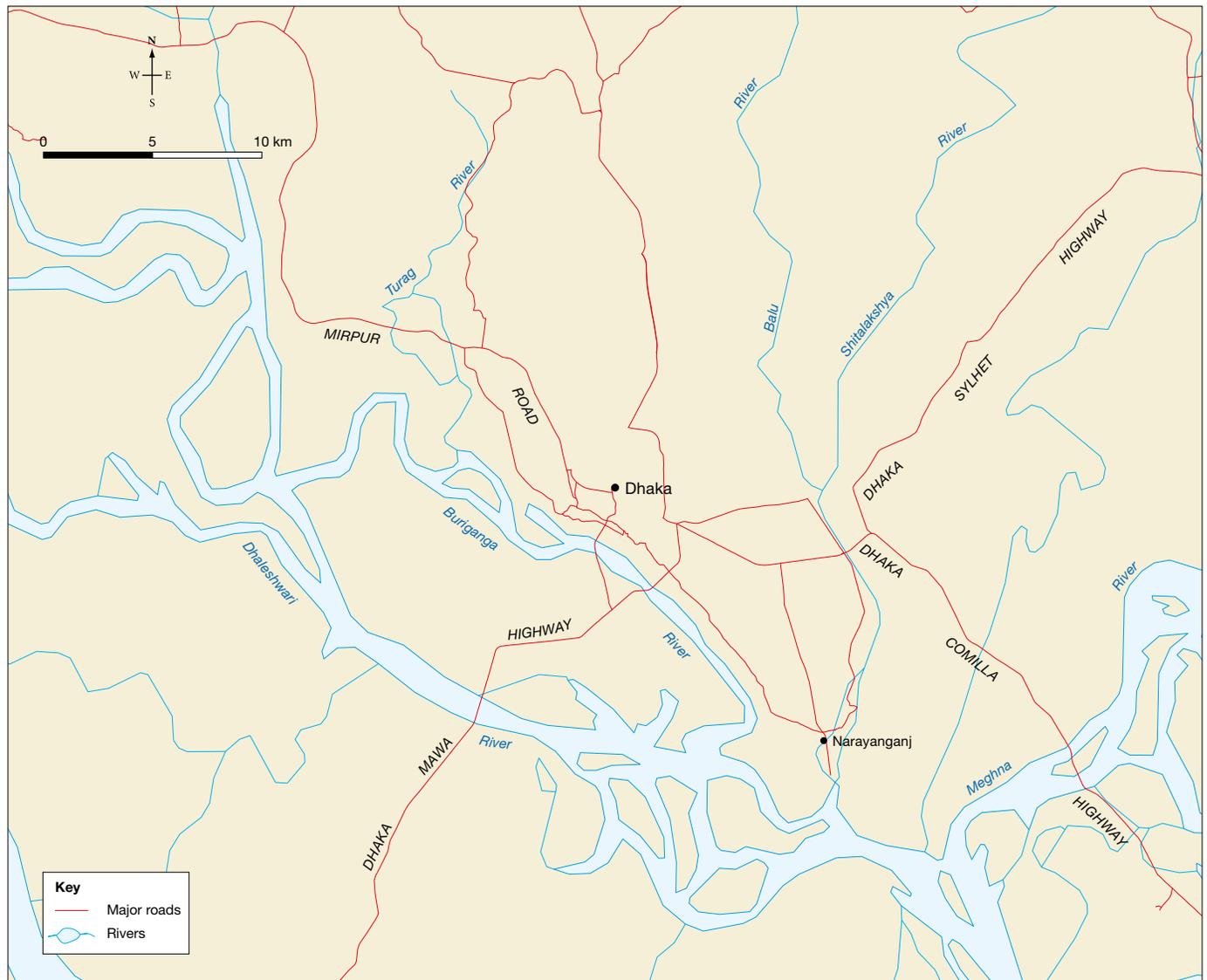


FIGURE 3 Map showing many rivers that flow through and around Dhaka



Source: © OpenStreetMap contributors

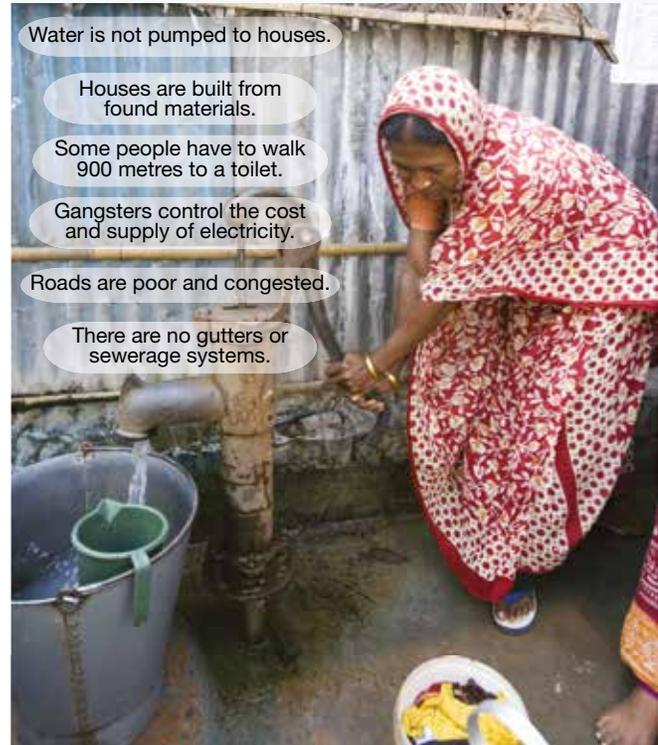
Infrastructure

The population of Dhaka is more than 15 million, and it is growing by about 400 000 every year. People migrate to the city in the hope of finding work in the growing industrial sector. The huge influx of people has led to unplanned urban growth on vacant land, and about half the population live in slums. This has created one of the most densely populated cities in the world. Because people can be evicted from the slum areas by landowners, the government does not provide infrastructure.

FIGURE 4 This woman has to walk through floodwaters to collect drinking water. Poor areas have no drainage, and floodwater quickly spreads into houses and over paths.



FIGURE 5 A communal water pump in a slum region



Safety

Crime rates are high in the poor areas of Dhaka. There is gangster violence; land grabbing; violence against women and children; arson; and crimes related to gambling, drugs, alcohol and illegal weapons. There are not enough police officers, and they cannot be relied on to protect citizens.

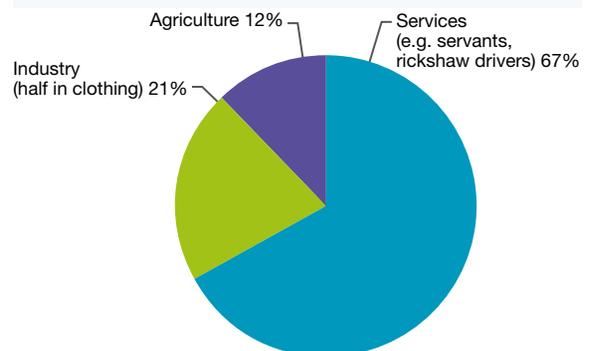
Education

Primary education is compulsory but the government is unable to provide enough schools and resources for the increasing population. Many students do not attend school all the time because their families need them to earn money. In spite of the tough conditions, the education rate in the city is slightly higher than in rural areas, and the national **literacy rate** is about 70 per cent.

Economy

Most jobs are found in the informal sector; examples include rickshaw driver, street vendor and garment worker. Women are excluded from trades and transport, and most find work as servants or in agriculture. (Food is grown on vacant land within and around the city.) The pay in these types of jobs is low, and most or all household members need to work. Child labour is common;

FIGURE 6 Employment of Dhaka poor



20 per cent of children aged under 15 are working. About 30 per cent of the urban population is poor, and many live on \$1 a day. Even with these disadvantages, many people think the city offers a better quality of life than the rural areas do.

FIGURE 7 Children as young as 7 undertake exhausting work. This child is earning \$1 a day.



Healthcare

Healthcare is mainly provided through hospitals, which are located in the **formal** part of the city. There is a shortage of hospital beds, equipment, doctors and nurses. There are no medical facilities in the slums, and often families cannot afford to pay for treatment. Private charity groups do offer some programs, particularly for maternal health.

12.8 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Remember

1. In which continent is Dhaka?
2. When is the monsoon season in Dhaka?

Explain

3. How does the natural **environment** influence life in Dhaka?
4. How is life in the Dhaka slums affected by the lack of resources that are normally provided by government, such as water, healthcare, education and safety?
5. Why do very young children go into the workforce?
6. Why does Dhaka continue to grow even though it rates poorly in terms of liveability?

Discover

7. Compare the population of Dhaka with the population of Australia.
8. The population density of Dhaka is approximately 40 000 people per square kilometre. Select one square kilometre of a residential region near your school. Estimate the number of people who live in that **space**.

Think

9. Choose one of the other least liveable cities (see subtopic 12.3) and find out how the natural environment creates challenges and provides benefits there. Consider the city's location, climate and landscape.

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➡ Try out this interactivity: Safe as houses (int-3097)

12.12 SkillBuilder: Creating and analysing overlay maps

12.12.1 Tell me

What are overlay maps

An overlay map usually consists of two or more maps of the same area. These maps are drawn at the same size or scale but show different information. The base map often shows information that does not change very much. Another transparent overlay, showing different information, is laid over the base map.

Why are overlay maps useful?

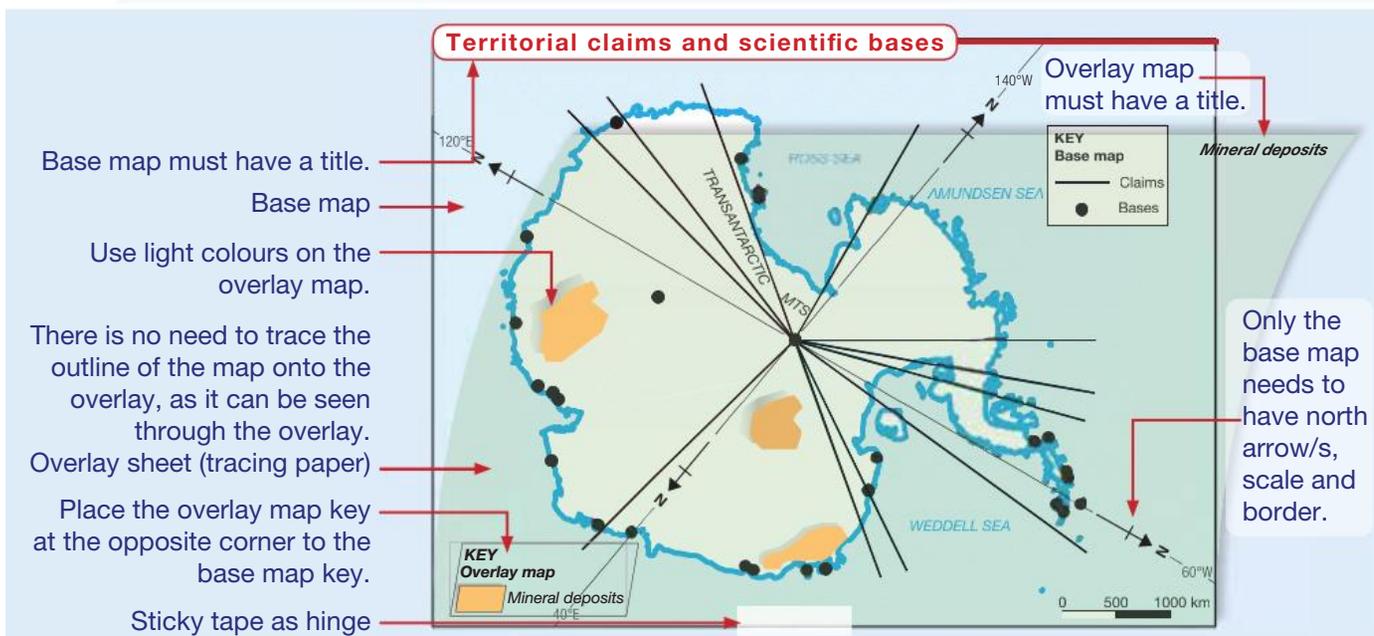
An overlay map is useful for comparing two different features on a map. It is really two maps in one — a base map drawn on paper and an overlay drawn on tracing paper to depict additional information.

Overlay maps allow map users to see the relationships between the information on two or more maps. They are useful when looking for patterns of spatial association — that is, features found in a similar distribution pattern.

Model

In the overlay map in figure 1, the base map depicts the continent of Antarctica, territorial claims and scientific bases. The overlay illustrates mineral deposits.

FIGURE 1 Constructing an overlay map of mineral deposits in Antarctica



A good overlay map:

- is drawn in pencil first, with colour added later
- includes BOLTSS on the base map
- uses light colours on the overlay so the base map information is visible
- includes a key for the element depicted on the overlay
- is hinged to the base map using sticky tape
- includes a title for the overlay.

12.12.2 Show me

How to complete an overlay map

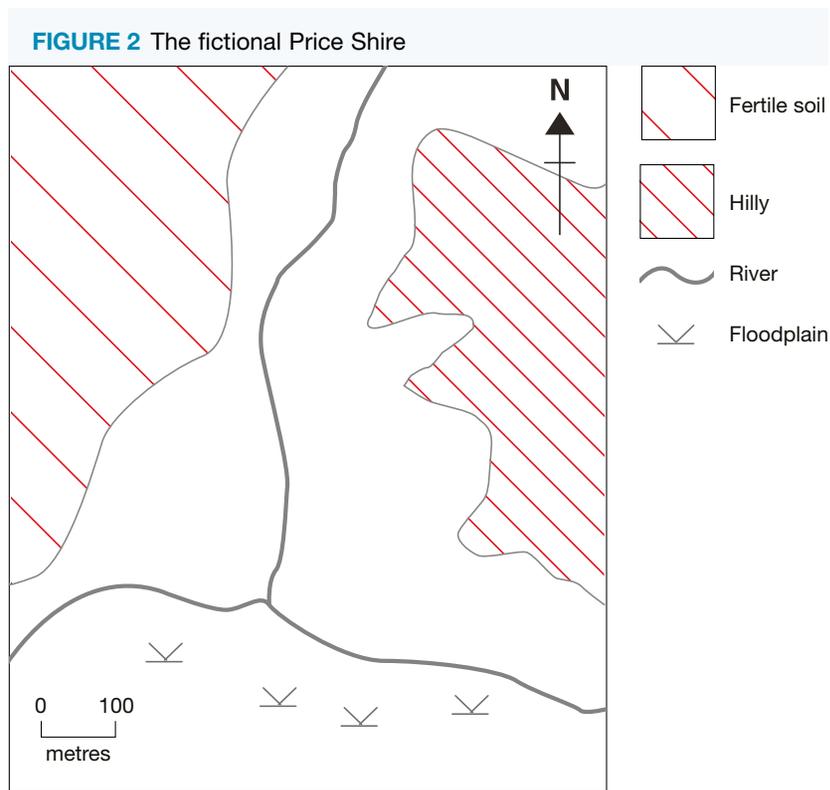
You will need:

- two or more maps of the same area, drawn at the same scale, and showing different information
- tracing paper
- cardboard (optional)
- clear adhesive tape
- a black lead pencil
- coloured pencils.

Procedure:

STEP 1

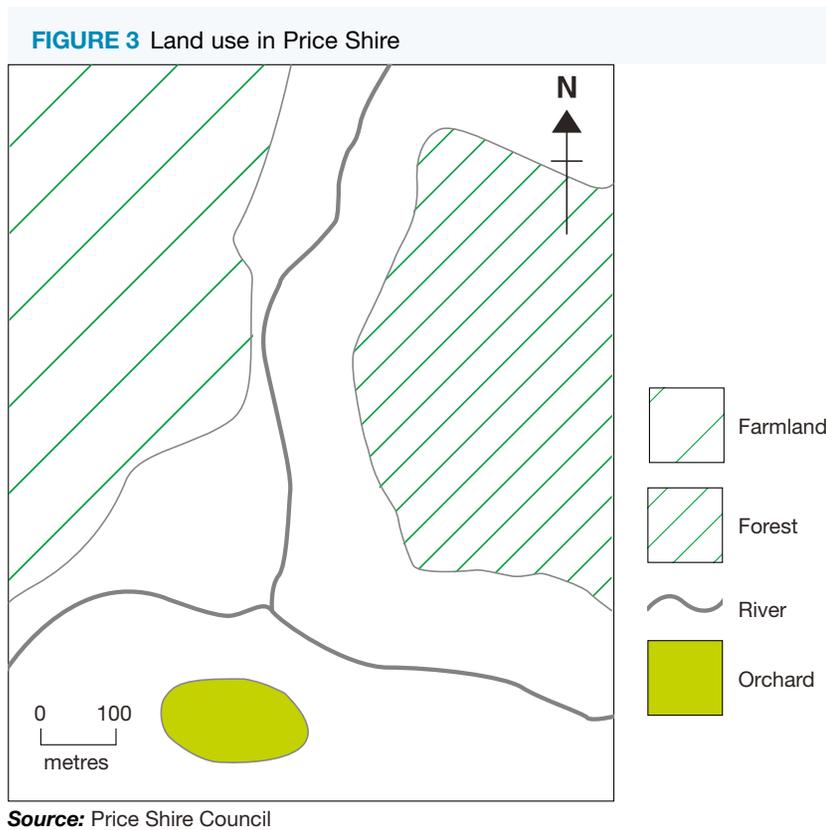
Create a base map of an area showing the distribution of features you are interested in displaying (figure 2). Base maps are drawn on clean white paper. To make a base map, you find a map of the area that you want to show, and trace the features that are relevant to your purposes. Ensure you include BOLTSS.



Source: Price Shire Council

STEP 2

Create an overlay of a second feature on the tracing paper (figure 3). (*Hint: Make sure the second map is of exactly the same area and is drawn to the same scale and size as the base map.*)



STEP 3

Join the base map and the overlay together using adhesive tape (figures 4 and 5). Before doing so, check that key features such as coastlines and major roads line up on both maps. You may wish to attach your base map to some cardboard to make it more durable. You can create more than one overlay, each depicting a different feature. If you do this, you can hinge each overlay from a different side of the base map.

FIGURE 4 Place the overlay onto the base map.

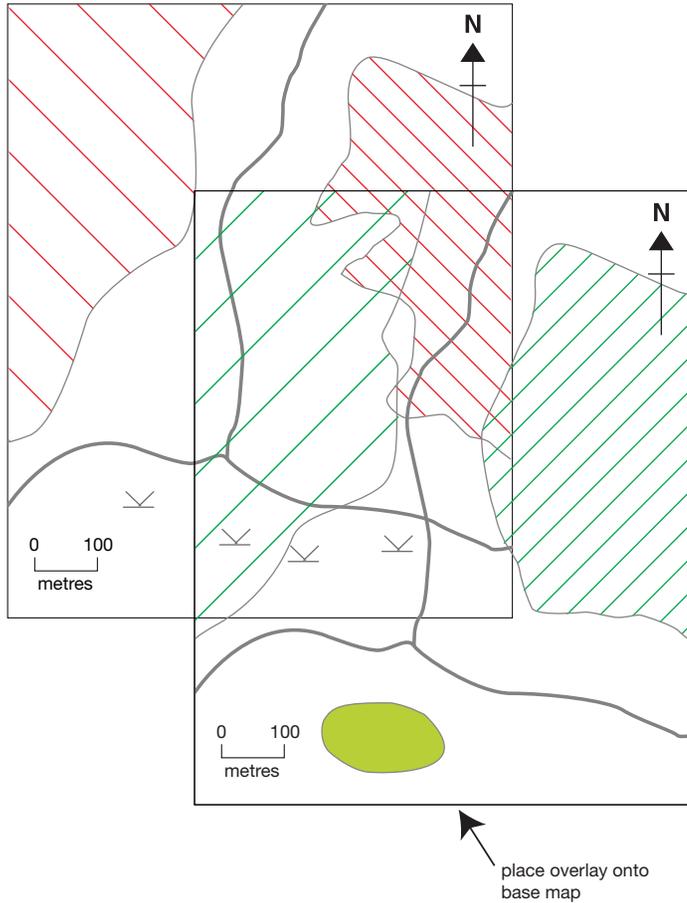


FIGURE 5 This overlay map reveals that farmland tends to be found in areas with fertile soils, and that forest tends to be found in hilly areas.



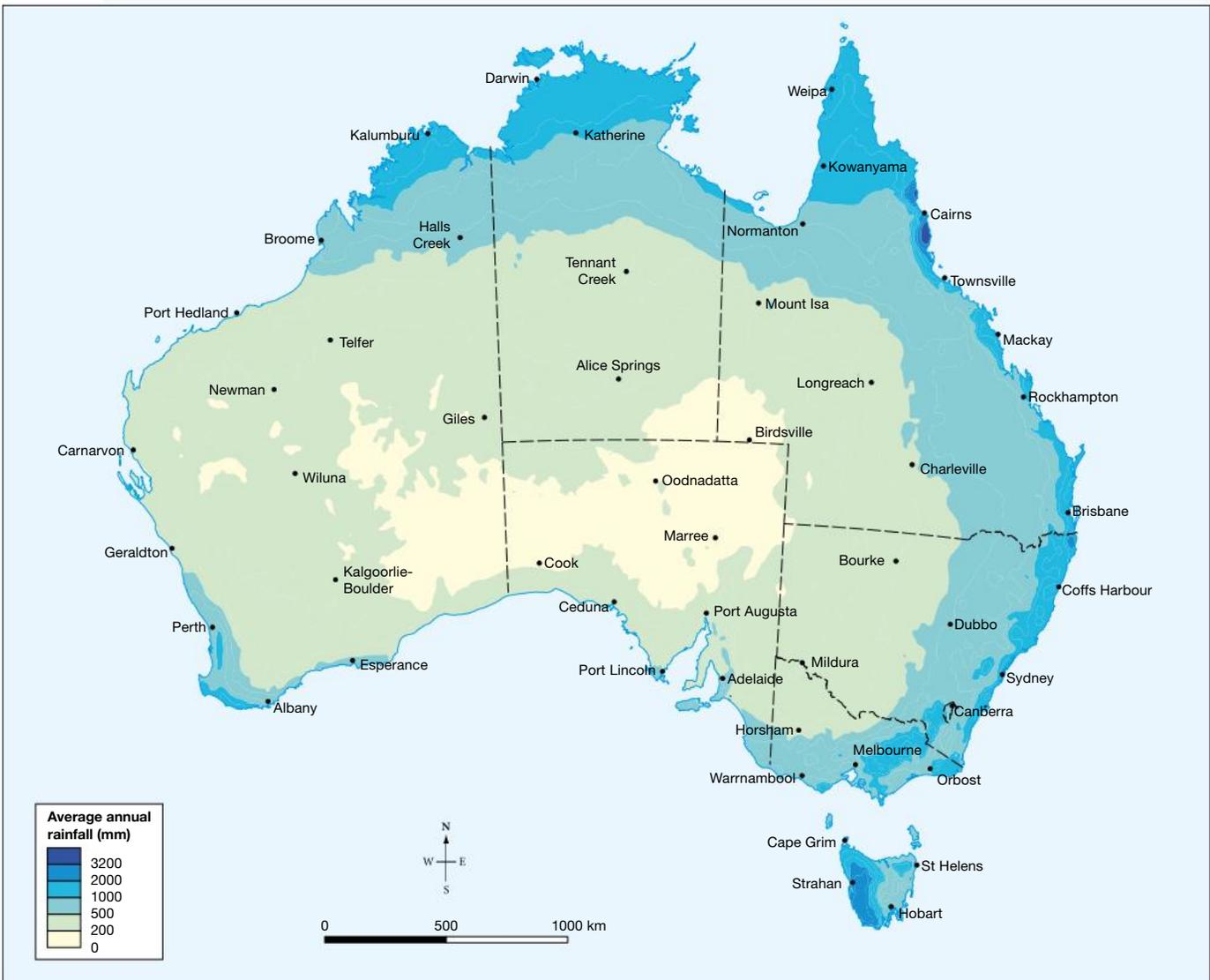
Source: Price Shire Council

12.12.3 Let me do it

Developing my skills

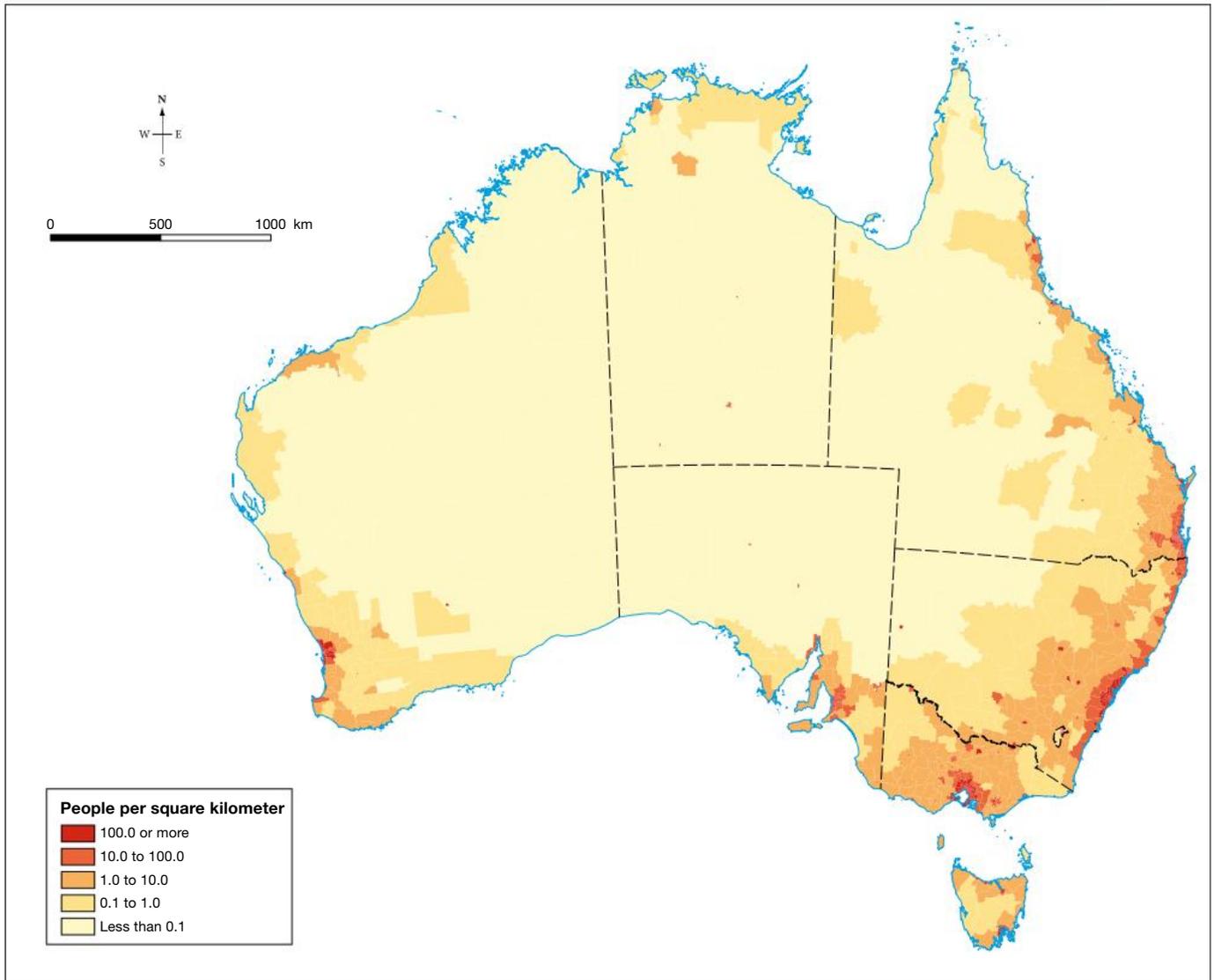
Create an overlay map to show the relationship between Australia’s rainfall and population distribution. Construct a base map of rainfall patterns.

FIGURE 6 Base map, Australian rainfall



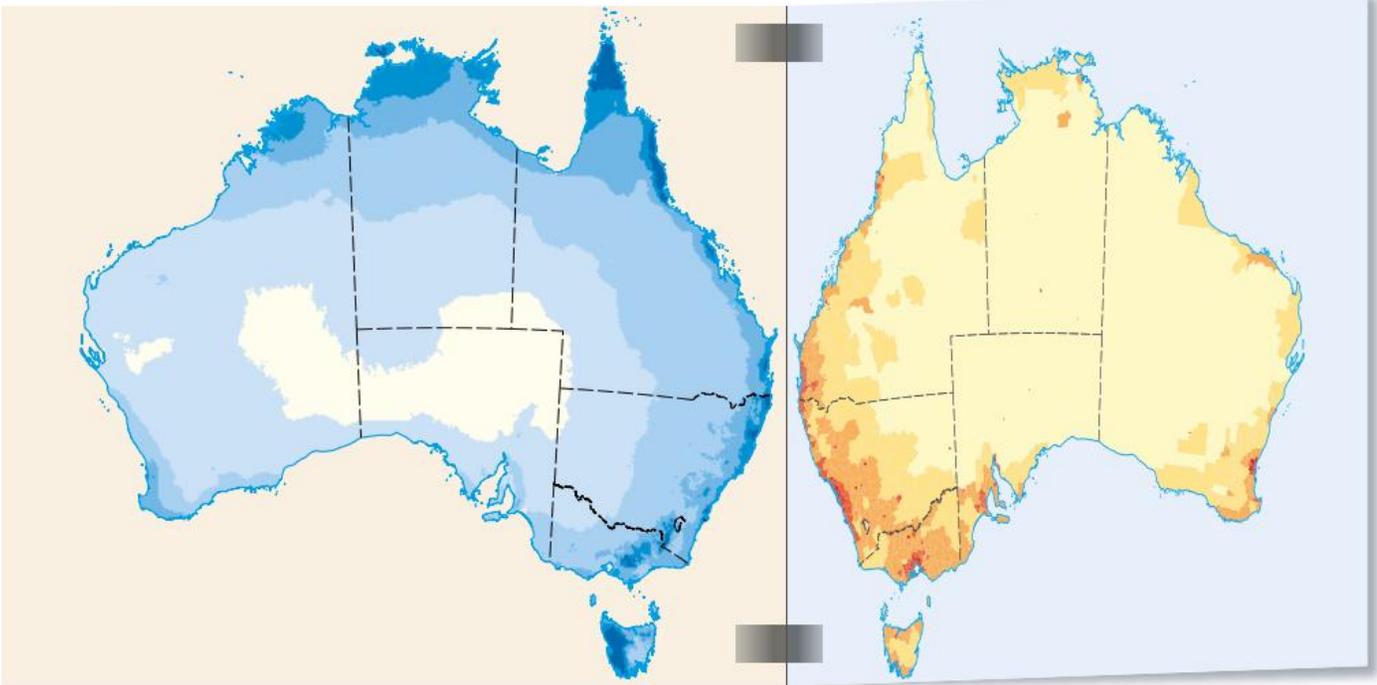
Source: Bureau of Meteorology

FIGURE 7 Overlay map, Australian population density



Source: Australian Bureau of Statistics

FIGURE 8 Base map with overlay



Questions

1. Look carefully at your overlay map and hunt for patterns between them. Find examples where rainfall and population:
 - (a) mostly coincide with each other
 - (b) sometimes coincide with each other
 - (c) do not coincide at all with each other.
2. Describe these areas, either by percentage or by amount of overlap.
3. How strong is the spatial association (relationship) between:
 - (a) high rainfall and high population density
 - (b) low rainfall and a low population density?

Checklist

I have:

- drawn in pencil first and then added colour
- included BOLTSS on the base map
- used light colours on the overlay
- included a key on the overlay
- hinged the overlay to the base map using sticky tape
- included a title for the overlay.

Skills questions

1. Overlay maps are most useful for:
 - (a) comparing two or more different features on a map
 - (b) investigating air pressure
 - (c) illustrating statistics
 - (d) none of the above.

2. Spatial association is:
 - (a) used to describe the distance between two objects
 - (b) the location of a single object
 - (c) the extent to which features are found in a similar distribution pattern
 - (d) a city in South Africa.
3. Why should you use light colours on a map overlay?
4. Why is it important to include BOLTSS on a base map?

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 **Try out this interactivity:** Creating and analysing overlay maps (int-3141)

12.14 Review

12.14.1 Review

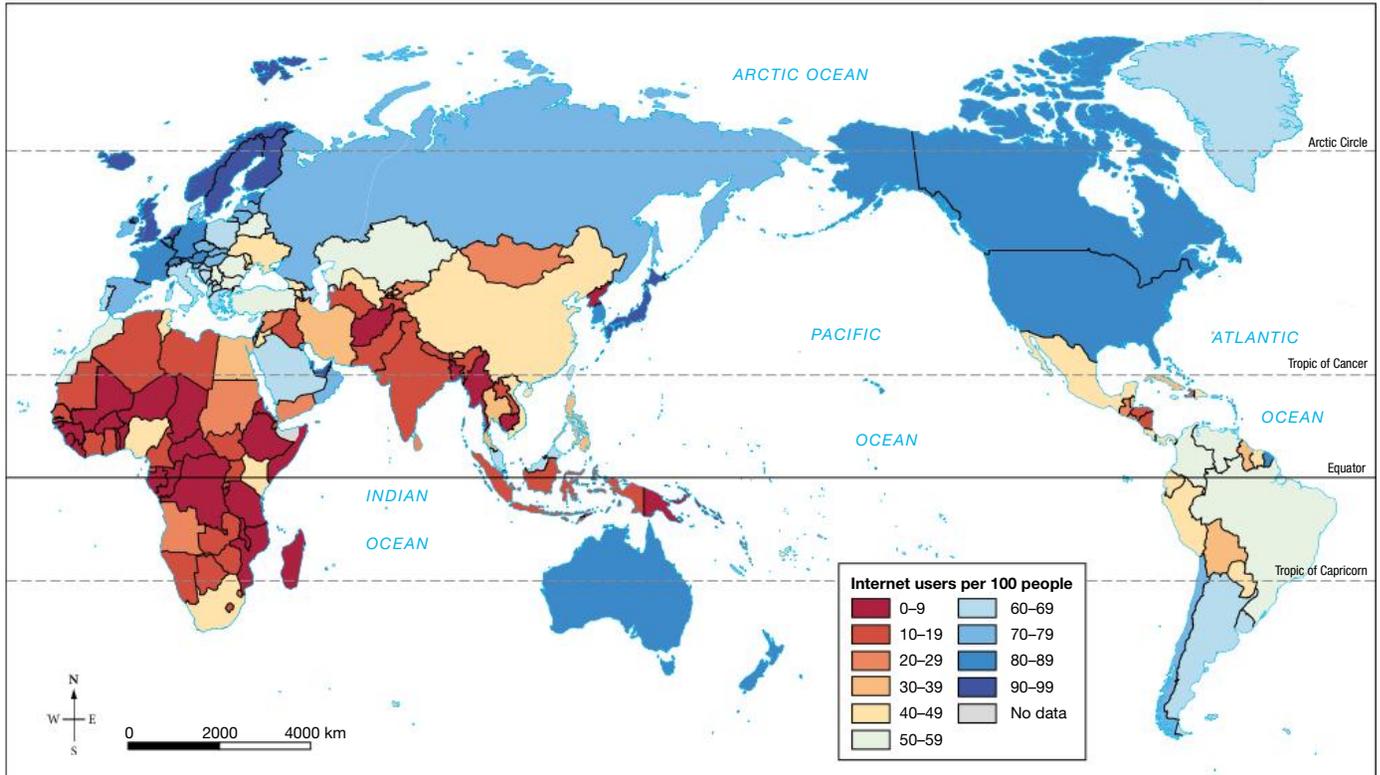
1. Explain how liveability can *change* over time.
2. Why is infrastructure so important for improving liveability?
3. Explain how the concept of sustainability includes social, economic and *environmental* aspects.
4. Describe the general connection between the ecological footprint and liveability.
5. What are three aspects of the typical Australian way of life that contribute to high resource use?
6. Identify similarities between the housing types in Port Moresby and Dhaka.
7. What sorts of jobs do people from the poorer regions of Port Moresby and Dhaka have access to?
8. How many Sustainable Development Goals are there?
9. Why are NGOs important?
10. Explain how small changes can make a big difference to living conditions.
11. How can geography skills help in projects that aim to improve liveability?
12. In the area in which you live, what is an example of a liveability improvement that has been provided by local government or a local group?
13. How can short-term *environmental* conditions influence liveability?
14. Why doesn't growing a crop and selling it help to decrease hunger?

12.14.2 Reflect

15. How does the *place* in which you live influence your view of what makes a satisfactory standard of liveability?
16. Provide at least three examples that show the influence of the *environment* on living conditions.
17. What are the advantages and disadvantages of the informal sector of the economy?
18. What are the advantages and disadvantages of informal housing?
19. From the map of the schoolyard that you created in subtopic 12.11, describe examples of the following geographic ideas:
 - (a) distribution pattern
 - (b) movement
 - (c) connection
 - (d) *change*.
20. Study the figure 1 thematic map on the following page, showing the percentage of the population that uses the internet in each of the world's countries. This map is showing a distribution pattern.
 - (a) What percentage of the population are internet users in each of the following countries?
 - Canada
 - South Sudan
 - Japan
 - France
 - Brazil
 - (b) Describe the pattern of internet use in the continent of Africa.
21. Refer to another world map that provides information about the theme of wealth. It might show GDP per capita, income per capita or the percentage of the population living on \$2 a day, for example. By looking at this map and the map in figure 1, you will be able to see if there is an association between the two sets of information.
 - (a) Choose one region and look at what is shown on both maps. Note the connection between the two sets of information.

- (b) On both maps, look at a second region in a different continent, and note the connection between the two sets of information.
- (c) On both maps, look at a third region in a different continent, and note the connection between the two sets of information.

FIGURE 1 Internet users as a percentage of the population, 2011



Source: International Telecommunications Union 2103/Spatial Vision

A table like the one below might help.

Region	Percentage of internet users	Income

- (d) What pattern is emerging? Provide examples to support your pattern.
- (e) Can you find any exceptions to your pattern? If so, provide examples.
- (f) How might internet access affect liveability in places like Dhaka, Port Moresby and where you live? Use a table like the following.

Poorer places	Aspect of liveability	Where I live
	Social	
	Economic	
	Environmental	

22. Represent the poverty cycle in a diagram. How could the cycle be broken?

TOPIC 13

Geographical inquiry: What is my place like?

13.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

13.1.1 Scenario and your task

Every person has their own idea of what their local place is like. For some people, this area can be very large; for others, it can be quite small. It really depends on where you go in your everyday life. For example, homes of relatives or friends, sports clubs, shops and parks. This means that it does not matter if your map representing your place is a different size or shape to those of friends who live in the same area. The differences simply reflect what you do and think as an individual person.

When you draw a mental map of your local place, you identify the features that you think give your neighbourhood a sense of place. All local areas have these special features that create the character or personality of the place. Many of these features can be identified on maps of the area. But there are also characteristics of your local area that you may not know about. How do you find out about these?

The Australian Bureau of Statistics (ABS) is the Commonwealth Government's organisation that has the responsibility to collect, collate and report information about Australia's people. Every five years, the ABS conducts a major survey of all Australians, as they are living on one specified day of the year. This is called



the census. The ABS then compiles this information and releases it for publication, which is when it is used by governments, businesses, companies and individuals to plan for the future.

Your task

Create a blog that presents demographic characteristics of a local place. The ABS website (www.abs.gov.au) provides a pathway for you to find out the demographic characteristics of your chosen postcode area.

13.2 Process

13.2.1 Process

- You will write your blog entries individually, but you could work in groups to share your research and create your blog.
- **Planning:** You will need to research the demographic characteristics of your chosen local place. Locate and print a map of your chosen place to accompany the data you find.

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Watch this eLesson: What is my place like? (pro-0144)

13.2.2 Collecting and recording data

- For this inquiry, use census data. Go to the ABS website (www.abs.gov.au) and select the ‘Census’ page. Using the ‘QuickStats Search’ box select the most recent census year and type your postcode or place name into the search box. This will bring a map of your local area and related data onto the screen. Choose either People, Families or Dwellings to gather information about.
- **Going further:**
 - Compare the changes to your place over time. Choose the same topic for different census years and compare the data.
 - Compare your local area with another local place in your region or city. The other place could be next to yours or a long distance away.

13.2.3 Analysing your information and data

Having collected the information about your local place, you now need to study the data and describe the patterns you have found.

1. Describe the pattern of distribution that you have produced. How does your place compare with neighbouring places?
2. What do the combinations of characteristics you have chosen tell you about the community in your postcode?
3. What does the data tell you that you did not know about the different places in the region where you live?
4. Compare and describe the changes in the data from different census years. Suggest reasons to explain these changes.
5. Visit the Resources tab and download the blog planning template to help you develop your blog. You will also see a sample blog on which you can model your own task. Use images, videos and audio files to help bring your blog to life.

13.2.4 Communicating your findings

Use an online blogging site to set up your group’s blog and then enter all of the required blog entries. Be sure to create a headline for your article and add relevant tables, graphs, images, maps and videos. Your article should emphasise the important facts, and how and why they have changed over time.

13.3 Review

13.3.1 Reflecting on your work

Think back over how well you worked with your group on the various tasks for this inquiry. Determine strengths and weaknesses and recommend changes if you were to repeat the exercise. Identify one area where you were pleased with your performance, and an area where you would like to improve. Write two sentences outlining how you might be able to do this. Submit your blog and any reflection notes.



UNIT 5

DEPTH STUDY 1: INVESTIGATING THE ANCIENT PAST

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TOPIC 14

Historical skills and concepts

14.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

14.1.1 Links with our times

Around eighteen hundred years ago men fought in bloody battles in an ancient Roman arena. Crowds bigger than those at most football matches cheered them on as each fighter slashed the other with a short sword, hoping to maim or kill him while ducking and weaving to avoid his opponent's deadly blows.



At the end of this brutal contest the victor would turn to the emperor or the crowd and await their signal — to spare his opponent or kill him.

We do not know much about these individual fights but we do know these things happened, and we know why these warriors, who were called gladiators, killed and died. We know that other people at the time found it amusing to watch such horrors and that others thought it proper to provide such entertainment. We know these things because archaeologists and historians use clues like stone fragments and many other sources to bring the past to life. History uses evidence that includes all kinds of traces, from skeletons to old books, paintings and photographs. History involves using such evidence to try to find the truth about what happened in former times.

Big questions

As you work through this topic, look for information that will help you to answer these questions:

1. What methods do historians use to investigate the past?
2. How do we use primary sources?
3. How do archaeologists investigate the past?
4. How do we date archaeological evidence?

Starter questions

1. What do you think a skeleton could tell us about the past?
2. Imagine you are investigating gladiators in ancient Rome. What are three questions you would ask about them?
3. What are three questions you would ask about the re-enactment of the founding of Rome shown in the image in section 14.1.1?
4. 'By understanding the past, we can better understand the present and prepare for the future.' What do you think this statement means? Do you agree with it? Why or why not?

INQUIRY SEQUENCE

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 Watch this eLesson: Investigating the past (eles-1057)

14.2 Examining the evidence

14.2.1 How and why do we study history?

History is a journey of discovery through time. Often it will excite you, and sometimes it will shock and amaze you. Sometimes it will seem as though the people of past societies were from another planet. At other times their actions and ideas will be as familiar to you as those of your friends and neighbours.

What is a historian?

In our own times there are many links with the past. For example, many people in modern societies attend performances of plays. This art form originated in some city-states of ancient Greece, where it was an important aspect of their culture. Research into past civilisations, cultures and societies is the work of historians. They try to build up a picture of how people in other times lived and acted. Historians try to make sense of past ideas, customs and beliefs, the ways people were ruled and how they made their living. Historians inquire into the past by examining sources. Historians also try to understand and explain how people's lives were shaped by other people and events, what they thought about their times and how they brought about changes in their own world.

In this topic we will look at the following skills and concepts:

- Sequencing chronology — arranging events in order of time
- Using historical sources as evidence — analysing sources from the time we are studying to judge how reliable they are and exploring the different points of view, or perspectives, of people from the past. This also involves questioning later sources that are interpretations of that time.

In later topics you will develop further skills:

- Identifying continuity and change — identifying when and how changes occurred and what things remained unchanged

SOURCE 1 Terracotta models of actors' masks used in plays performed in ancient Greece around 2200 years ago. The actual masks have not survived because they were made of materials such as wood, linen and leather.



- Analysing cause and effect — determining how and why important things happened and how an event or idea or something else led to changes
- Determining historical significance — evaluating the importance of an event, idea, individual or group for the lives of people at the time and for later times.

DID YOU KNOW?

The ancient Greeks invented the dramatic genres of tragedy and comedy. The remains of their theatres can be seen today at several places such as Delphi, Athens and Epidaurus.

14.2.2 The value of history

Some people question the need to understand the past. But there are many very good reasons for studying history. Knowledge of history helps us to understand our **heritage**. We start to understand where our ideas, languages, laws and many other aspects of our lives came from. We can also develop more open minds and learn to appreciate cultures that are different from our own. Conservation work similar to that shown in Source 2 is one of the key responsibilities of archaeologists.

History, the present and the future

Perhaps you already know that we can never understand the time we live in or what the future may hold if we do not understand the journey that brought us to this point. Human societies did not appear in the present as if from nowhere. They developed over many thousands of years. By understanding the past we might just be able to avoid repeating past mistakes and make our world a better place in the future.

History, work and leisure

The kinds of skills you will learn while studying history are also important in many careers. These skills will help you to:

- carry out research
- draw conclusions and make decisions based on evidence
- recognise the difference between fact and opinion
- understand that there is usually more than one way of thinking about any problem
- think critically
- communicate effectively.

A knowledge of history is important in our everyday lives too. And history gives many people great personal pleasure. How much more enjoyment do people experience from travel, books and movies when they know about the history that shaped the places they visit or the stories they read or watch on a screen!

SOURCE 2 Conservation work on the Parthenon, in Athens, a temple built in ancient Greece in the fifth century BCE



History and democracy

In Australia we live in a democratic society. This means we have the right to choose our political representatives and leaders through voting. We cannot vote responsibly, however, unless we can make our own judgements about the ideas these leaders put forward. To do that, we need to know something about the past.

14.2 Putting it all together

Using historical sources as evidence

1. The masks in Source 1 are held in the National Archaeological Museum in Athens, Greece. Each year the museum attracts millions of visitors from around the world. What might you be able to understand about ancient Greece just by using this source as evidence?
2. Look at Source 2. Each year, many countries donate money for conservation work to preserve the remains of this ancient Greek temple. Why do you think so much effort goes into conserving such traces of the past?

Identifying continuity and change

3. Today we live in a world where people are sometimes killed over differences in religion. How might a knowledge of history help bring understanding between different religions?
4. Fill in the spaces in the following passage by choosing words from the box below.

civilisations beliefs cultures events research

Historians conduct _____ into past _____, _____ and societies. Historians try to build up a picture of the ideas and _____ of people in the past, how they lived and acted and how their lives were shaped by _____.

5. What can we gain from understanding our heritage?
6. Explain what you understand to be the difference between fact and opinion. Give an example from your own experience.

Determining historical significance

7. Suggest why any one of the following possible events might have historical significance in the future for a historian researching and writing about the age we are living in.
 - (a) There was an increase in the number of Australians who did not practice religion.
 - (b) Inequality (the gap between rich and poor) increased in Australia.
 - (c) The Australian Government took in more refugees.

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Complete this digital doc: Worksheet 14.1: Why study history?

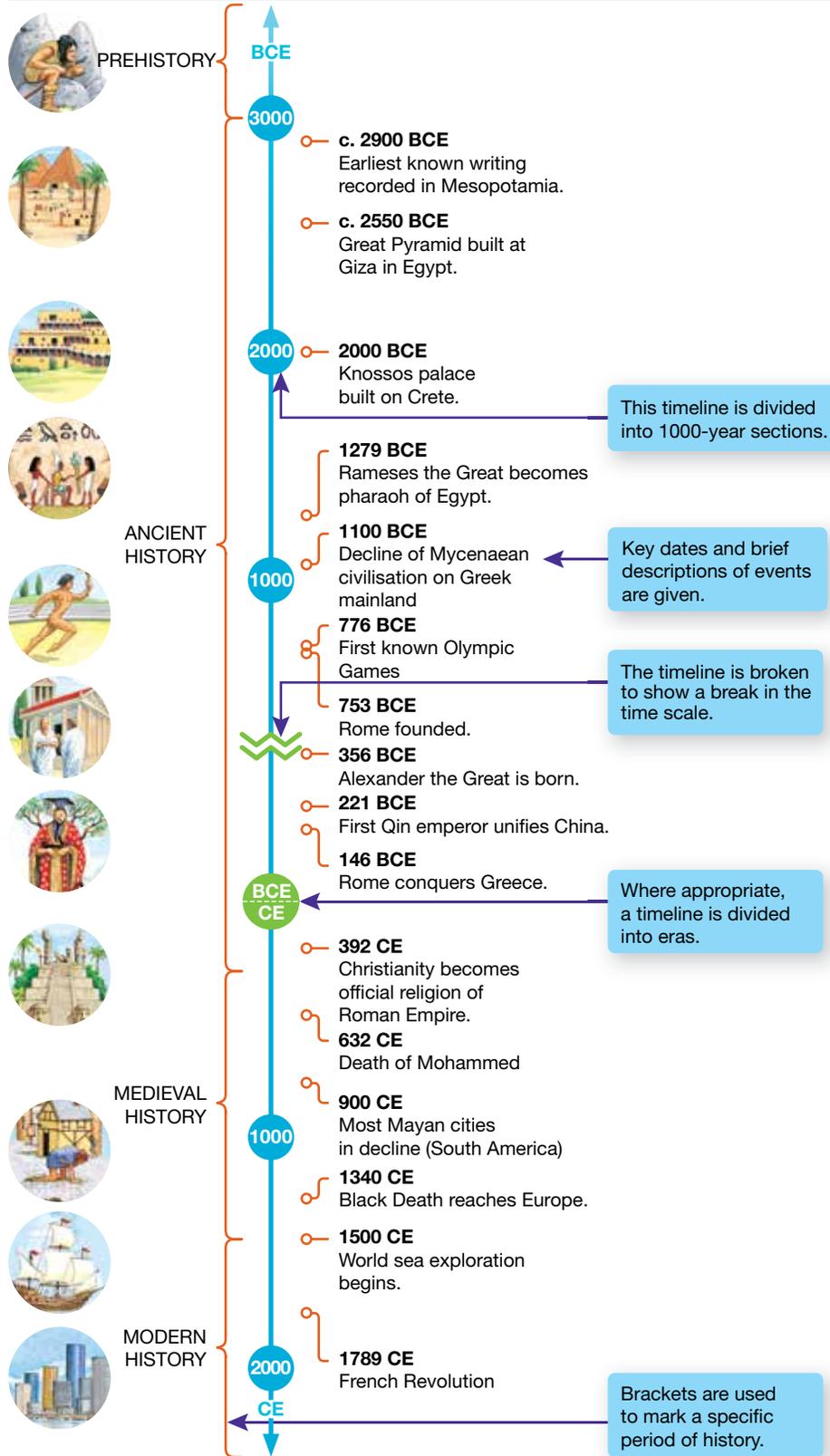
14.3 Ages, time and chronology

14.3.1 Dividing the past

At Year 7 level we will be investigating **prehistory** and **ancient history**. Because prehistory covers many tens of thousands of years, we usually describe prehistoric changes over millennia (blocks of 1000 years). Historians studying later times sometimes concentrate on particular centuries (blocks of 100 years) or even decades (blocks of 10 years).

To make sense of the past we divide it into ages or periods that have something in common. Prehistory is the prehistoric period (the time before people invented writing as a means of recording activities and events). It ended at different times in different parts of the world. For example, in China it ended thousands of years ago, while in Australia it ended a little over 200 years ago. We also use the terms Stone Age, Bronze Age and Iron Age. These refer to materials that people had learned to shape into tools and weapons in prehistoric and ancient times. Ancient history covers the time from the earliest **civilisations** around 3000 BCE to around 650 CE.

SOURCE 1 A timeline showing some events from 3000 BCE to modern times



Counting time

In Australia, the system we have traditionally used to count years is one that was first used in Christian countries in AD 525. In this system, AD stands for **anno Domini** (Latin for ‘in the year of our Lord’). The year AD 2012 means 2012 years since the birth of Christ. However, although this system is still commonly used throughout the world, many historians now use the term CE (Common Era) instead of AD. The dates are the same: 2012 CE is the same year as AD 2012. We count forward, so 50 years later the year would be AD 2062 (or 2062 CE).

BC means ‘before Christ’, and for these years we count backwards. Therefore, 500 BC would be 300 years earlier than 200 BC. Historians now commonly use the term BCE (Before Common Era) in place of BC.

BP and *circa*

In prehistory many dates are uncertain. It is common to use BP (Before the Present) to indicate about how long ago something happened. For dates BP, the year 1950 CE is agreed upon as ‘the present’. When dates are uncertain we put ‘c.’ before them because it stands for *circa* (Latin for ‘around’).

To convert years BP to years BCE, it is close enough to simply subtract the current date and round it off. For example, in the year 2000 CE, a date of 8000 BP would be (8000 minus 2000) — that is, c. 6000 BCE.

Other ways of counting time

There are other ways to count time. For example, Islamic countries start counting from the time of the flight of the prophet Mohammed from Mecca. This occurred in the year Christian countries call 622 CE.

Chronological order and timelines

A story makes more sense if we start at the beginning and work towards the end. A timeline helps us to see how one event might have contributed to another. However, there is much more to history than putting events in order.

DID YOU KNOW?

There is an easy way of getting it right with centuries. The first 100 years after the birth of Christ is called the first century CE. The first 100 years before the birth of Christ is called the first century BCE. To work out what century a date is in, you simply add one (1) to the number of hundreds in a date. So the year 2011 is in the twenty-first century CE. The year 705 BCE is in the eighth century BCE.

14.3.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What is prehistory?
2. Explain how the prehistoric period differs from ancient times.

Sequencing chronology

3. The year 2016 is in the twenty-first century CE, so work out in which century each of the following years occurs: 705 CE, 1890 CE, 315 BCE.
4. Calculate the number of years between 195 BCE and 755 CE.
5. Write the meaning of the terms: millennia, centuries, decades, ages, BC, AD, BCE, CE and BP.

14.3 Putting it all together

Sequencing chronology

1. Look closely at Source 1, the timeline. Use it to find dates for the earliest known writing and the first known Olympic Games.
2. Why do you think the date for the building of the Great Pyramid has 'c.' (for 'circa') before it?
3. Using Source 1 as a model, make a timeline of your life up to the present. On it, write the important events of your life. Use the terms AD or CE, century and decade. Then explain how your timeline helps you to present an overall picture of your life so far.

Identifying continuity and change

4. We use the terms Stone Age, Bronze Age and Iron Age to refer to ages in which people used those materials as their most advanced materials. Work in small groups to suggest an appropriate name (based on materials) for the age in which we now live.

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Complete this digital doc: Worksheet 14.2: My life so far

14.4 Detective work

14.4.1 Written sources and archaeological sources

All our evidence for the past comes from primary sources. These are sources that were created in the time we are investigating. Depending on the event and place, primary sources might include bones, stone tools, letters, newspapers, art, photographs or many other traces. For prehistory we have no written primary sources, but for most periods of history we can divide primary sources into written and archaeological sources.

Written primary sources can include such things as poems, songs, letters, myths and legends. They might have been written on paper, painted on stone walls or inscribed in stone, metal or clay in ancient languages.

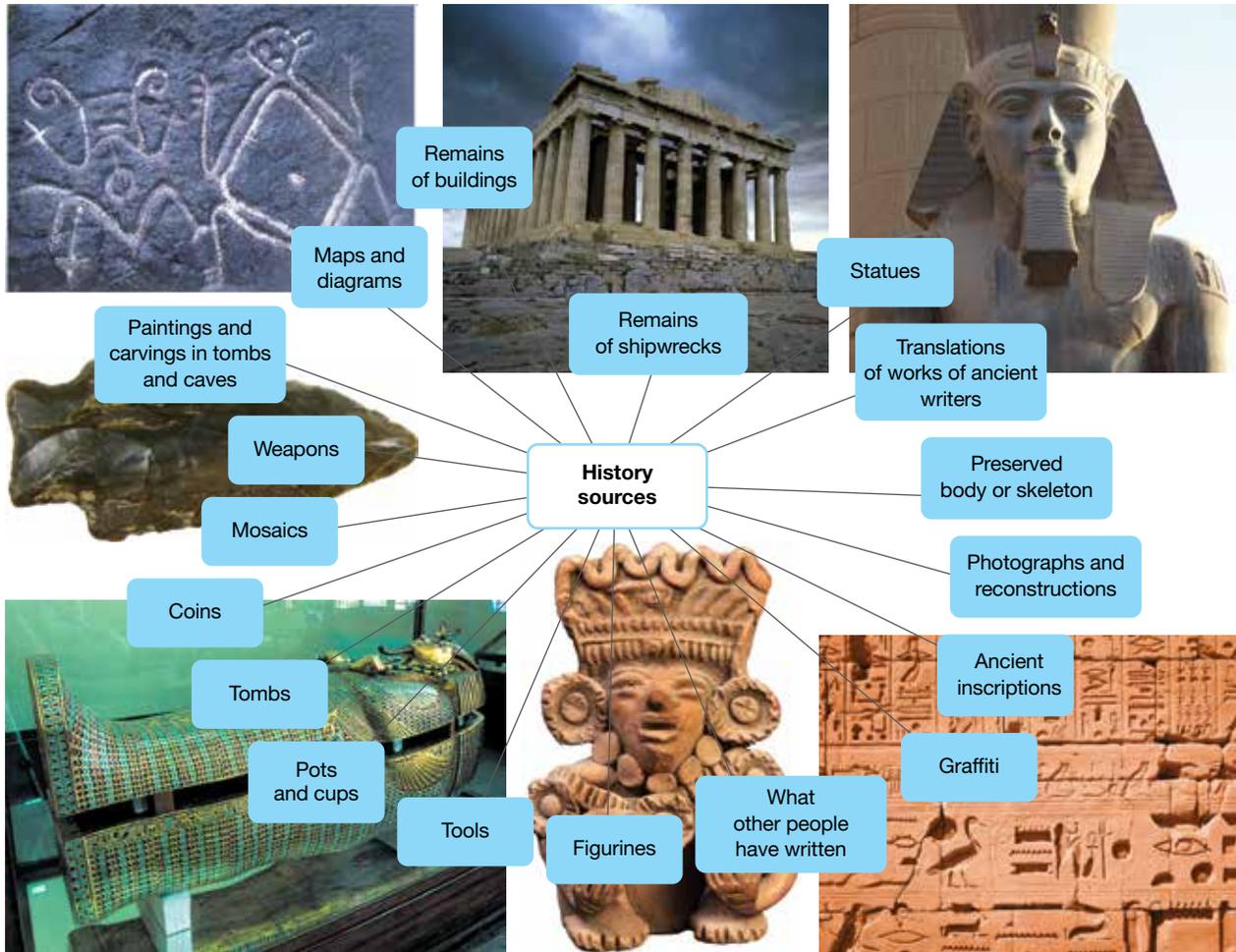
Archaeological sources are objects that were made in the past. They include many kinds of **artefacts** such as tools, weapons, pottery, coins, games, toys and jewellery. Some artefacts have written sources inscribed on them. Archaeological sources also include works of art such as sculptures and paintings, and constructions such as tombs, temples and sometimes entire cities.

Can we trust our sources?

You may think that a written primary source should be reliable evidence because it was made at or around the time events occurred. But a source may be fact or someone's opinion — that is, it could be **biased**. One way to test sources for reliability is to compare them with other sources. If this evidence leads to the same conclusion, we call it supporting evidence. If it leads to different conclusions, we have contradictory evidence. When we use primary sources to try to find out about the past, we have to ask some questions. For example:

- Who created these sources and when were they created?
- What evidence do the sources provide?
- Can I trust my sources?

SOURCE 1 Some types of primary sources



14.4.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What are primary sources?
2. Describe the difference between written primary sources and archaeological sources.

Using historical sources as evidence

3. Explain what the term 'bias' means and why we might not be able to trust a primary source.
4. Describe a way to test primary sources for reliability.
5. Look at the mind map in Source 1 and describe each of the archaeological sources pictured around the mind map.
6. Suggest what we might learn about the past from old graffiti or one of the other types of primary sources listed in the mind map.

14.4.2 Interpreting the evidence

Forming a hypothesis

Using our primary source evidence, we form a **hypothesis** (a possible theory to explain what happened). To test the hypothesis we look for other evidence that supports it. We also look for evidence that contradicts it. We need to be careful. We have to ask: what other information do I need to support my theory?

SOURCE 2 This ancient stone sculpture was made around 1000 BCE by people called Hittites in the Middle East. It depicts a storm god.



SOURCE 3 These prehistoric carvings on bone were found in France. They are about 11 000–18 000 years old.



Just as in the investigation of a modern crime, we look at what contributed to an event and how those things fit together. We ask questions that begin with who, what, where, when, how and why. In this way, history is like any other kind of investigation, but it is more difficult because there are often gaps in our evidence. We usually cannot find all the clues we need. It can be like trying to solve a jigsaw puzzle when many pieces have been lost.

Secondary sources

Secondary sources include books and articles. They can also include models, computer software and documentary films. Secondary sources are reconstructions of the past by people living at a later time. To create secondary sources, historians:

- locate information in primary sources
- interpret that information
- use it to explain what happened.

Archival research

When historians research historical periods during which written records were kept, they often find many of their primary sources in archives. These are organised collections of records. For example, historians researching the history of Christianity in medieval times might carry out their research in the Vatican Archives. These records of the Roman Catholic Church are held at its headquarters in Rome.

Contestability

Wherever historians find their primary sources and whatever methods they use to test their hypotheses and interpret the past, there will always be differing interpretations that are debated and contested. The issue of **contestability** is a very important concept in the study of history. Historical debates are ongoing. They occur when, for example, there is a lack of evidence or when different perspectives (points of view) lead to different conclusions. There are ongoing debates on many things, including the causes of particular wars and the roles of particular individuals, groups and ideas in bringing about significant changes.

SOURCE 4 Creevykeel **Megalithic** Tomb, a stone tomb built in County Sligo, Ireland, around 3000 BCE. The tomb has been excavated. The stone wall at the back is not part of the tomb.



SOURCE 5 Ancient Egyptian hieroglyphs in the Louvre Museum, Paris



An example of contestability

There have been debates around how long Indigenous peoples have lived in Australia. Most historians believe that there is evidence that the human occupation of Australia began at least 40 000 years ago and possibly even as long as 60 000 years ago. However, when evidence was found suggesting a big increase in charcoal at Lake George, near Canberra, around 100 000 years ago, one scientist used it to argue that it must have been caused by Indigenous people burning the bush at that time. Other scientists and historians concluded that the charcoal was more likely to have been caused by fires started by lightning strikes. In later subtopics, as you find other examples of contestability, you will see that there is very often more than one way to interpret the evidence from the past.

14.4.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What is a secondary source?
2. How do historians create secondary sources?
3. Complete the following sentences:
 - (a) Archives are organised _____ of _____ sources.
 - (b) A hypothesis is a _____ that has to be tested by looking for _____ that might support it and _____ that might contradict it.

Using historical sources as evidence

4. Form a hypothesis that might explain why either Source 2 or Source 3 was made and suggest what other evidence you would need to test your hypothesis.
5. Why might it be wrong to use Source 5 as evidence for a hypothesis that most ancient Egyptians could read and write?
6. Look at the tomb in Source 4. Working in small groups:
 - (a) Describe the main features of Creevykeel Megalithic Tomb.
 - (b) Make up five questions a historian could ask to guide an investigation of this tomb.

14.4 Putting it all together

Using historical sources as evidence

1. Why would it be wrong to think that primary sources are more reliable than secondary sources?
2. Make a list of some kinds of primary sources that could be used to create a history of your school (a secondary source). Beside each source in your list, write down what you think you could find out by using it as evidence.
3. Consider the issue of contestability.
 - (a) For about how long do most archaeologists and historians believe Indigenous peoples have lived in Australia?
 - (b) What evidence was used to support a theory that they had been in Australia much longer and why did other scientists and historians dismiss this interpretation?

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Complete these digital docs: Worksheet 14.3: Sorting sources, Worksheet 14.4: Analysing sources, Worksheet 14.5: Detective work and the mystery box

14.5 Evidence from archaeology

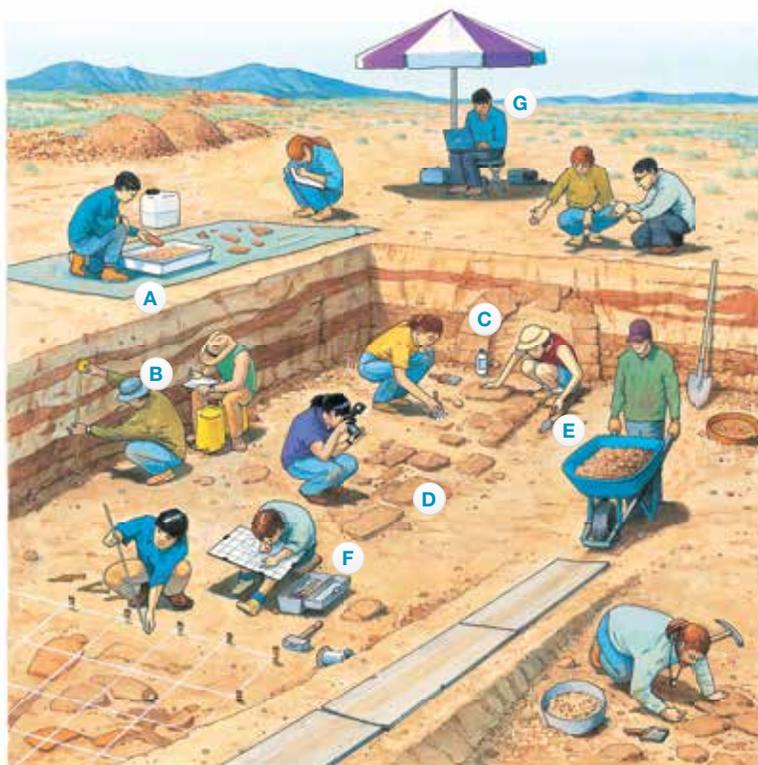
14.5.1 Digging up the past

Historians often draw on the work of other experts. Archaeologists are most important among these experts. Archaeologists examine the physical remains of the past; they collect or record and interpret them.

Sometimes we already know where to find such archaeological sources. Examples include sites such as the pyramids in Egypt and the Great Wall of China. Very often, however, archaeologists have to dig to find evidence of the past. Generally, the older the site, the deeper the dig has to be.

SOURCE 1 Activities at an archaeological dig

- A** Finds are carefully washed and labelled to record the trench and layers in which they were found.
- B** Strata revealed by the trench help archaeologists to date the various layers of the dig.
- C** Brushes and trowels are used to carefully uncover objects.
- D** Objects and sections of the site are photographed.



- E** After the site has been searched for objects, earth is removed from the trench.
- F** Positions of objects are recorded using drawing frames divided into squares.
- G** An ongoing record of progress at the dig is kept.

DID YOU KNOW?

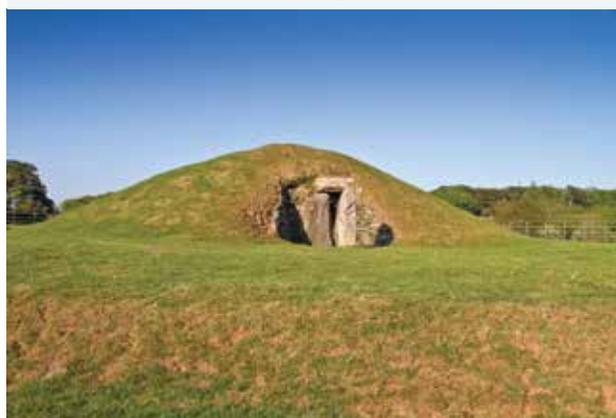
For investigations of prehistoric and ancient times, historians and archaeologists also use important information from other scientists. Anthropologists study human behaviour, especially in tribal societies. Their findings help historians to understand past societies. Their findings help historians to understand past societies. Palaeontologists study fossils (traces of humans and animals from prehistoric times). Cryptographers specialise in breaking codes. Their skills have helped us to decipher and read some ancient languages.

Deciding where to dig

The first decision archaeologists have to make is where to dig for remains of past times. Many remains are buried over time by wind-blown sands, sediments from floods or volcanic ash. Some remains are hidden but there may be clues to their whereabouts in sources such as old documents. Caves are likely places in which to look, and so are mounds of earth or other features that suggest that humans have changed the landscape (see Source 2). Sometimes ancient remains are found purely by accident.

Modern archaeologists also use a number of scientific techniques. Aerial and satellite

SOURCE 2 Mounds called barrows were made in England in prehistoric times. They were usually the burial place of a chief or king.



photography can locate patches of earth that have different temperatures or different vegetation caused by buried settlements or tombs. Sonar equipment can be used to locate relics, including sunken boats, that lie beneath seas.

Excavating remains

Once the site for an excavation, or dig, has been decided there are several steps to follow. Archaeologists have to obtain permission to dig from the government of the country in which the site is located. They then survey the site, marking it out in squares with pegs and strings. When digging commences the archaeologists must be careful not to damage remains. The remains might be close to the surface. But in sites that have been occupied for a long time there can be several layers of remains. These layers are called strata and the oldest remains will normally be in the deepest strata. As they remove earth, the archaeological team searches carefully for remains. They label each find to record the square and level in which it was found.

SOURCE 3 Remains of a ditch called a moat that was dug around a castle at Old Sarum in England in the eleventh century CE



Help from other scientists

Other scientific experts and new technologies are frequently used to help archaeologists to interpret their finds. Such experts include forensic pathologists who examine human remains to find evidence of what people ate and what might have caused their deaths. Technologies include computer programs that can analyse remains of buildings to create 3D images suggesting how they once looked.

DID YOU KNOW?

When archaeology began in the eighteenth century, some archaeologists were wealthy amateurs. They had no real training, and some of their expeditions destroyed more than they saved when they dug up ancient treasures. Among the greatest of all twentieth-century scientific archaeologists was an Australian, Vere Gordon Childe (1892–1957). He became a leader in the archaeology of prehistoric times.

14.5.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What three tasks describe the main work of archaeologists?
2. List the kinds of clues that help archaeologists to decide where to dig.
3. Name two technologies that help archaeologists to locate sites for digs.

Using historical sources as evidence

4. Write descriptions of four activities that people are performing in Source 1.
5. Examine Sources 2 and 3.
 - (a) Describe what you see in each photograph.
 - (b) Explain why it is obvious that humans did something to change the landscape shown in each photograph.
 - (c) What might an archaeologist expect to find on a dig at either of these sites?

14.5.2 Survival by chance

Only some archaeological traces of the distant past have survived. Many more have been destroyed by a range of causes. These include:

- demolition and rebuilding
- natural decay and erosion by wind, rain and floods
- theft. Almost all of the tombs of the Egyptian pharaohs were robbed of their treasures in ancient times.
- war. Many ancient towns and cities were smashed and burned in wars.

14.5.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. List two causes of destruction of archaeological traces.
2. What kinds of archaeological traces would be most likely to be lost through theft?

14.5.3 Clues from pottery

One of the most common and important sources of archaeological evidence is pottery. Pottery is made by shaping wet clay and then baking the clay so that it hardens and keeps the shape the potter has given it. Pottery has been made for about 10 000 years in much of East Asia, the Middle East and the Mediterranean region. It was used in much the same way that we use glass and plastic bottles and jars today — mainly for holding and storing food and drinks. There is a lot of evidence from pottery because people threw away their broken pots. The broken pieces are called sherds and even small pieces can help in building up a picture of the past. Archaeologists have named some prehistoric people after the style of pottery they made.

Particular pottery styles can be identified with different ages. For example, in one period a typical container made of pottery might have a long neck but no handles. In another age a typical style might have a short neck and a handle. Such differences help archaeologists to compare pottery from different sites to decide whether they are likely to belong to the same age or to a different time. Further clues are provided by decoration. Some vases, jugs, urns and bowls were engraved or painted with scenes showing the customs, work, stories and beliefs of the societies that produced them.

SOURCE 4 Painted pottery from ancient Greece, sixteenth or fifteenth century BCE



SOURCE 5 Small pottery vases found together in Rome. They are from the first century BCE. Each contains a small piece of bone from a dead person, and each has an inscription stating the person's name and date of death.



14.5.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What did people do with broken pottery in ancient times?
2. Why is pottery such an important source of evidence for archaeologists?

Using historical sources as evidence

3. Look closely at the details in Sources 4 and 5. Use these details and information in the captions to form a hypothesis about each of the civilisations that made these items.

14.5 Putting it all together

Using historical sources as evidence

1. Imagine you are one of the people in Source 1 and that the site you are excavating is thought to be the remains of a city that was destroyed in an ancient war. Describe in a diary entry your feelings about your day's work, what you might hope to find and what you might actually have found.

Identifying continuity and change

2. Working in small groups, list reasons why there would usually be more archaeological evidence from ancient times than from prehistoric times.

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Complete this digital doc: Worksheet 14.6: What happened here?

14.6 How old is it?

14.6.1 Dating techniques

Archaeologists are finding evidence of our past all the time. Before we can assess what the source of evidence tells us about past human activity, we need to know how old the source is. Being able to date evidence allows historians to place events and human behaviours in time order. It also helps to identify any links between past groups of people. Sometimes it allows experts to detect fakes.

Some dating methods will not reveal how old something is — just whether it is older or younger than something else. These methods are called **relative dating techniques**. Two of these are stratigraphy and fluorine dating.

Stratigraphy is the study of the different **strata** or layers revealed when a slice is cut down through the earth.

The longer that bones lie in the earth, the more fluorine they absorb from the soil. So the more fluorine it has, the older the bone. Fluorine testing was used to expose one of the most famous scientific frauds in history — the Piltdown Man. For 41 years the skull of this so-called creature had been accepted as firm evidence of the ‘missing link’ between ape and man. Fluorine testing conducted in 1953 found that the top section of the skull was much older than the jawbone and teeth. It was then revealed that the remains of a human skull had been carefully joined with those of a chimpanzee. It is still a mystery who set up this amazing fraud.

14.6.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What are strata?
2. Will objects found in a lower stratum be older or newer than those found in a higher stratum?
3. What is radiocarbon dating, and how can knowing the rate at which C14 breaks down help in finding out the likely age of any once-living remains?

Using historical sources as evidence

4. Look at the artefacts illustrated in Source 1. Describe the kinds of changes that must have happened in ways people lived at this site over many ages.
5. Examine Source 2 and use the internet to find out why the Shroud of Turin is still regarded by many people as something of great historical significance.

14.6.2 Tree rings tell stories about the past

What might seem like one of the strangest of all dating methods involves using tree rings and so we call it tree-ring dating. The scientific name for this method is dendrochronology. All trees have tree rings and they can help with dating old objects. But the technique only works if the objects were made of wood. The age of a tree is worked out by counting the number of rings in the wood. A new ring is formed every year in a tree's life. The width and shape of each ring depend on environmental conditions such as rainfall and soil type. All trees of the same type growing in the same area will have the same environmental conditions, so the pattern of their growth rings will be very similar.

Sometimes the age of wooden items such as spear handles and roof beams can be worked out by matching the growth rings in the wood with those in a dated sample from trees in the same area — as long as they are of the same species.

SOURCE 3 Tree growth rings



DID YOU KNOW?

In recent years, DNA evidence has become another important scientific method for discovering information that can be used by archaeologists and historians. DNA samples can tell us who people's ancestors were. Using DNA analysis, scientists have found that the ancestors of all modern humans came from Africa.

14.6.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What is another name for dendrochronology (see Source 3)?
2. How might dendrochronology help in finding out the age of wooden objects?

14.6 Putting it all together

Using historical sources as evidence

1. Design a mind map, like the one in Source 1 in section 14.4.1, to represent the technologies that help archaeologists to date the sources of evidence that they discover.

Identifying continuity and change

2. Imagine you are an archaeologist investigating a recently discovered ancient site. You have found pottery, books, wooden furniture and bones. Identify and describe the dating techniques you could use to work out the ages of each item and which of them is older than others in order to discover what changed over the centuries during which the site was occupied.

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Complete this digital doc: Worksheet 14.7: What happened when?

14.7 Perspectives and empathy

14.7.1 Understanding how they thought and felt

It is very important for historians to empathise with those they study. This means trying to understand how people thought and felt at different times in the past. At different points throughout this book you will be asked to put yourself in the situation of someone in the past. This is not a creative writing task, in which you can let your imagination run wild. Rather, you will be using historical imagination. This requires using your imagination, but basing your ideas on evidence.

We try to understand the perspectives of people in the past through exploring their points of view, attitudes and values. Often we can get a sense of the way people thought and felt through primary sources such as diaries or through visiting museums and historical sites. Using empathy, we work with all the evidence we have in order to imagine what the past was like for people who were there at the time. We need to consider such questions as:

- Who were these people?
- Where did they live?
- How did they live?
- What mattered to them?
- What did they believe in?
- What did they see, hear, taste, smell and feel?
- What did they fear and what did they hope for?
- Did they have feelings similar to or different from ours?
- Did they all think and feel the same as one another, or did they have differing **perspectives**?

How should we judge people in the past?

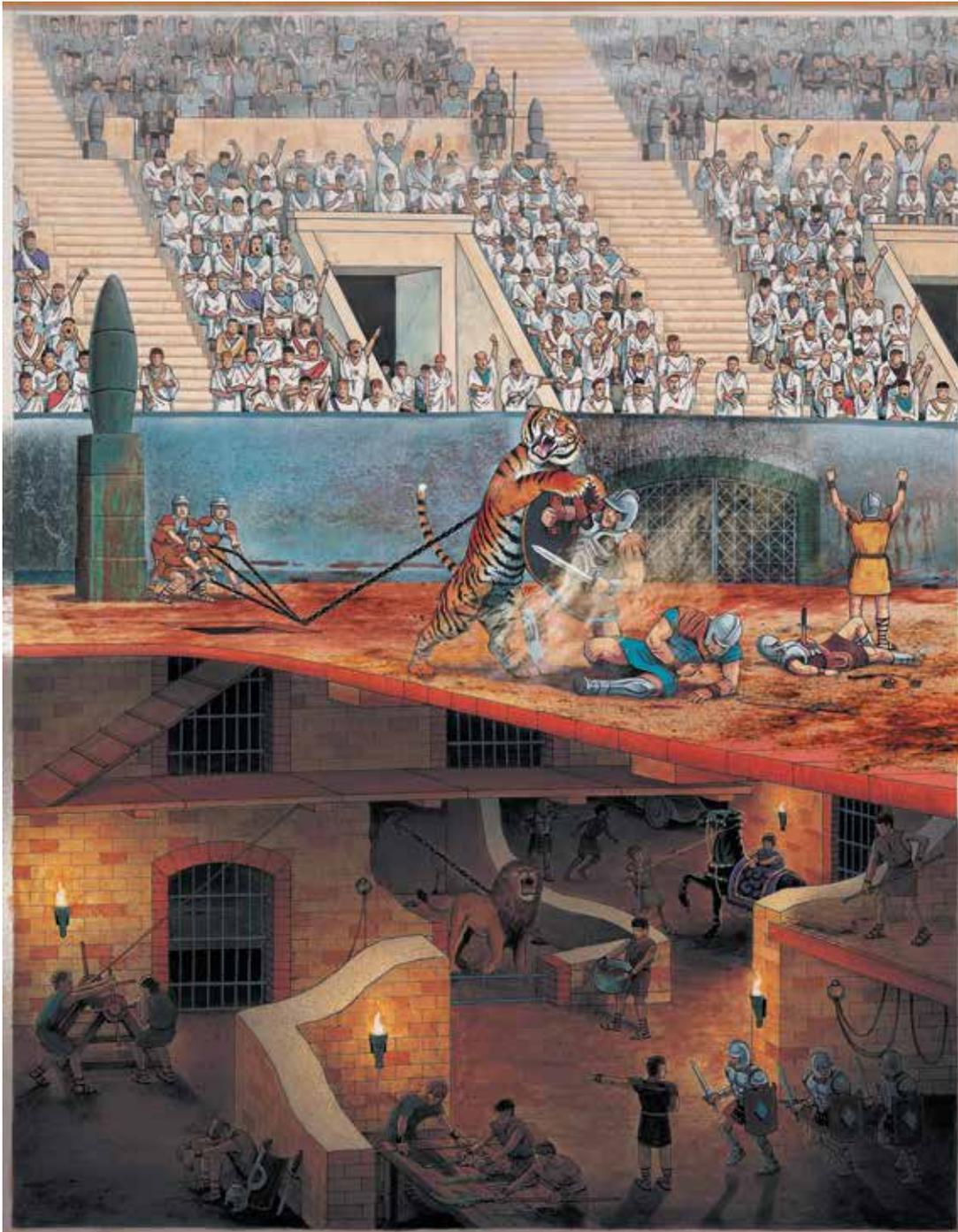
When we learn about some of the things people did in the past, it is natural that we make moral judgements. For example, we naturally see slavery and torture as cruel.

SOURCE 1 The ruins of the Colosseum in Rome



What we should try to avoid is judging people in the past by beliefs or standards that did not exist in their time. It would be wrong, for example, to judge a Roman army officer as being particularly cruel because he allowed his prisoners of war to be sold as slaves. At that time he would have been upholding the laws and attitudes of his society. However, some ancient Romans were cruel even by the standards of their own time. We should also remember that in the future, people may think that many kinds of behaviour we consider normal are, by their standards, wrong.

SOURCE 2 The Colosseum was a vast amphitheatre in ancient Rome. To entertain Roman crowds, slaves trained to be gladiators were forced to fight, often to the death, against other gladiators or against wild animals that had been tormented to make them ferocious. Most gladiators were men but at least a few were young women. This artwork shows what happened below the arena as well as what happened above ground.



14.7.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What does it mean to empathise with people you study?
2. How is empathy different from sympathy?
3. How is historical imagination different to just letting your imagination run wild?
4. Why could it be wrong to judge people from past times by the standards of our times?

Using historical sources as evidence

5. Examine Source 1.
 - (a) Discuss whether the Colosseum's bloody past is what makes it such a big tourist attraction.
 - (b) How do you think modern visitors to the Colosseum feel about its cruel past?
 - (c) How would you explain such changes in attitudes over time?

14.7 Putting it all together

Using historical sources as evidence

1. Imagine you are one of the gladiators shown in Source 2 and describe:
 - (a) what you can see, hear, taste and smell
 - (b) how you feel about what you are doing and your chances of survival
 - (c) how you feel about your opponent who, like yourself, is only doing what he is forced to do
 - (d) what you feel about the crowd that is cheering for you to kill or to be killed.
2. Imagine you are one of the soldiers guarding the arena or forcing gladiators up from the tunnels and cages below. Would you be likely to consider what you are doing immoral or would you accept it as 'the way things are'?
3. Not all ancient Romans liked watching gladiators fight, but many did. What do you think most of the crowd would be feeling?

Identifying continuity and change

4. Working in small groups, think of something that happens in our own time that some people believe is wrong. An example could be the way some countries are wealthy while in others children die of starvation and preventable diseases. Do you think that at some time in the future people might consider ours to have been an unjust age? Report back to the class and give reasons for your answer.

14.8 SkillBuilder: Sequencing events in chronological order

WHAT IS A TIMELINE?

A timeline is a diagrammatic tool for placing events in chronological order (the order in which they happened).

Go online to access:

- an explanation of the skill (Tell me)
- a step-by-step process to develop the skill, with an example (Show me)
- an activity to allow you to practise the skill (Let me do it)
- questions to test your application of the skill (Applying skills).



14.9 Review



This final subtopic provides a range of opportunities for you to review and respond through:

- (i) revising and checking your historical knowledge
- (ii) demonstrating your ability to apply historical concepts and skills.

Go online to access:

- a key chronology of events relevant to the topic
- a summary of the key knowledge presented in the topic
- a 'Big Questions' activity
- a multiple choice topic test
- short answer or extended writing responses.

learn on RESOURCES – ONLINE ONLY

 **Try out this interactivity:** Time out: Sources (int-0782)

 **Try out this interactivity:** World history timeline (int-2932)

 **Complete these digital docs:** Worksheet 14.8: Definitions and find-a-word, Worksheet 14.9: Summing up

14.8 SkillBuilder: Sequencing events in chronological order

14.8.1 Tell me

What is a timeline?

A timeline is a diagrammatic tool for placing events in *chronological order* (the order in which they happened). A simple **chronology** would be one, for example, that showed in sequence, or time order, key events of a day in your life.

Why are timelines useful?

Timelines are useful because they can help us make sense of events in the past. Timelines are particularly useful in the study of history. Creating a history timeline will help to:

- understand the order in which events occurred
- describe the time distances between events
- identify what has changed over time
- identify what has stayed the same over time
- analyse how one event might relate to other events
- compare what might have been happening in different places at the same time
- assess if one event might have led to another event (cause and effect).

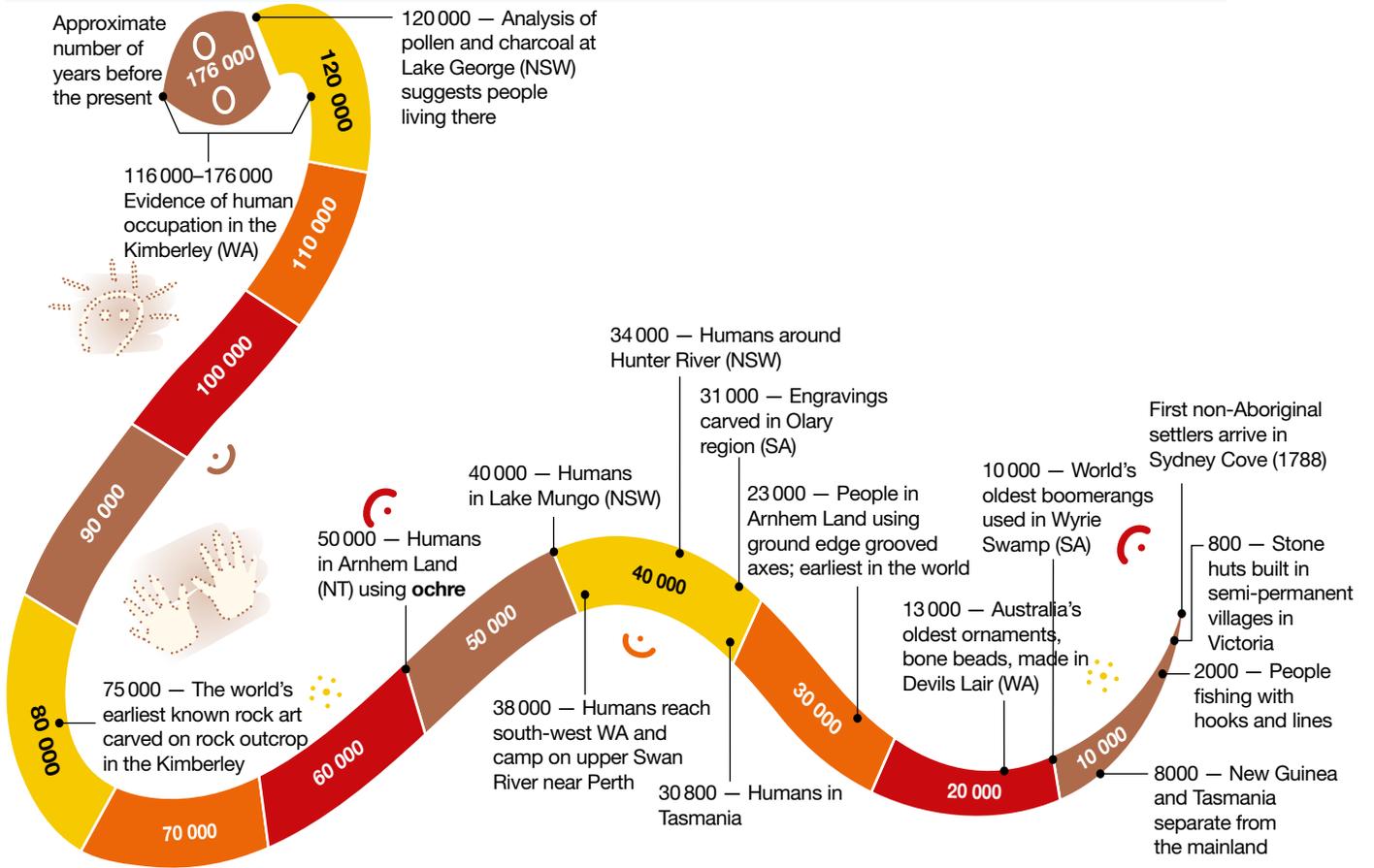
SOURCE 1 A simple chronology

DIARY AND WORK RECORD	
8 0800	
9 0900	Tennis lessons
10 1000	
11 1100	Haircut
12 1200	
1 1300	Lunch with Luke
2 1400	
3 1500	
4 1600	Homework - Geography assignment
5 1700	
6 1800	

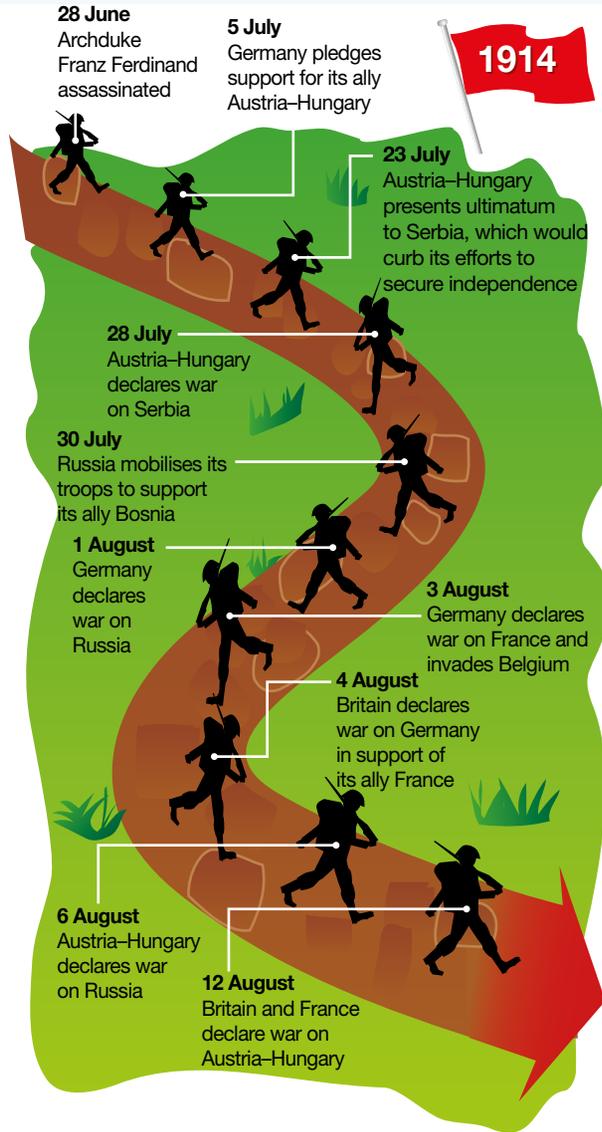
Generally, timelines are constructed using a sequence of dates with the addition of descriptive labels. The timeline may span thousands of years (see Source 2) or cover a very short period (see Source 3). In print, timelines may be as simple as a horizontal or vertical line or highly visual with use of colour and images. Using digital technology, online timelines can be interactive, where users can click on a date and see a descriptive label, an image or even hear an audio narrative or sound effects.

Sources 2, 3, 4, 5 and 6 show some examples of highly visual timelines that could be presented in printed history text books.

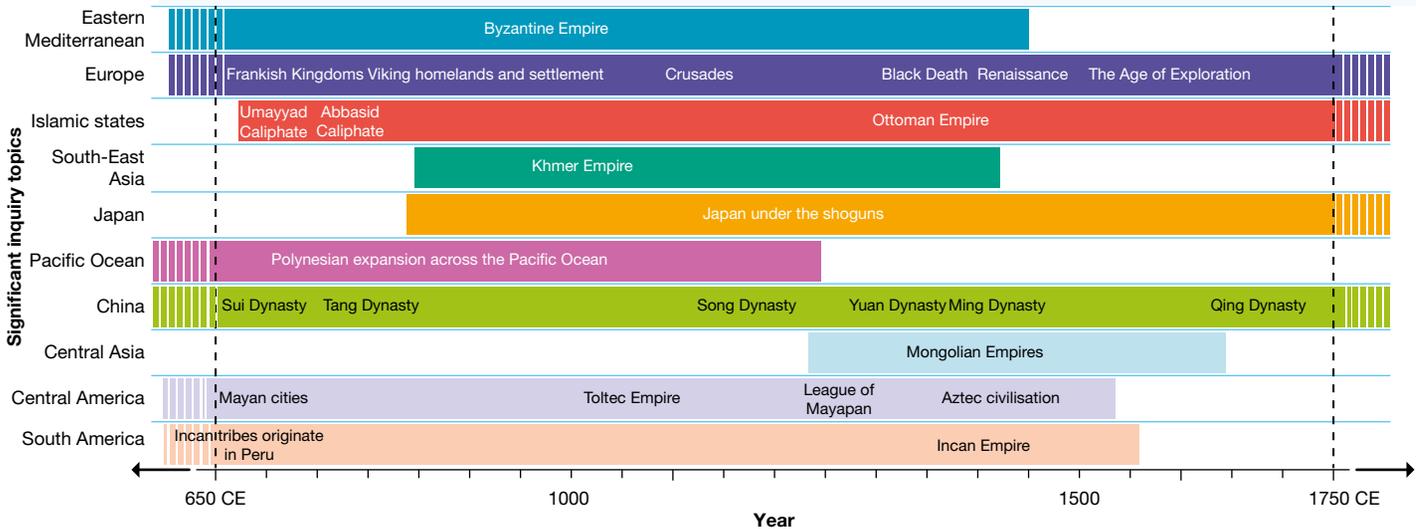
SOURCE 2 An example of a timeline that covers a long span of time



SOURCE 3 An example of a timeline that covers a short span of time



SOURCE 4 An example of a horizontal timeline that uses coloured bars to compare significant events in different places at the same point in time

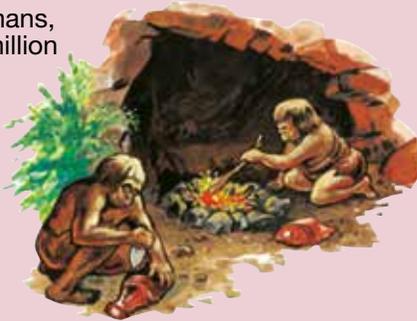


SOURCE 5 An extract from a timeline that provides some illustrative material to accompany descriptive text labels

PREHISTORY (Before 3000 BC)

IDEAS AND INVENTIONS

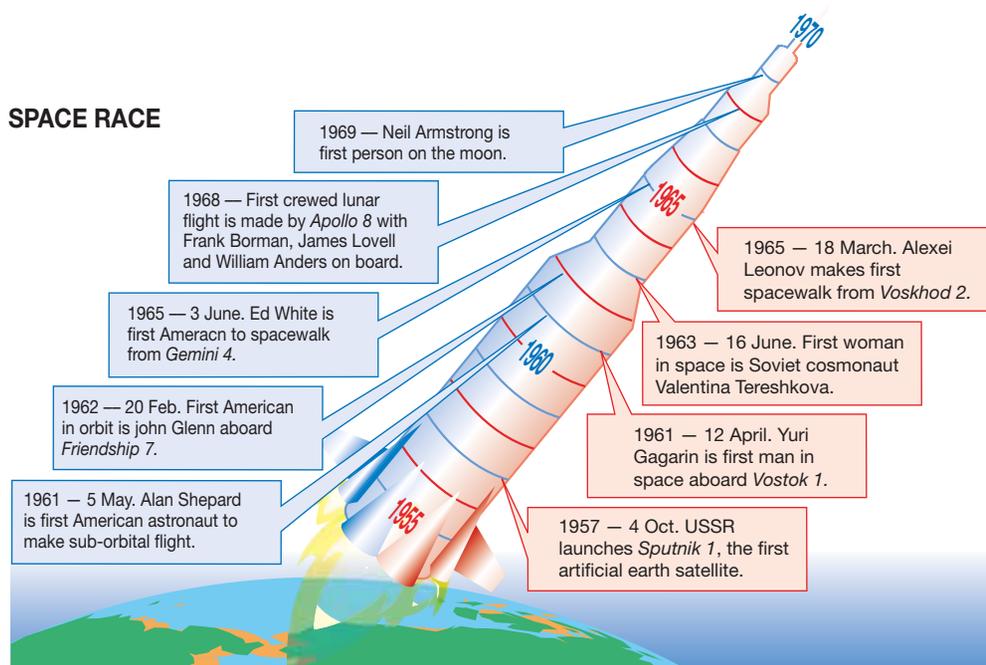
1 000 000 BC Fire was one of the first tools used by ancestors of modern humans, perhaps as early as 1.4 million years ago.



BC

1 000 000 40 000 35 000 30 000 25 000 20 000 15 000 10 000 5000

SOURCE 6 An example of a timeline that uses a drawing of an object related to the subject or theme of the timeline



14.8.2 Show me

How to create a timeline

Timelines can cover very short or very long periods of time.

- They can focus on just a few months or years.
- They can focus on big, sweeping changes over thousands of years.
- In most cases, they are divided up into equal blocks of time, such as decades or centuries. This is not essential but it helps us to see not only the order of events but how close or how far apart they were.

- A break in the timeline (using a zig zag line, for instance) can show a long span of time between one date and the next.
- To make equal blocks of time you need to use a scale — for example, 1 centimetre = 10 years.
- Timelines can be horizontal (across the page) with the earliest dates on the left and later dates to the right.
- Alternatively they can be vertical (down the page), in which case the dates usually run from the earliest at the top to the latest at the bottom.
- Often we have only approximate dates for events in ancient history. In those cases, we put ‘c.’ in front of the date. It stands for the Latin word *circa*, which is Latin for ‘around’ or ‘about’.

STEP 1

Study the example on the right. Look at the way this timeline has been constructed.

- It is a vertical timeline.
- It has been divided into centuries.
- A scale of 1 centimetre = 1 century has been used.

STEP 2

Make sure your completed timeline has a clear title. The title should state:

- the time period covered
- the subject or theme
- the beginning and end dates.

14.8.3 Let me do it

Construct a timeline

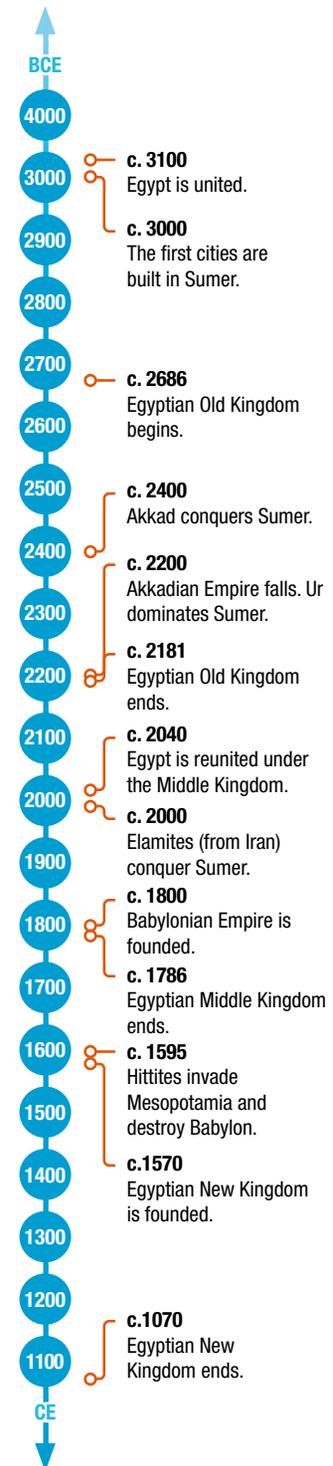
Construct a timeline of the rise and fall of civilisations in east and south Asia between 2500 BCE and 200 BCE.

- Use a vertical timeline.
- Divide it into centuries.
- Decide on the scale you will use.

Key events for your timeline

- c. 2500 BCE Cities are built by the Indus Valley Civilisation.
- c. 2100 BCE According to Chinese legends, the Xia dynasty begins ruling China.
- c. 1600 BCE The Shang dynasty is established in China. The Indus Valley cities are abandoned and India is invaded by Aryans.
- c. 1100 BCE Iron begins to be used in India.
- c. 1045 BCE The Zhou overthrow the Shang and start the Zhou dynasty.
- c. 770 BCE The Eastern Zhou dynasty begins in China.
- c. 500 BCE Iron begins to be used in China.
- 475 BCE The Warring States period begins in China, starting centuries of conflict.
- 327 BCE India is invaded by Alexander the Great (of Macedonia and Greece).

Timeline of the rise and fall of kingdoms and empires in Egypt and Mesopotamia between 3000 BCE and 1000 BCE



304 BCE	India is united under the Mauryan Empire.
221 BCE	China is united under the Qin dynasty.
206 BCE	The Qin dynasty is overthrown in a peasant revolt. The Han dynasty begins.

Your timeline will help you to analyse and compare events. For example, you could use it to answer questions such as:

- Which of these two cultures was the first to build cities?
- Which was the first to use iron?

14.8 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Using chronology

1. Based on the timeline you have drawn:
 - (a) What time span does your timeline cover (i.e. how many years in total are covered by your timeline)?
 - (b) Which Chinese dynasty shown on your timeline was the earliest?
 - (c) How many years elapsed between the establishment of the Shang and Qin dynasties?
 - (d) Did the Indian or Chinese civilisation use iron first? What period of time separated the introduction of the use of iron in the two civilisations?
2. Identify three significant events during the period of time illustrated on the timeline for:
 - (a) China
 - (b) India.
3. What statement could you make about the length of Chinese dynasties over the period shown on your timeline?
4. What event of significance for ancient Indian civilisation occurred during the period of the Shang dynasty in China?
5. What might have been a consequence for Indian civilisation of the invasion of Alexander the Great? (*Hint:* Look for an event that happened relatively shortly after his invasion.)

14.9 Review

In this topic you have been introduced to important skills that you need to begin your study of history at Year 7 level.

14.9.1 Review

Key knowledge: summary

14.2 Examining the evidence

- Historians investigate and interpret the past.
- History helps us to understand our heritage and appreciate other cultures.
- History helps us to understand the present and what the future may hold.
- History provides us with essential skills.

14.3 Ages, time and chronology

- Historians divide the past into ages and periods.
- In Australia we count time using a system that was developed in Christian countries, but there are other systems.
- Using chronological order and timelines helps us to recognise cause and effect.

14.4 Detective work

- There are several different kinds of sources we can use.
- Sources need to be tested for reliability.
- To begin an investigation we form a hypothesis.

14.5 Evidence from archaeology

- Archaeologists use several techniques to find remains of the past.
- The skills of other scientists contribute to discoveries in archaeology.
- Pottery is an important source of archaeological evidence.
- Some archaeological remains survive while others are destroyed.

14.6 How old is it?

- Relative dating techniques help us determine if a source is older or newer than another source.
- We can find the age of many sources using absolute dating techniques.

14.7 Perspectives and empathy

- Historians try to discover how people thought and felt at different times in the past.
- Using historical imagination requires using your imagination but basing your ideas on evidence.
- We should avoid judging people from the past by the standards of our own age.

Key knowledge: multiple-choice topic test

1. The year 500 BCE would be the same as which of the following years?
 - (a) AD 500
 - (b) 500 BP
 - (c) 500 BC
 - (d) 500 CE
2. Chronological order means which of the following?
 - (a) A timeline
 - (b) In order from the beginning to the end
 - (c) Any random order
 - (d) From the end to the beginning

3. The work of historians is like that of detectives because historians:
 - (a) solve crimes.
 - (b) are always right.
 - (c) never make mistakes.
 - (d) gather evidence from sources and interpret that evidence.
4. Primary sources are:
 - (a) sources that were created around the time we are studying.
 - (b) written sources.
 - (c) secondary sources.
 - (d) books.
5. Which of the following statements is accurate?
 - (a) Primary sources are always reliable because they were created in the past.
 - (b) Primary sources can never be trusted.
 - (c) Primary sources need to be compared with other primary sources for reliability.
 - (d) Primary sources hold the answer to every puzzle.
6. Sources that lead to the same conclusion provide which kind of evidence?
 - (a) Contradictory evidence
 - (b) Supporting evidence
 - (c) Absolute proof
 - (d) Biased evidence
7. A hypothesis is which of the following?
 - (a) A conclusion based on evidence
 - (b) A wild guess
 - (c) A theory that has to be tested against evidence
 - (d) An educated guess
8. Which of the following best describes archaeological sources?
 - (a) Artefacts, works of art and constructions from the past
 - (b) Old documents
 - (c) Anything found underground
 - (d) Old buildings
9. Pottery is very useful as archaeological evidence because:
 - (a) there is a lot of it.
 - (b) it was sold in pottery shops.
 - (c) particular pottery styles can be identified with different ages.
 - (d) it was the same in all ancient societies.
10. Scientific methods of dating remains from the past include which of the following?
 - (a) Palm reading and horoscopes
 - (b) Seeing how old they look
 - (c) Chemistry and geology
 - (d) Radiocarbon dating and stratigraphy
11. In an archaeological dig, older objects will generally be found where in relation to newer objects?
 - (a) At the same level
 - (b) Lower
 - (c) Higher
 - (d) In any position
12. Empathising with people in past time means which of the following?
 - (a) Trying to understand how they thought and felt
 - (b) Sympathising with them

- (c) Approving of their beliefs
- (d) Judging their behaviour

14.9.2 Respond

Using historical sources as evidence

Imagine a team of archaeologists has unearthed the sculptures you can see in Source 1. After months of careful digging they have come upon this remarkable find — eight pieces of sculpted stone. They are dirty and worn and obviously very old.

1. What clues and techniques might the archaeologists have used to locate the site at which they found these sculptures?
2. What would they have had to do before beginning to dig?
3. These sculptures are made of stone, but if they were found alongside pottery how would that help archaeologists to work out how long ago they were created?
4. If they were found in a layer that contained charcoal, what dating technique could be used to discover how old they are?
5. As a historian, you want to use this find as evidence for an investigation of the ancient society that made them. Using the skills you have learned in this topic, try to answer the following questions:
 - (a) Describe what is depicted on each of the stones.
 - (b) Which of these scenes provides evidence about conflict?
 - (c) Which of these scenes provides evidence about other aspects of life in this ancient society, and what aspects are they?
 - (d) Form a hypothesis about this society based on the evidence in these sculptures. For example, you could begin with: ‘This appears to have been a warlike society because the sculptures show ...’
 - (e) Why is it impossible for these sculptures to give us a complete picture of this ancient society?
 - (f) What other kinds of evidence might help fill some of the gaps in our knowledge of these people?

SOURCE 1 Ancient relief sculptures (created by chiselling the face of a piece of stone) found in Syria, in the Middle East



Responding to the big questions

At the beginning of this topic several big questions were posed. Use the knowledge and understanding you have gained through your study of the subtopics to answer them:

1. What methods do historians use to investigate the past?
2. How do we use primary sources?
3. How do archaeologists investigate the past?
4. How do we date archaeological evidence?

learn on RESOURCES — ONLINE ONLY

 **Try out this interactivity:** Time out: Sources (int-0782)

 **Try out this interactivity:** World history timeline (int-2932)

 **Complete these digital docs:** Worksheet 14.8: Definitions and find-a-word, Worksheet 14.9: Summing up

TOPIC 15

Ancient Australia

15.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

15.1.1 Links with our times

The history, culture, beliefs and rituals of Aboriginal and Torres Strait Islander peoples stretch back to distant time. Scientists estimate that the story of Aboriginal Australia began between 60 000 and 120 000 years ago. This is a story of the world's longest continuous culture.

The epic history of Aboriginal and Torres Strait Islander peoples lies carved into the rock faces and beneath the soils of this ancient land. The remains of tens of thousands of years of human occupation provide modern Australia with a connection to the past. At archaeological sites such as those at Lake Mungo in New South Wales and Badu Island in the Torres Strait, evidence is revealed of the life and culture of ancient communities. Archaeologists have discovered sites of human occupation on the Australian continent from at least 60 000 years ago and evidence of human activity in the Torres Strait dating to 4000 years ago.

Through the ages, the relationship between the Aboriginal and Torres Strait Islander peoples and their land survived and continues today in stories, songs, dancing and art. Today, archaeologists conduct their research in partnership with local communities, drawing on the knowledge held by the traditional custodians of the land.



Big questions

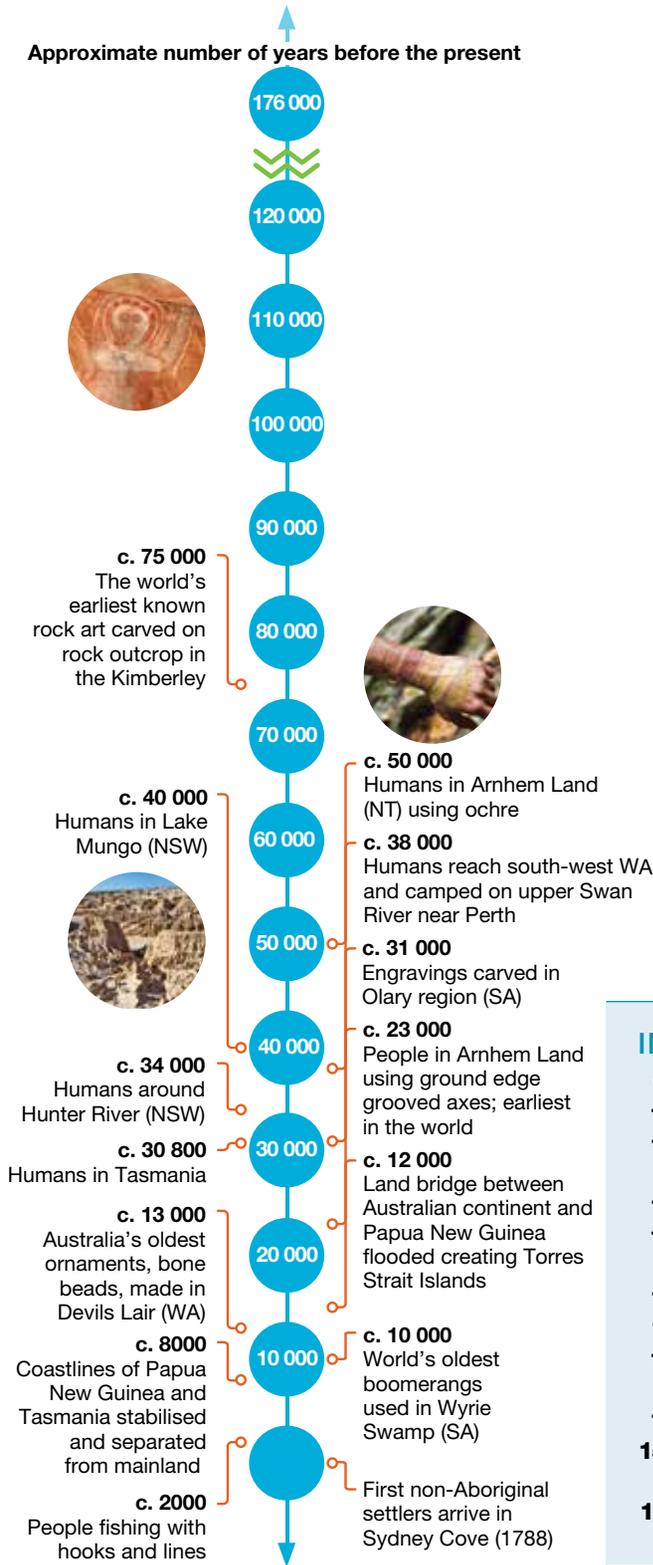
As you work through this topic, look for information that will help you to answer these questions:

1. Who were the people of ancient Australia?
2. How did Australia's geography shape ancient Aboriginal and Torres Strait Islander communities and their culture?
3. What evidence exists about Australia's ancient past?
4. Why is conservation of Australia's ancient past important?
5. Why is the history of Aboriginal and Torres Strait Islander peoples important to modern-day Australia?

Starter questions

1. When did the human occupation of Australia begin?
2. How do you think people from pre-literate (without reading and writing) societies recorded their history and beliefs?
3. Suggest ways in which archaeologists today could work with the traditional custodians of the land.

Timeline of ancient Australian life and events



INQUIRY SEQUENCE

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- Watch this eLesson: Ancient Australia (eles-2617)
- Complete this digital doc: Worksheet 15.1: Ancient Australia timeline

15.2 Examining the evidence

15.2.1 How do we know about ancient Australia?

The history and beliefs of ancient Australia were not written onto clay tablets or scrolls of papyrus. Modern archaeologists often begin their study of the life and culture of ancient Aboriginal and Torres Strait Islander communities by talking and consulting with the traditional owners of the land.

From oral tradition and archaeology

Our ancient past was remembered through the spoken word. This oral history was passed down through the generations. As such, the archaeological record of our ancient past is incomplete. Archaeologists gather their evidence from ancient occupation sites such as camps, **quarries**, **shell middens** and fish traps, burial areas, ceremonial and sacred sites. Archaeologists interpret layers of **sediment**, charcoal, clay and sand. Sites such as Lake Mungo in the Willandra Lakes region of western New South Wales are studied and interpreted not only by archaeologists, but also **geologists**, **palaeontologists** and **anthropologists**.

SOURCE 1 Newspaper account of archaeological excavations at Barrow Island, Western Australia

Boodie Cave on Barrow Island is yielding an ancient secret of global significance: resourceful, well-fed humans were living in its limestone chambers more than 50 000 years ago, several thousand years earlier than archaeologists had estimated.

The startling evidence has been unearthed in surgically excavated pits on Barrow, Western Australia's second largest island, 50km off the Pilbara coast.

Thousands of tiny artefacts lie in sediment dated to 50 000 years old ...

There are even older dates of 53 000 years from grains mixed in with fragments of a shellfish meal.

...

"People talked about it, and dates of 47 000 for Aboriginal occupation have been well accepted, but there was no hard data before.

...

Barrow Island was once part of the original coastal plain of northwest Australia, now drowned.

For three years, teams from UWA, the University of Queensland, James Cook University and Sacramento University have dug pits in the cave floor, unearthing evidence that early Australians lived off marine and terrestrial life along the limestone ridges until sea levels rose and Barrow became an island 7500 years ago.

And they dined well in a stunningly productive landscape, Veth says.

"You take off the sterile soil surface and ... in layers below are (the remains of) turtle, oyster, crocodile, porpoise, sea urchin and freshwater mussel. It's like a seafood basket, only 50 times richer. There are also the bones of marsupial carnivores and kangaroos — these people were eating better than we do."

Several traditional owners also helped, such as Eden Bobby from the Kuruma Marthudunera Aboriginal Corporation. "It was a privilege to see first-hand how archaeologists use scientific techniques to understand how the old people of this land lived tens of thousands of years ago," he said.

Most intriguing are material clues to a resourceful people who harvested food and traded items over possibly hundreds of kilometres. "Heating stones" were nestled among ancient turtle remains, large quartzite pebbles carried back from inland gorges to act as cooking agents.

Baler shells show signs of being shaped into spoons or incised with mysterious markings.

...

"One of the big questions of Australian archeology is 'When did Aboriginal people get here?'

"To jump over that 50 000-year mark, with the reliable results of Peter and his team, will attract a lot of international interest in this find."

So when exactly did the First Australians make landfall?

"That's the big question," McNiven says. "We're now able to say it's at least 50–53 000 years ago. It's getting earlier and earlier all the time."

Lore and museums

'Caring for country' is a very important responsibility taken on by many Indigenous Australian communities. To Aboriginal people 'country' refers to the traditional land to which a person belongs, or the land of their **Dreaming**. In caring for their country the traditional owners of the land share knowledge and pass on the **lore**.

Non-indigenous people and government institutions, like museums, also have a very important role to play in protecting and conserving the heritage, culture and artefacts of ancient Australia. Museums are the places where the stories of many people, places and times can be told. The National Museum of Australia preserves and displays collections of **artefacts** that represent our history from ancient to modern times.

Artefacts become wonderful sources of information when they are given a background. Aboriginal and Torres Strait Islander art and objects come to life when they are interpreted by people who have traditional knowledge and understanding. Connecting the oral traditions with the museum objects helps us to see the images and hear the voices of ancient Australia. What survived from the ancient past can then give us a glimpse of the world as it was for the first Australians.

SOURCE 2 Denise Lovett of the Gunditjmarra people (western Victoria) explaining the importance of connecting artefacts, such as the emu-feather skirt made by her ancestors, with the object's cultural background

I look at the feathers that the women would have collected, made and danced with. I wonder what song they were singing while they danced. Rightfully, this should have been handed down to someone's daughter and the story handed down too. It's sad that we don't have the whole meaning of them, that they are just objects.

DID YOU KNOW?

Stone tools are the longest lasting objects that archaeologists find because organic substances such as plants and animals perish after only a few hundred years. Nature sometimes preserves objects such as the wooden boomerangs that survived in the water-logged peat bog of South Australia's Wylie Swamp for over 10 000 years and the 20 000-year-old bone tools at Devil's Lair in Western Australia.

SOURCE 3 An emu-feather dance skirt, made and worn by Wendy Berick of the Dja Dja Wurrung people (Melbourne, Victoria)



15.2 Putting it all together

Check your understanding

1. What is an artefact? Give an example.
2. Why do modern archaeologists talk to today's traditional owners of the land?

Using historical sources as evidence

3. Suggest why the sources we have from archaeology may not give a complete picture of life in ancient Australia.
4. Why is the evidence found at Boodle Cave in Source 1 described as 'startling'?
5. What were some of the 'material remains' that were found at Barrow Island (Source 1)?
6. What assumptions could you make about resources used by people in ancient Australia from an examination of Source 3?

Determining historical significance

7. 'Artefacts from ancient Australia can only reveal their true meaning if their cultural background is also considered.' Explain what you understand by this statement. Sources 2 and 3 may help you to do this.
8. Consider the ways we can learn about ancient Australia as presented in this subtopic. Rank them from most useful to least useful as a way of learning about ancient Australia's past. Justify your ranking.

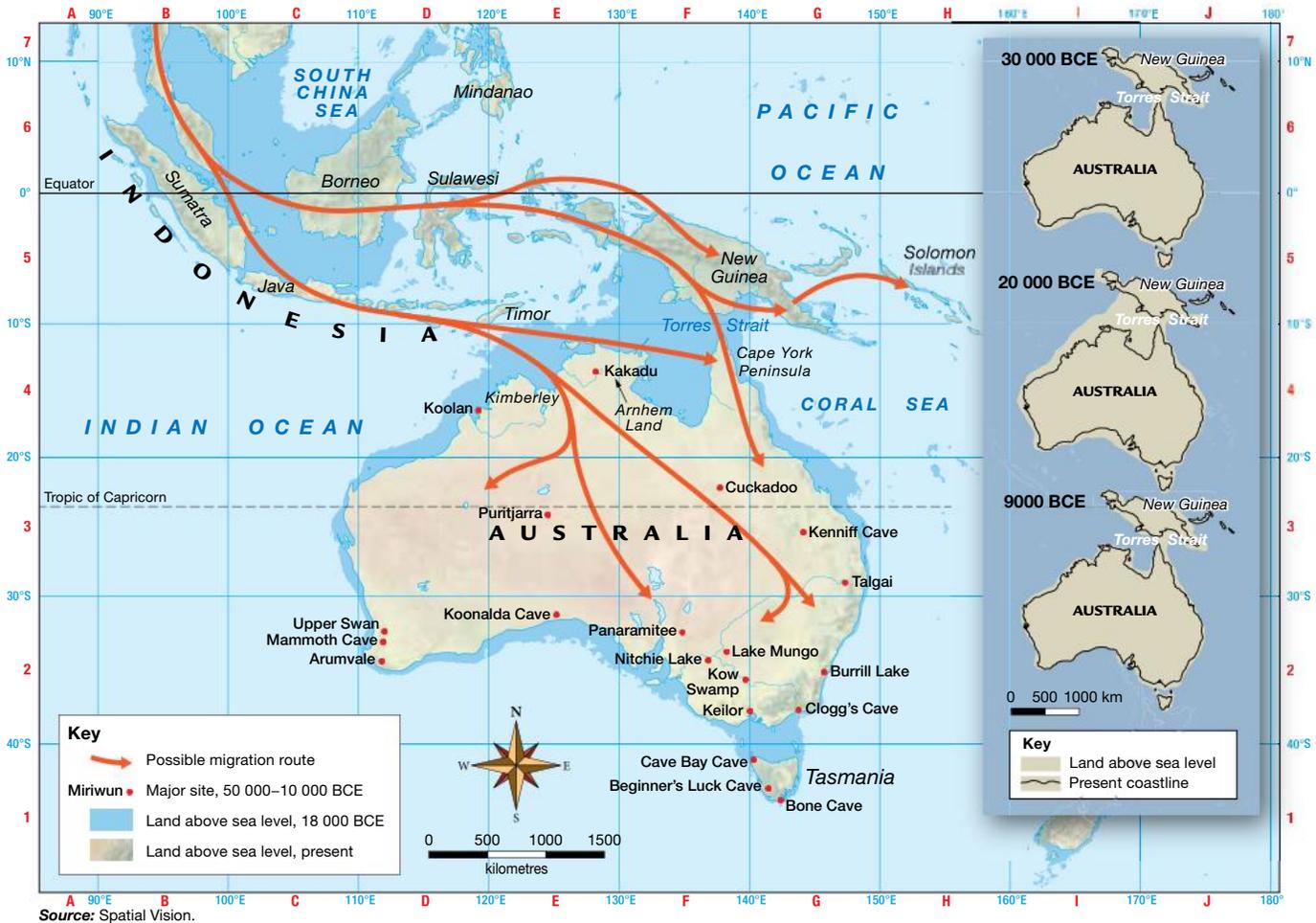
15.3 The first people of Australia and the Torres Strait Islands

15.3.1 The peopling of an ancient continent

For the last two million years the Earth's climate has gone through periods of change. During the **Ice Ages** the level of the ocean dropped up to 150 metres below the present level. From 80 000 to 10 000 years ago the sea levels remained so low that Papua New Guinea, the Torres Strait Islands and Tasmania were linked to the Australian mainland.

Scientists generally believe that the first Australians made the journey from South-East Asia sometime during a long Ice Age period. It would have been possible to walk much of the way and still stay in sight of land when crossing the water. It is thought that the ocean levels were at their lowest approximately 55 000 years ago. Later, as the climate became wetter and warmer the sea levels rose and the land bridge between mainland Australia and Papua New Guinea flooded and formed the Torres Strait.

SOURCE 1 Possible migration routes of the forebears of Australia's Indigenous peoples. The lowest sea levels in the last 120 000 years occurred about 20 000, 70 000 and 90 000 **BP (Before the Present)**. Sea levels were lower then because large amounts of water were locked up as ice at the Earth's poles.



Aboriginal peoples

Archaeologists do not agree on the length of time people have lived on the Australian continent. The beginning of human occupation of Australia is generally agreed to date back to the *Pleistocene Period*, a vast

period in time lasting from approximately 2.5 million years ago until 10 500 BP. During this period there were great changes in climate and sea levels. The natural environment and landscape were constantly being reshaped.

In the early 1960s it was commonly believed that Aboriginal people had inhabited Australia for only 9000 years. By 1980, **radiocarbon dating** had pushed the dates for settlement of our continent back a further 30 000 years. Scientists and archaeologists continue to debate the topic as new evidence and research technology develops. The remains of tools found in Victoria support a date of occupation in that region as far back as 70 000 years ago.

It is possible that the Aboriginal settlement of Australia occurred over many generations and that the first Australians travelled along different routes. Scientists continue to debate and question the theories of Aboriginal arrival and occupation of our continent. There are currently three main theories:

1. Joseph Birdsell, an American anthropologist, suggested that small groups of people settled the inland areas of Australia first and then spread rapidly across the continent as their population increased. Birdsell's *fast-track model* estimated that within 3000 years the settlement would have extended all the way to the eastern and southern coasts.
2. Sandra Bowdler, an Australian archaeologist, believes the first Australians were a seafaring people who selected coastal areas for their first settlement communities. Bowdler's theory has the spread of the population moving gradually from the coast and along the river systems to avoid the harsh deserts. Central Australia would have been the last place of occupation.
3. David Horton, an Australian biologist and archaeologist, points to the adaptable and varied nature of traditional Aboriginal communities to suggest that a wide variety of coastal, river and woodland environments would have been the starting place for groups of early settlers who progressively spread across the continent.

DID YOU KNOW?

It is believed that Aboriginal Australians crossed the land bridge that connected Tasmania to the mainland more than 30 000 years ago. When sea levels rose and covered the land bridge to form Bass Strait, these early Australians remained isolated in Tasmania.

Torres Strait Islander peoples

The rising sea levels at the end of the last Ice Age created Australia's modern coastline and the islands of the Torres Strait. The Torres Strait Islands are located to the north of the Australian mainland where the Coral and Arafura Seas meet. The islands of the Torres Strait vary greatly in landscape and were mainly formed from the remains of:

- the isolated tops of a range of **plateau** land extending from Cape York, the northern tip of the Australian continent, to the low hills of the southern coast of Papua New Guinea. These are the rocky islands because they are the remains of the former land bridge and are an extension of Australia's Great Dividing Range

SOURCE 2 The Torres Strait contains 247 islands and hundreds of cays, reefs and sandbanks. This image shows part of the Murray Islands in the Torres Strait: Waier Island (foreground) with Murray Island in the background. The Murray Islands are the vents of volcanoes that were flooded by rising sea levels 8000 to 10 000 years ago after the last Ice Age.



- the extinct volcanoes of Mer, Erub and Ugar located on the eastern side of the Torres Strait and the northern end of the Great Barrier Reef. These islands supported large gardens because of the rich volcanic soil
- coral reefs in the central area. These are mostly **cays** with poor quality sandy soil and little water
- **mangrove** mud flats in the top-west. These were formed by **silt** deposits from the large rivers of Papua New Guinea and are rich in wildlife.

Land bridges would have been a migration route and possible place of settlement for early peoples during the Ice Age. The earliest archaeological evidence of permanent settlement of the Torres Strait Islands dates to 4000 years ago. Earlier evidence has been destroyed by powerful tides created by rising sea levels. However, by 2500 years ago a robust seafaring culture was well established on many of the islands.

The people of the Torres Strait Islands are the second group of Indigenous Australians, and are not Aboriginal people who live on the islands of the Strait. According to Torres Strait Island legend, the settlers of the eastern islands had come from the Fly River region of Papua New Guinea. Islanders believe that the people of the western and central region had their origin in the rivers and coasts of Papua New Guinea's southern region. The Torres Strait Islander people generally share the features of **Melanesian** culture with the people of Papua New Guinea. Scientists believe that the first inhabitants of Papua New Guinea and the Torres Strait came from Wallacea (modern Indonesia) approximately 70 000 years ago.

15.3.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. State whether each of the following statements is true or false.
 - (a) Archaeologists agree on the exact time Australia was occupied by humans.
 - (b) Scientists believe that the Torres Strait was formed when sea levels rose and the land bridge between mainland Australia and Papua New Guinea was flooded.
 - (c) Evidence for human occupation of Victoria can be dated back to over 90 000 years ago.
 - (d) Archaeologist Sandra Bowdler believes central Australia would have been the last area of the continent to be occupied by Aboriginal Australians.
 - (e) Australia was once connected to Papua New Guinea by a land bridge.
2. Briefly describe the various landscapes of the Torres Strait Islands.

Using historical sources as evidence

3. Using the map in Source 1 and the information in the text, describe how the Ice Age changed Australia and from where archaeologists believe the migration of ancient people to Australia came.
4. How do you think the location and geography of the Torres Strait Islands would have influenced occupation of this area by early humans?

15.3.2 Explaining creation – the Dreaming

As human occupation of the Australian continent proceeded, hundreds of different spiritual beliefs and cultural traditions as well as hundreds of different languages developed. However, despite these regional differences, Aboriginal communities did share a common belief in a time known as *the Dreaming*. The Dreaming explained creation and the nature of the world, the place that every person had in that world and the importance of ritual and tradition. The Dreaming also taught people about their country and where water, food and shelter would be found.

The Dreaming was handed from one generation to the next through stories, music, dance and art. It told of the time that the **ancestral beings** moved across the continent creating and moulding the land and its rivers, lakes, mountains and all living creatures. As the ancestral beings travelled across the landscape they left a trail that could be understood as mountains, waterholes, plant formations and other features of the geography. This trail marked out the traditional land and boundaries of each tribal group. The landforms provided ancient people with their evidence of the Dreaming. After the ancestral beings had finished

creating the world they were transformed into trees, rocks, rivers and all the natural features of country. These became the sacred places of Aboriginal culture.

SOURCE 3 From Regina McKenzie, *Towards a New Dreaming*

Dreaming gives us our history, our origin, where we started from. They are not made up stories, they are factual events from long ago. Our people have made them into stories so that they are easier for children to understand.

The Dreaming established the laws and the nature of the relationships between different groups of Aboriginal people. The links between people were built upon their connections to the land and to the Dreaming. Aboriginal tradition taught people that the place of their birth and their **clan** established the country they belonged to.

The belief in the Dreaming cannot be accurately translated into English because there is no equivalent set of beliefs in non-Indigenous society. Many Aboriginal words describe the idea of the Dreaming, according to the language group a person belongs to:

- *Ungud* — the Ngarinyin people of the Kimberley region in Western Australia
- *Kulbul* — the Yaraldi people of the lower Murray region of South Australia
- *Wongar* — the Yolngu people of northeast Arnhem Land

Some Aboriginal people claim the origin of their ancient ancestors in Australia, at a time when humans formed with the landscape. Their Dreaming beliefs provide stories of an Aboriginal presence on the continent since the beginning of time. This Dreaming belief explains the origin of all life in Australia and denies theories of the arrival of people from South-East Asia to Australia during a previous Ice Age.

SOURCE 4 Sacred Wandjina rock art painted on the wall at Bachsten Creek in West Kimberley. The Wandjina are ancestral beings of the Kimberley region and the bringers of rain, who made and controlled the weather and fertility.



SOURCE 5 The Torres Strait Islander people also have their Dreaming stories. Tagai, a warrior and fisherman, was the creator being who shaped their world. To seafaring people the stars gave them their navigation for journeys across the ocean. In a range of stories, Tagai is responsible for creating the star patterns in the night sky.

Tagai was a great fisherman. One day he and his crew of 12 were fishing from their outrigger canoe. They were unable to catch any fish, so Tagai left the canoe and went onto the nearby reef to look for fish there.

As the day grew hotter and hotter, the waiting crew of Zugubals (beings who took on human form when they visited Earth) grew impatient and frustrated. Their thirst grew, but the only drinking water in the canoe belonged to Tagai. Their patience ran out and they drank Tagai's water.

When Tagai returned, he was furious that the Zugubals had consumed all of his water for the voyage. In his rage he killed all 12 of his crew. He returned them to the sky and placed them in two groups: six men in Usal (the Pleiades star cluster) and the other six Utimal (Orion). He told his crew to stay in the northern sky and to keep away from him.

Tagai can be seen in the southern skies, standing in a canoe in the Milky Way. His left hand is the Southern Cross holding a spear. His right hand is a group of stars in the constellation Corvus holding a fruit called Eugina. He is standing on his canoe, formed by the stars of Scorpius.

15.3.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Fill in the blank spaces.
The _____ is a _____ system that is shared by Aboriginal peoples. It describes a time when _____ beings moved across the continent creating the features of the _____ and all living _____.
2. How was the Dreaming handed down to successive generations of Aboriginal peoples?
3. Explain why the belief in the Dreaming cannot be accurately translated into English.
4. Why are the stars so important to Torres Strait Islander people?

Using historical sources as evidence

5. Read Source 3.
 - (a) Why was the Dreaming made into stories?
 - (b) How does the Dreaming connect people with nature?
6. Source 4 shows a representation of a creator god for many Aboriginal communities. Describe how the ancient artist portrayed this ancestral being and why it would have been important for ancient peoples to express their stories through their art.
7. Write a brief recount of the Dreaming story in Source 5 and explain what such stories could teach a listener.

15.3 Putting it all together

Using historical sources as evidence

1. What evidence do scientists examine in developing their theories on the human settlement of Australia?
2. Suggest reasons why archaeologists have developed different theories explaining how Aboriginal people occupied the continent.

Analysing cause and effect

3. (a) List all the dates and events mentioned in this subtopic in chronological order from earliest to latest and draw a timeline.
(b) Are there any events you can say led i) directly and ii) indirectly to another? Why is this task difficult?

Identifying continuity and change

4. Write a short paragraph explaining why the acknowledgment of the Dreaming as a set of creation beliefs is important in modern Australia.

Determining historical significance

5. Does it matter that experts cannot agree on when early humans arrived in Australia? Explain your answer.

15.4 Managing an ancient land

15.4.1 The influence of the environment on ancient Aboriginal communities

The landscape and climate of ancient Australia was constantly changing. Aboriginal and Torres Strait Islander communities had to develop many methods of hunting and managing their challenging natural environment. Indigenous Australian communities are widely recognised as having gained an enormous

practical knowledge of land and resource management. In traditional communities food was harvested very efficiently, leaving time for the development of cultural activities. The movement of camps was done according to the community understanding of patterns of climate, marine and insect life, plant growth and the habits of wild animals.

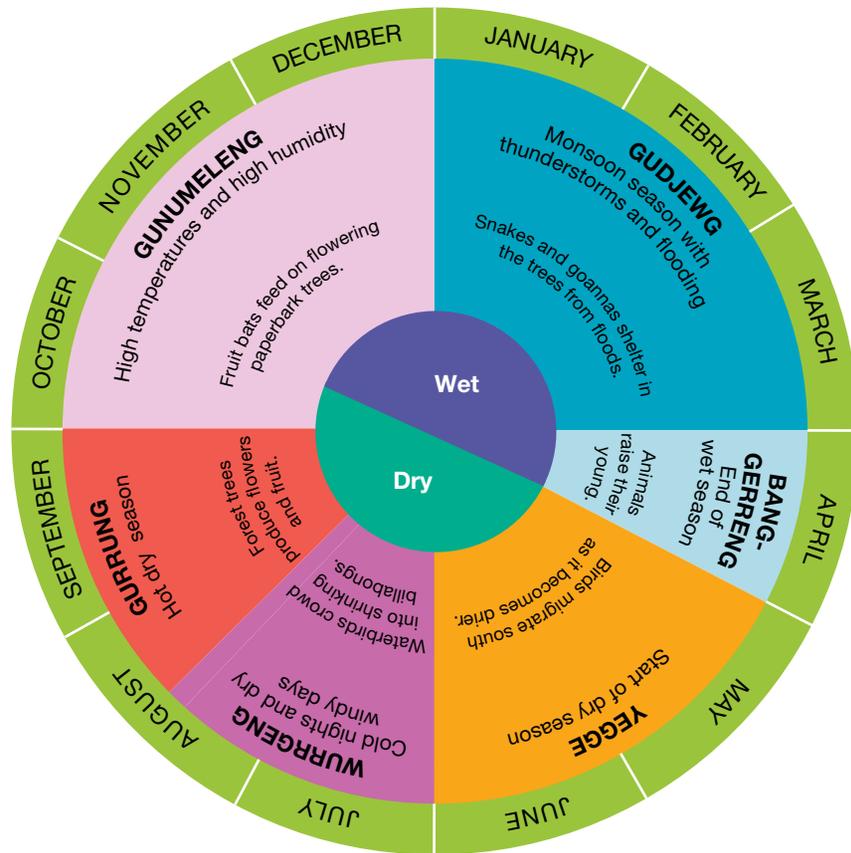
Firestick farming

Fire was central to Aboriginal life and eventually shaped much of the Australian landscape. Fire was a powerful tool that was a part of nearly every activity of daily life. Source 2 shows the uses of fire.

Carrying a firestick appeared to be an ancient custom. Setting fire to the bush and the grasslands is a practice known as firestick farming. Aboriginal people would often carry firesticks or bundles of smouldering banksia branches to set fire to the dry leaves and grass and to burn ground vegetation.

These small scale fires were lit during the cooler seasons when the weather conditions could ensure the fires did not burn out of control. Firebreaks were also put in place to contain fire.

SOURCE 1 Aboriginal communities in the Kakadu area of today's Northern Territory identified six seasons based on the changes in plants, animals and the environment. These are shown below in a modern-day representation.



SOURCE 2 Uses of fire in ancient Aboriginal culture

- | | | | |
|--|--|---|---|
| 1. Cooking food and catching animals by flushing them from burrows and driving them into traps | 2. Repelling insects and removing snakes from long grass surrounding campsites | 3. Manufacturing tools such as spears and stripping bark from trees in the process of making canoes | 4. Sending messages by smoke over long distances and clearing the ground through recognised travel pathways |
| 5. Cleaning wounds and scarring the skin for initiation and ritual | 6. Scaring off evil spirits and burning the bodies of the dead in regions where this was the funeral tradition | 7. Lighting the night for community gatherings and providing warmth for sleeping | 8. Regularly burning the forest undergrowth to prevent large scale bush fires |



Aboriginal people knew that they could use fire to manage their land and to produce the foods they wanted. Fire changed patterns of plant growth and animal life across the many different landscapes of the continent. The grasslands were burnt to promote regrowth of lush new grass. This was done with the permission of the traditional owners during the season when the grass was dry and of little nutritional value. Thousands of years of burning increased the size of the open grasslands. This encouraged the populations of a variety of the grass-eating animals, such as the kangaroo. Fire increased the availability of food for people who hunted and **foraged**. Bush potatoes and other edible seeds and ground plants flourished in the more open environment left by small-scale fires. Scientists believe that small animals, like the bilby, were threatened with extinction when Aboriginal firestick farming was no longer being regularly practised.

SOURCE 3 Joseph Lycett, the early nineteenth century convict artist, painted images of Aboriginal life as it would have been in pre-European times. Lycett's paintings show fire being used as a tool to catch animals and create grasslands. Early European explorers often noted open country with scattered trees that looked like well-tended parkland. Firestick farming created the landscape that Europeans found in 1788.



15.4.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why did Aboriginal and Torres Strait Islander peoples have to develop so many methods of hunting and managing the land?
2. How many seasons are shown in Source 1? List them and show beside each the corresponding months of our calendar.
3. Explain how fire increased food supplies for Aboriginal communities.

Using historical sources as evidence

4. Use the information from the text and Source 3 to answer the following questions.
 - (a) How important was firestick farming to the Aboriginal way of life?
 - (b) What was the impact on the environment of firestick farming?
 - (c) What do you think were the consequences for the environment when firestick farming stopped?
 - (d) How reliable do you think Source 3 is in providing historians with evidence of ancient Aboriginal land-management practices? Give reasons for your answer.

15.4.2 Managing the land in the Torres Strait Islands

Archaeologists have found evidence of farming in Papua New Guinea dating back 9000 years. The people living in the fertile highland regions farmed the fertile soils of their tropical forests. These ancient farmers also used fire as a tool when **slashing and burning** to clear the land. The people moved each year to new parts of the forest to plant their crops. The soils of their gardens were left **fallow** for a decade before the people returned to plant again. In forest areas with poor soil the gardens were left fallow for up to 25 years. Farming was combined with a hunting and foraging way of life.

Farming practices

Farming was also practised in the Torres Strait Islands during ancient times. Crops and farming knowledge spread from the southern coast of Papua New Guinea to the people of the Torres Strait. The most common crop grown in modern times is the sweet potato, a food that came originally from Peru and was transported across the Pacific Ocean with the European exploration of the 1600s. Ancient Torres Strait communities cultivated a variety of crops, according to the particular geographic conditions of the island:

- People on the islands to the north-west, located close to the coast of Papua New Guinea, relied most heavily on agriculture for their food supplies. The people grew **taro** as their main crop; they also established gardens growing bananas away from the tidal swamps on the surrounding uninhabited islands.
- People on the islands to the north-east, where the volcanic soil was moist and fertile, grew coconuts, taro, bananas and a variety of smaller fruits and vegetables.
- People on the islands on the west and closest to the Australian mainland, such as Muralag Island, only farmed on a small scale. Taro was grown as an addition to food supplies that were mainly drawn from the sea. The soils and climate of the rockier islands were not as well-suited to agriculture and so people continued to depend on a hunting and foraging lifestyle.

SOURCE 4 A nineteenth century painting of village life at Erub (Darnley) Island in the Torres Strait. Erub Island is located within the eastern region of the Torres Strait. Its rich volcanic soil supported the farming of taro, bananas and a range of vegetables. At the time of painting, the island supported approximately seven villages and 400 permanent residents.



Fishing practices

While the different island groups of the Torres Strait had different landscapes and ocean conditions they all developed a seafaring culture. Even those who depended on their farming took to the sea for food and resources. Fishing was central to the Torres Strait way of life. The shallow waters, complex tropical reef systems and huge beds of **seagrass** created a great marine **ecosystem**.

SOURCE 5 Fishing practices such as those described would have been practised by early Torres Strait Islander people, from *Reports of the Cambridge Anthropological Expedition to Torres Straits* by A. C. Haddon, W. H. R. Rivers, 1912

At low tide men, women, and children may be seen searching the reef for shell-fish and fish which have become imprisoned in rock-pools, but as a rule this simple collecting is done more by the women and children. Although serious fishing is more particularly men's work the women also take a part, but definite fishing expeditions and the quest of dugong and turtle are confined to the men. Practically the fishing of the women is limited to that which they can undertake on the fringing reef of their home island.

Islanders constructed a wide range of tools for fishing such as harpoons and spears, hooks and lines, fish scoops and nets. They built stone walled fish traps and harvested over 450 different species of marine life. Islanders developed techniques of drying and preserving turtle and dugong flesh so that it could be kept for later eating and trading. **Dugong** and turtle were very important to the Torres Strait diet and the subject of Islander myth and legend. Archaeological excavations on the tiny Central Torres Strait Island of Koey Ngurtai uncovered a burial ground of carefully arranged dugong jaws, ribs, skulls and ear bones.

Archaeologists suggest the site is of a ritual burial and linked to a Torres Strait Islander belief in the power of the sea and the magic associated with the hunting of the dugong.

DID YOU KNOW?

Aboriginal Australians on the mainland also fished, although it is believed that Tasmanian Aboriginal people stopped fishing about 3500 years ago in favour of collecting abundant supplies of shellfish. While harpoons were favoured by Torres Strait Islander people, spears were more common on the mainland. Some of the spears were made using human hair and some with a barb from a stingray.

15.4.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

- Put the following sentences into correct order and then use this as a short explanation of the importance of farming and hunting to ancient Torres Strait Islander people.
 - Archaeological excavations on the island of Koey Ngurtai uncovered evidence of the ritual burial of a dugong suggesting the islanders' strong spiritual connection with the sea.
 - The particular geographic conditions of each group of islands influenced how and what people farmed.
 - Torres Strait Islander people cultivated a wide range of crops such as taro, bananas and coconuts.
 - Torres Strait myths and legends provide further evidence of the importance of the sea.
 - Farming knowledge spread from Papua New Guinea to the islands of the Torres Strait.
 - Despite the different landscapes all the islanders took to the sea for food and resources.
 - Evidence of this can be seen in the wide range of tools for fishing such as harpoons and spears, hook and lines, fish scoops and nets.

Using historical sources as evidence

- Source 4 was painted by the English artist, Harden Melville. He was appointed the artist on board the HMS *Fly* and travelled extensively throughout the broader Pacific Island communities during the nineteenth century. Analyse the painting for the clues it gives you to life on the Torres Strait Islands. Describe the impression of lifestyle and the importance of the sea communicated by the artist in the painting.

15.4 Putting it all together

Using historical sources as evidence

- How do the sources in this subtopic support the view that Aboriginal peoples lived in harmony with the land?
- Imagine that you have accompanied one of the early nineteenth century explorers on their voyages across the continent and through the islands of the Torres Strait. Refer to the sources and text, and write a series of diary entries detailing some of the land management practices you have witnessed.

Analysing cause and effect

- Consider the geography and climate of ancient Australia and suggest reasons why Aboriginal communities remained small and why the family unit was of such importance.

Determining historical significance

- Management of land and natural resources was very important to all ancient Australian peoples. Explain how significant the natural environment was in shaping the beliefs and daily life of Aboriginal and Torres Strait Islander peoples.

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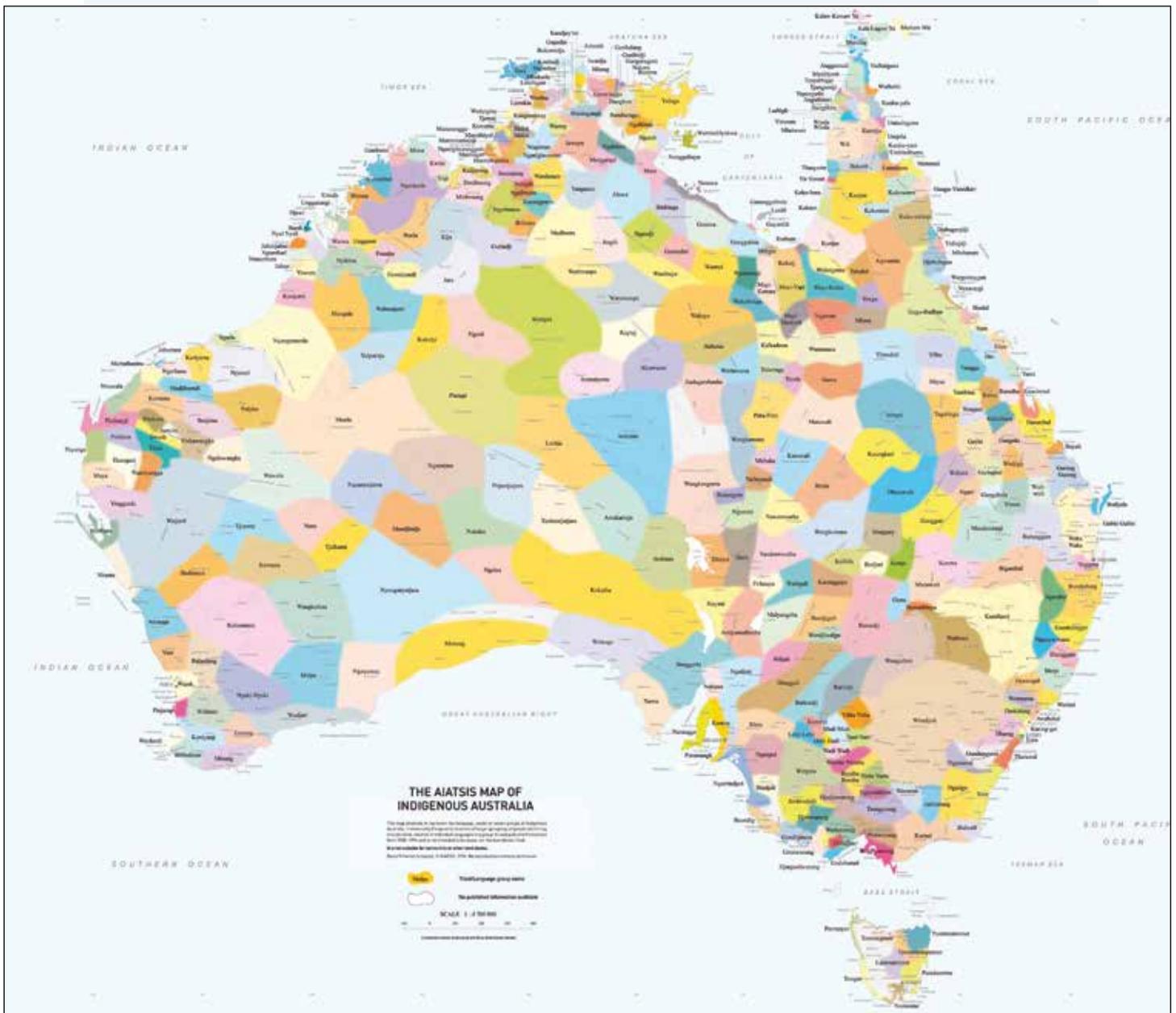
 Complete this digital doc: Worksheet 15.2: Using the land

15.5 Language and ceremony in ancient Australia

15.5.1 Aboriginal and Torres Strait Islander languages

As modern Australians, we are a multicultural people, as were the people of ancient Australia. The exact number of Aboriginal languages spoken when the Europeans arrived in Australia is unknown but it is estimated that there were approximately 250 separate language groups, with hundreds of additional **dialects** of

SOURCE 1 Map depicting the language and social groups of Aboriginal Australia. Each separate group identified on the map may also contain within it smaller clan and dialect groups.



Source: This map attempts to represent the language, social or nation groups of Aboriginal Australia. It shows only the general locations of larger groupings of people which may include clans, dialects or individual languages in a group. It used published resources from 1988–1994 and is not intended to be exact, nor the boundaries fixed. It is not suitable for native title or other land claims. David R Horton (creator), © Aboriginal Studies Press, AIATSIS, 1996. No reproduction without permission. To purchase a print version visit: www.aiatsis.ashop.com.au/

the main language groups. The spread of human settlement across Australia took generations; with so much time passing completely new languages had the opportunity to evolve. Ancient Australian communities developed varied cultural features and different languages because of the vastly different natural environments people lived in and the distances between them.

During the thousands of years of Aboriginal occupation of Australia the climate and conditions changed dramatically. Changes in climate would have affected water supply and where food could be hunted and collected. The rising Ice Age seas would have drowned many ancient communities and forced the first Australians to constantly adapt to the challenges of this shifting landscape. These different language groups could come into conflict with each other through population growth and competition for scarce resources.

Like Aboriginal peoples, the Torres Strait Islander people did not consider themselves a single unified group. Each group had their own language and traditions. There are two main languages spoken today:

- Meriam Mir in the eastern islands, which has two dialects and is related to the Papuan language called *Kiwai*. This language is spoken around the Fly River region of Papua New Guinea.
- Kala Lagaw Ya in the central and western islands, which has four dialects and is still widely spoken by Papuans and some Aboriginal communities.

DID YOU KNOW?

A smoking ceremony can only be led by an Indigenous Australian with particular cultural knowledge. Smoking ceremonies are a physical and spiritual cleansing of the space where the ceremony is held. Various native plants are collected and used to produce the smoke for the ceremony. The smoldering of the leaves, bark and fungi of native plants is also a sign of respect for people and country.

15.5.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. State whether each of the following statements is true or false.
 - (a) There were at least 250 Aboriginal languages spoken in Australia at the time of European settlement.
 - (b) During the thousands of years of Aboriginal occupation of Australia there was little change in the climate.
 - (c) Torres Strait Islander people all speak the same language.
 - (d) The languages of the Torres Strait Islands show connections with both Aboriginal and Papua New Guinean peoples.
 - (e) Ancient Australia was multicultural.

Using historical sources as evidence

2. Source 1 shows very clear boundaries between the different language and social groups. Suggest reasons why the tribal areas were larger in the desert regions and smaller in the well-watered country.
3. If a person was to travel from modern-day Melbourne, in the land of the Woiwurrung people, how many language and social groups would the traveller pass through before arriving in modern-day Sydney, in the land of the Eora people? What conclusion could you make from your answer?

15.5.2 The role of ceremony in ancient Aboriginal and Torres Strait Islander cultures

Ceremonies are very important to Aboriginal and Torres Strait Islander societies. Ceremony and ritual keep the knowledge of the Aboriginal Dreaming and Torres Strait Islander beliefs alive by expressing the connection between the people and their land. Ceremonies renew the connections between people and country by acting out and displaying ancestral lore and belief, and by teaching the ancient traditions to the next generation. Ceremonies encourage people to come together to recognise the past and the important role that tradition and belief continues to have.

The ceremonial leaders in Indigenous communities are the Elders. The Elders are the caretakers and keepers of sacred knowledge that must be passed down through the generations. Elders are not necessarily old people. The title is gained when a person is respected by the community and recognised as having an understanding of traditional lore, culture and spirituality.

Ceremonies also demonstrate respect and understanding. *Welcome to Country* is an ancient ceremony that recognised the boundaries of clan land which were clearly identified and understood by all clan members and their neighbours. While the details of the ceremony varied according to the traditions of each clan, the ceremony was conducted when members of one clan sought permission to enter another clan's territory. The visitor was required to ask permission to enter country. This permission recognised that the custodians were agreeing to some sharing of the resources of their land, ocean, lakes or rivers.

SOURCE 2 The meaning of country, as explained by Aboriginal leader Professor Mick Dodson

When we talk about traditional country ... we mean something beyond the dictionary definition of the word. For Aboriginal Australians ... we might mean homeland, or tribal or clan area and we might mean more than just a place on the map. For us, country is a word for all the values, places, resources, stories and cultural obligations associated with that area and its features. It describes the entirety of our ancestral domains.

SOURCE 3 An Elder from the Ngarinyin people, of the north-west Kimberley region of Western Australia, explaining the significance of the traditional Welcome to Country

Before whitefellas came, it was the tradition of Aboriginals that when strangers came into their particular country to hunt or to gather, or to just pass through on their way to other places, that the host Aboriginals would go out to welcome them.

When they met, there would be the formalities of greeting. Part of the ceremony of welcome would be the men sitting around and talking men's business whilst the host women would take the visiting women and children to a women's site to talk women's business.

When this was completed, the two groups would join again and the men would hunt for kangaroo, goannas or bush turkey — and the women would prepare an area for eating and would gather firewood and berries, fruit, nuts and lily roots for a meal.

Then the ceremonies — the corroborees or jumbas would commence — and the dancing, the singing around the fire could well go on, not only all night, but sometimes for many nights in a row. Each jumba with a message — each with its own story — men, women and children taking part. Whilst during the day, the visiting tribe would be taken and shown the sites of significance and be told the stories of the spirit of the land they would be passing,

In this way, the hosts believed that by the end of formalities, when the strangers were ready to move on — they would not be considered strangers but friends who now had the spirit of the country in their hearts — they carried the Wunggud with them — just like the people who lived there.

They believed that once the spirit of the land was in their hearts, then those people would never damage the land — they would love it and care for it like those whose home country it was ...

15.5.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What term is used to describe ceremonial leaders in Aboriginal and Torres Strait Islander communities?
2. What characteristics qualify someone to be a ceremonial leader?

Using historical sources as evidence

3. Using Source 2 as a guide, explain why a simple definition of the term 'country' might be difficult.
4. Using Source 3, explain how gender roles differ in a traditional Welcome to Country ceremony. What conclusions could be drawn from this?

15.5 Putting it all together

Using historical sources as evidence

1. The Source 1 map shows the traditional lands of the many Aboriginal language and social groups. During the eighteenth century European powers, such as Britain, could take control of territory outside their own borders if they could claim that the land taken was previously unoccupied. The legal term used was *terra nullius*, which meant that it was land belonging to no-one. Using Source 1 and the text as your evidence, explain why the claim that Australia was *terra nullius* was incorrect.
2. The traditional and ancient boundaries of Aboriginal land were marked by natural features of the landscape, such as mountain ranges and rivers. European settlers recognised ownership and boundaries of land by the construction of fences, permanent dwellings or the evidence of farming. Put yourself in the position of an Aboriginal Elder of the Woiwurrung people. Write a short speech to be delivered to a group of European settlers of Victoria in the early nineteenth century. In your speech you need to argue against the nineteenth century European view of Aboriginal people wandering aimlessly across the landscape. Present the Aboriginal perspective by explaining what the concept of country means, and what gives your people a traditional claim to ownership of land.

Identifying continuity and change

3. Discuss the ways in which Indigenous communities use ceremonies as a way of recognising rights and obligations. Write a short paragraph explaining why the acknowledgment of these ceremonies continues to be important in modern Australia.

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 Complete this digital doc: Worksheet 15.3: A Dreamtime story

15.6 The ancient Australian economy

15.6.1 Trade tracks and songlines

Australia's Indigenous peoples carefully managed their land and resources to ensure their food supplies were protected. Ancient language and clan groups remained largely self-sufficient. While food was not commonly exchanged, a complex trade network was established over thousands of years. The network extended over hundreds of kilometres, linking many clans and language groups together. The countless pathways of daily travel and trade crossed the continent and are known as the Dreaming tracks. The Dreaming tracks began with the stories told in ancient times of the journeys taken by the Dreaming ancestors. The pathways they took were marked out by the features of the landscape, such as water holes, hills and riverbeds. The people remembered these tracks as the *songlines*.

The songlines

As the ancestral beings travelled across Australia giving life, they created landmarks and named the geographical features of the land. The great rainbow serpent, commonly called Jarapiri in northern and central Australia, laid eggs that became the huge round boulders of Karlwekarlwe (the Devil's Marbles). The serpent's slithering and twisting created the rivers and waterholes. As the ancestral beings formed the land, they also established the laws and 'sang' the country into life. When they completed their work the ancestral beings returned to the sky, sea or land. The songs were the record of what they had done, and the means by which their story could be handed on to future generations of Aboriginal people.

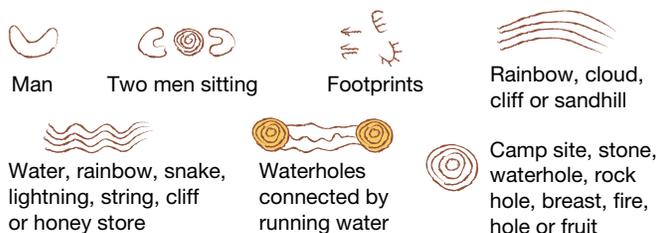
The sequence of songs, or songlines, recorded the route the ancestral beings took on their journeys of creation. These routes, or Dreaming tracks, were the maps that gave Aboriginal people a detailed mental picture of their land and all the living creatures on it. Aboriginal Elders travelled the Dreaming tracks and taught their children how to sing their songlines in the correct order. This knowledge enabled people to make their way safely through country. The man with the best memory of the songlines was honoured as the clan songman and was responsible for ensuring the teaching of the songlines to young men through

their years of initiation. The trade routes changed over long periods of time; nevertheless, the archaeological evidence of abandoned tools, shells and bones indicates the songline pathways were in continuous use by Aboriginal people for thousands of years.

SOURCE 1 Donkeyman Lee Tjupurrula Kukatja's artwork *Tingari Dreaming at Walawala* shows the landforms of the region around Kiwirrkura, approximately 400 kilometres west of Alice Springs. Aboriginal artists used symbolism as a way of creating a map of country and the sacred sites. These artworks are maps of the Dreaming places created by the ancestral beings, in the same way that the songlines formed a map, sung in short verses, of the ancestral being's creative journeys.



Symbols commonly used in Aboriginal art



15.6.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Fill in the gaps.

The pathways of daily travel and trade across the continent are known as _____. Travel pathways are marked out by features of the landscape and remembered by Aboriginal people as the _____. The songlines recorded the journey taken by the _____ as they travelled across the land. The _____ gave people a detailed mental image of their land that enabled them to travel safely through country.

Using historical sources as evidence

2. Would Source 1 be considered a primary or secondary source? Explain.
3. In what way could you compare the symbols used in Indigenous art with, for example, Egyptian hieroglyphs or Sumerian cuneiform?

15.6.2 Trade networks

Archaeological sites across Australia have revealed evidence of the extensive trade networks that criss-crossed ancient Australia. Trade took place between neighbours and regional groups, but also with those who were vast distances away, serving both practical and cultural purposes. Many different items were traded:

- Stone was the heaviest trade item and was often carried in parcels of paper bark tied with string. Evidence of the harvesting and grinding of grass seeds to make flour has been found dating from 3000 BP. The flat-surface grinding stones were a major trade item. Suitable slabs of sandstone were carried by a relay of traders from north-west Queensland, across a distance of 500 kilometres, to reach the plains of Diamantina. The volcanic stone prized for axe heads came from a quarry on Mount William, north of Melbourne. The Wurundjeri mined it and traded it to the north where it was used to cut the bark for canoes that floated along the Murray River.

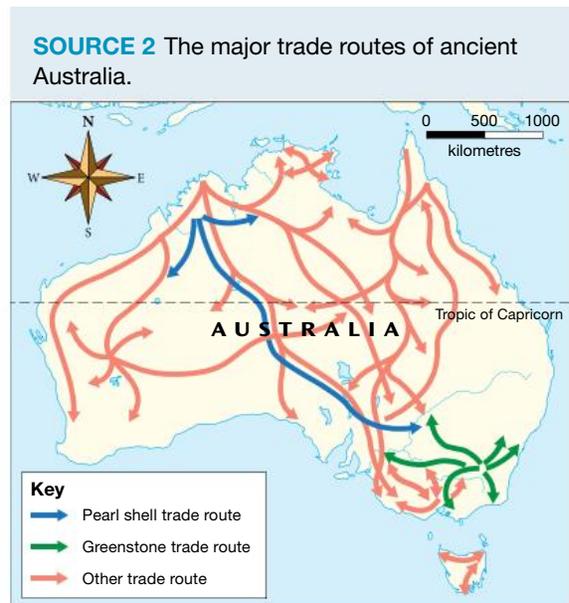
- **Ochre** from Pukardu in the Flinders Ranges was mined and traded 500 kilometres north along a network stretching across South Australia, New South Wales and Queensland. Small decorated wooden objects called *message sticks* were sent ahead of the trade parties to the custodians of the mines suggesting goods suitable for ochre exchange. The Pukardu ochre was highly sought after because it was believed to have particular spiritual value and was used for body decoration on important ceremonial occasions. Ochre exchange gifts from the people of the north included black manganese paint, boomerangs and spears, nets and bags of grass seeds.
- A small shrub grown in Central Australia called pitjuri was traded from markets held on the banks of the Cooper, Diamantina and Georgina Rivers. Pitjuri is a nicotine-like drug used to relieve hunger, tiredness and pain. People from the north exchanged their spears, glue made from spinifex, stone knives and pearl shell for the pitjuri. From the east came wooden shields and spear shafts made from reeds, and from the west came ochre and light wooden spears. The people from the south exchanged weapons, stone axe heads and possum skins for the pitjuri plant.

The trade of raw materials, such as ochre, wood and stone, was very important to ancient communities. The most common trade items were, nevertheless, the manufactured goods. The clan groups developed highly specialised skills that were widely recognised by other peoples across the land. The beautifully carved wooden bowls of Central Australia, for example, or the finest spears from the region around Alice Springs were highly valued trade items.

The pearl-shell trade

Of all the goods traded across ancient Australia, the pearl shell probably travelled the furthest. The journey of the pearl shell began when the Ngaluma people collected the shell from their beaches and from the country of the Kariara and Ngarla people who lived to their north. People also set off on rafts made from mangrove wood to collect the shells from offshore reefs. The Ngaluma traded the shell with the Indjibandi, Njamal and Njangamarda-Iparuka people in exchange for spears made from mulga and witjuti wood. The shells were carefully wrapped in soft bark to protect them as they passed through many hands on their journey across the continent. When they reached the Fitzroy River they were at the crossroads of several trade routes that were under the control of the Koneyandi people. This opened up to trade with the western desert peoples. The prized pearl shells, flaked stone blades and spear points from the Kimberley were traded for boomerangs and beautifully carved spears.

The pearl shell became more valued the further it travelled from the Kimberley coastline. Evidence of the distance of the ancient pearl-shell trade has been found across a vast area of Australia; from the tropics in the far north to the **mallee** scrub between Adelaide and the coastline of Victoria.



Sources: Museum of Australia, Cited in Barlow, Alex. (1994). *Aboriginal Technology*

15.6.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Briefly explain the importance of the following trade items to Indigenous communities.

(a) Pearl shell	(b) Ochre
(c) Grinding stones	(d) Volcanic stone
(e) Pitjuri	

Using historical sources as evidence

2. Referring to Source 2, identify the region of Australia where the trade in greenstone began.
3. Greenstone was used for thousands of years by Aboriginal communities to manufacture ground edge axes. Explain what the study of greenstone could tell archaeologists about ancient Aboriginal trade, travel and technology.

15.6.3 Trade practices

Aboriginal communities lived in small self-contained communities for most of the year. The seasons determined the availability of food and resources, and the paths people took through country. An important part of the yearly cycle was the annual gathering of the clans. These great gatherings always took place during times of plenty, when prized food was in good supply. The opportunity to feast on the large freshwater eels of Western Victoria or the Bogong moths in the high country of the Snowy Mountains provided the opportunity to conduct ceremonies, organise marriages, decide matters of law and exchange goods at the market place.

DID YOU KNOW?

Dr Bultth, an archaeologist who studied the eel-farming practices of the Gunditjmara people in Victoria's Lake Condor wetlands, has estimated that these farms could have fed up to 10 000 people.

Clan gatherings

The clan gatherings always began with a formal invitation through an exchange of message sticks across country. The western district of Victoria was one of the most densely populated areas of the continent. The people of this region, such as the Yaadwa and the Yaara, shared their resources and engaged in trade when the land was able to provide for a sudden increase in population. An abundance of eels, kangaroo, mushrooms and a variety of root vegetables meant the land could cater for visitors, without bringing food shortages and hardship on the traditional custodians. With eel feasting came markets at Mount Noorat where exchanges took place of valuable items such as spear points, possum cloaks, acacia resin, seashells and net bags. The leftover eels became a takeaway product that was dried and wrapped in kangaroo skin for transporting.

Food was not generally a trade item between ancient Australian communities. In the cooler regions of the continent the food could be preserved more readily. Fish and meat in Victoria and Tasmania were occasionally traded. In the high country of the Snowy Mountains, a wide range of food was available with the melting of the snow. Emu, possum, snake meat and Bogong moths provided a rich diet. Every year the Ngarigo and Walgalu people would send out their message stick invitations to the neighbouring peoples. Many clans would gather at Jindabyne and on the Tumut and Wollondibby Rivers for the purposes of trade and ceremony. Groups of men travelled into the high country

SOURCE 3 Message sticks were very important in protecting people as they moved through the country of another clan or language group. Smoke signals would be sent when entering another group's country, followed by the presentation of a message stick to the Elders and a verbal explanation of the purpose of the visit.



where the Bogong moths were smoked out of their resting places in the rock crevices. The moths were caught in nets and then cooked into rissoles that were transported down the mountain for all to enjoy during the ceremonial feasting.

The message sticks pictured belonged to the Yirandali language Dalleburra People, Queensland. The messages are written in symbols, not script.

DID YOU KNOW?

Bogong moths are native to Australia and get their name from the Bogong High Plains region in the Victorian Alps. When roasted and eaten, they are said to have a 'nutty taste'. They are highly nutritious.

15.6.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. State whether each of the following statements is true or false.
 - (a) Message sticks were sent before the exchange of goods took place.
 - (b) Trade often happened alongside ceremonial events.
 - (c) Clans gathered when seasons were bad to exchange scarce food resources.
 - (d) Aboriginal communities in ancient Australia understood how to preserve food.
 - (e) Aboriginal clans generally shared food rather than traded it.

Using historical sources as evidence

2. What do the messages on the message sticks in Source 3 tell you about what was important to Aboriginal Australians?
3. Why might the messages on message sticks have been written in symbols, not languages?

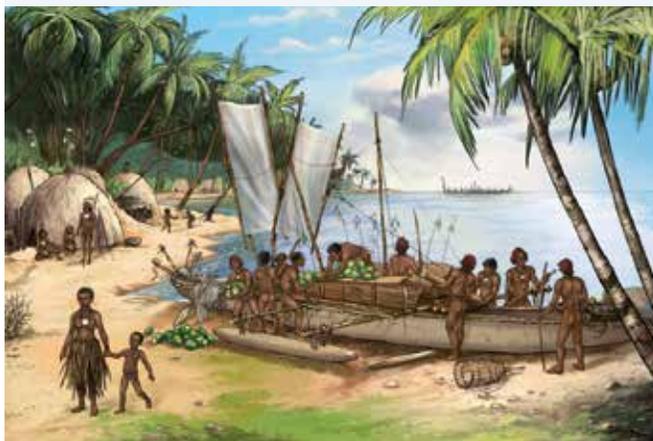
15.6.4 Torres Strait trade

The farmers and fishermen of the Torres Strait Islands had more food than they needed at certain times of the year. Turtle and dugong could be dried, stored and traded with the Aboriginal people of Cape York and the coastal people of Papua New Guinea. A range of root vegetables were also well suited to trade because they did not deteriorate quickly in the tropical heat.

Islander people of each language group traded with their immediate neighbours. The Kaurareg people were the only Torres Strait Islander people trading directly with the Cape York communities. The trade between the two groups took place on tiny Morilag Island, which lay very close to the Cape York coastline. The Kaurareg acted as traders, exchanging goods on behalf of all the other islanders. The Kaurareg exchanged goods such as finely crafted Muralag Island dugong harpoons and small bamboo items for the spears and ochres from Cape York's Gudang people.

Trade was critical for survival on the Torres Strait Islands. The canoes the islanders relied upon for fishing and transport were obtained through a complicated trade link with the Saibai people living in the

SOURCE 4 Dugout canoes swept along by two or three sails provided the transport for people and their trade goods between the Torres Strait Islands and the coasts of Papua New Guinea and the Australian mainland.



estuary region of Papua New Guinea's Fly River. Trees large enough for the construction of a canoe hull do not grow on the Torres Strait Islands. The Saibai traded with highly skilled canoe builders living in the heavily wooded forests further up river. The Saibai then adapted the single outrigger canoes that were only suitable for lagoon and Fly River journeys. They turned them into double outrigger canoes and then added masts and woven nipa-palm sails ready for the rough conditions of the open seas of the Strait. The Torres Strait Islander people exchanged shellfish and dried fish, turtle and dugong for their new double outrigger canoes, drums, **sago**, bows and arrows, **cassowary** and bird of paradise feathers.

15.6.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Create your own mind map titled Torres Strait Island Trade. Identify the different trade relationships and the goods exchanged.

Using historical sources as evidence

2. The Torres Strait Islander people and some coastal Aboriginal communities indicated direction by referring to the name given to the wind that came from that direction. The wind and the sea were central to the life in the Torres Strait. Referring to Source 4, write two sentences evaluating the importance of the dugout canoes to life and culture of the Torres Strait Islander people.

15.6 Putting it all together

Using historical sources as evidence

1. Use the sources and text in this subtopic to write a paragraph describing the importance of trade in the economy of ancient Australia. You could begin your paragraph with the topic sentence: The trade practices of ancient Aboriginal and Torres Strait Islander peoples demonstrate a thriving economy based on exchange and ceremony.
2. Write a paragraph comparing and contrasting the trade practices of ancient Aboriginal communities with those of Torres Strait Islander communities. Ensure you mention any similarities and any differences in your answer.

Identifying continuity and change

3. Ancient Aboriginal and Torres Strait Islander peoples used the natural resources of the land. What were these resources and how do we now value these in the modern Australian economy? What natural resources appear to be most valued in modern Australia?

Determining historical significance

4. What impact do you think the arrival of Europeans would have had on the ancient economy of Aboriginal and Torres Strait Islander peoples?

15.7 Society, custom and culture

15.7.1 Kinship

Kinship today plays a much more important role in Aboriginal and Torres Strait communities than in Western society. Kinship relationships are more complex than the Western notion of *family* and involve strict rules and obligations. Kinship links are tied to spiritual belief as the Dreaming ancestors were considered to have **genealogical** links with living people and their land, and so are important in deciding each person's kinship connections.

SOURCE 1 Excerpt from a speech given by Bryon Powell, representing the Kulin National Heritage Organisation, explaining the clan links of the Kulin people, May 2000

The Kulin nation was made up of five Aboriginal tribes which took up a fair swag of land in Central Victoria, centring on Melbourne itself ... They were made up of clans, family groups. And what happened with the five tribes, they had commonalities in language, custom, traditions, burial rights, and very strong trade links. And I knew the Woiwurrung and Boon Wurrung, they were exceptionally close, they actually inter-married to strengthen those ties, they traded between themselves ...

The kinship networks were strengthened through ceremonial exchange of goods. Younger men, for example, may be expected to give the gift of a spear to an older man from another clan who was connected through a kinship arrangement. The ties would be cemented by the older man's involvement in the younger man's initiation ceremonies. As trade took place over very long distances, possibly requiring movement through country belonging to different language groups, the kinship agreements were very complex. Trade goods were carefully given out to ensure all kin connections were recognised. Different traditions and ceremonies had to be learned and respected to make sure that alliances were protected and the exchange of goods could continue. The act of giving was part of ceremonial life and was very important in honouring kinship.

The kinship system was also a very important feature of life in the Torres Strait because conflict over scarce resources was more common. Trade was essential for people living in tiny island communities. Trade expeditions and negotiations were often very anxious occasions between communities where property and kinship rights were in dispute. Visiting trading parties kept their canoes near the shoreline to enable a hasty retreat if the kinship system failed to keep harmony among the different Torres Strait clans and language groups.

SOURCE 2 When outsiders were invited onto Wurundjeri lands a ceremony called *Tanderrum* was held. The ceremony granted safe passage through Wurundjeri country and a ritual exchange of gifts. The nineteenth century Charles Troedel painting shows Wurundjeri clan members fishing and camping at Merri Creek near Melbourne.



15.7.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Briefly explain what the kinship system is and why it is of such significance to Indigenous communities.
2. How are kinship and trade connected?
3. Why did visiting trading parties in the Torres Strait Islands keep their canoes close to the shore?

Using historical sources as evidence

4. Source 1 is a modern explanation of what kinship means to Indigenous Australians. Identify the key beliefs and values expressed in the source that have continued to be of significance.
5. What does the artist of Source 2 suggest about the nature of Indigenous society, and how does this contribute to our understanding of the role of the kinship and ceremony in daily life?

15.7.2 Totems

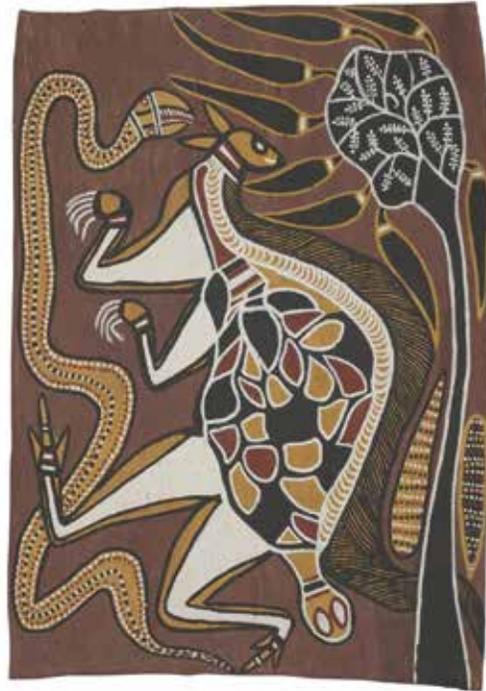
The many language groups of ancient Australia reflected the great variety of cultural beliefs. The spiritual connection with the land was nevertheless shared by all. The spiritual beliefs of the Torres Strait Islander and Aboriginal peoples shaped Indigenous lore across the land.

All life came from the land, and so Indigenous tradition and ceremony centred on fulfilling ones obligations to the land. As the land provided everything for the people, caring for the health of country was a great responsibility. Spirituality and the land were not separate. The Elders passed on their knowledge of the land and the lore through ceremony and the Dreaming stories.

During the Dreaming the ancestral beings created *totems* for the people. A totem is a special species of plant, insect, bird or animal that is held sacred and expresses the connection between the people and nature. The totem is inherited and represents the spirit world as it exists in daily life. A person has a totem shared with other clan members and an individual totem that is given to them around the time of birth. The totem identified the different clan and language groups of Australia. It also gave each individual a sense of place and cultural belonging.

The sacred places of country were protected by keeping the Dreaming beliefs and rituals alive. The Dreaming gave people the rules on where they could live, who they could marry and the animals they could hunt. The continued supply of natural resources depended on people respecting these rules put in place by the spirit ancestors. Areas of animal refuge, where hunting was prohibited, were set aside and so ensured conservation of animal species of great importance to human survival in harsh landscapes. Totems guided Aboriginal and Torres Strait Islander peoples in managing their resources. The Dreaming gave people the totem they would honour for life.

SOURCE 3 A bark painting entitled *Totems of the Manarrngu Mortuary Rites* by David Malangi, 1966. The painting shows a file snake on the left with a water goanna superimposed on a kangaroo in the centre and a tree on the right. The story depicted represents the Manarrngu mourning rites. The singing of this ceremony tells of the death of Gurrumarringu, the mighty hunter of the Manarrngu. The kangaroo and goanna represent animals he hunted. He died due to a snakebite.



15.7.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. State whether each of the the following statements is true or false.
 - (a) Two Aboriginal or Torres Strait Islander people could not have the same totem.
 - (b) Totems were created by the Elders.
 - (c) Totems helped Aboriginal or Torres Strait Islander people to manage their resources.
 - (d) A totem was given at the time of a person's birth.
 - (e) Totems were used for trade among Aboriginal and Torres Strait Islander peoples.
2. Identify what totems were and why they would have varied from one community to another.

Using historical sources as evidence

3. Refer to Source 3 for an understanding of the significance of the totem. How do the totems shown here reflect the natural environment?

15.7.3 Initiation ceremonies

Archaeologists have learned a great deal about life in ancient Australia by studying ceremonial places, called *bora grounds*. Bora grounds were built with mounds of earth in the shape of two rings. The inner ring was a space reserved for initiation rites.

A boy could not become a man or a girl accepted as a woman until passing through initiation ceremonies. Enduring tests and trials of physical and mental strength took the young from the carefree days of childhood to the responsibilities of the adult world. A general English translation of Indigenous initiation ceremonies was to be *put through the law*; meaning that initiation passed on the knowledge of the Elders, the sacred lores of the Dreaming and the right to participate in the ritual and ceremonies of country. Initiation taught young people codes of conduct, customs and good manners. A person gained status with initiation.

Initiation connected people to the Dreaming by challenging them in ways that the great spirits had been tested. The ceremonies differed according to the particular beliefs of country:

- In south-eastern Australia the Great Spirit Baiame had been forced to overcome hunger, fear and pain. The initiation ceremonies in this region expected the young to endure pain in silence, eat sparingly when hungry and contain fear when confronted with the mystical sounds of the **bull-roarer** in the dark of night.
- The Unambal people of north-west Australia told the Dreaming stories of the Wandjina — ancestral beings that came from the sky to create fire and all the natural features of the land. The Wandjina are closely associated with fertility and so initiation ceremonies involved male **circumcision** performed at the first sign of puberty. This was followed by incisions on the shoulders, arms and buttocks that were then filled with sand to create large decorative raised scars.

Initiation scars and practices, such as knocking out a front tooth (known as evulsion) or removing part of a finger, sometimes identified a person's clan group or kinship relationships. The role each person played in the process of initiation was determined by their kinship obligations. The Elders were responsible for instructing the young through the stages of the initiation, which could have involved a number of ceremonies carried out over a period of years. Initiates had to be taught the lore, the totem history and the ceremonial rites. There were often strong **taboos** that had to be observed about aspects of daily life such as the food eaten and the people spoken to. Obedience to the Elders' instructions was the key to initiation. Once the ceremony was planned the invitations were sent out to the members of kinship and clan groups to be witness to the ancient **rites of passage**.

SOURCE 4 A painting by the convict artist Thomas Watling of an initiation ceremony at the Sydney settlement of Farm Cove in 1795



SOURCE 5 An account of the initiation ceremonies of the Yuin people of New South Wales

For thousands of years, young Yuin went up the mountains (Mumbulla Mountain) as boys and came back as men. Painted with red ochre, they would leave the bora ring to follow the Dreaming track from one sacred place to another, which were all visited in proper order.

At each place there were special ceremonies with singing and dancing to tell the story of creation in the Dreamtime. There were special tests too of hardship and endurance to prove that they were worthy of becoming men. The law was explained to them, they learned about Darama, the Creator, who gave the law to the people. It tells of the peoples' links with the land, our mother, from whom we are born and to whom we return.

The mountain represents the school where young men are taught discipline. Respect for Elders and about food and plants, herbs and medicines, hunting tracking and survival ... all things are bound together and all are part of the Dreaming, where unity and harmony must be respected. They learn about the Yuin people, about their totem, Umbarra, the black duck.

15.7.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. When were initiation ceremonies held and what was the purpose?

Using historical sources as evidence

2. Imagine you are one of the Yin boys about to go up the mountain to begin initiation. Write a short account of how you are feeling, the fears you may have, what you have heard about the experiences of other boys and why this ceremony is so important to you. Refer to the text and Sources 4 and 5 for your information.

15.7 Putting it all together

Using historical sources as evidence

1. Using the sources presented in this subtopic write a paragraph about social customs of traditional Aboriginal and Torres Strait Islander peoples. Remember to include a topic sentence, supporting evidence and a concluding sentence in your response.

Analysing cause and effect

2. In ancient Australian communities there would have been more people that you would have called 'brother' or 'sister'. Explain why this was and the effect this would have had on other aspects of Indigenous life and culture.

Determining historical significance

3. Develop a subset of questions you could ask if you were inquiring into this overall question: how important were kinship systems, totems and initiation to Aboriginal and Torres Strait Islander peoples?

learnon RESOURCES — ONLINE ONLY

 Complete this digital doc: Worksheet 15.4: Aboriginal life

15.8 Conflict and death in ancient Australia

15.8.1 War and weapons

The proudly independent and different language and clan groups of ancient Australia were sometimes rivals, fighting with each other over territory and resources. Men traditionally carried spears for hunting and defence when they moved away from their campsites. Museum collections of Aboriginal and Torres Strait Islander artefacts include hundreds of different designs of weapons of war such as spears, clubs and shields. Artefacts reflect the different geography and climate of the makers' country. Coastal peoples, for example, used fishbone on the tips of their spears whilst desert people used stone. Ancient Australian tools

SOURCE 1 A warrior advancing for combat, from a drawing by eighteenth century French artist Nicholas-Martin Petit, who visited Australia shortly after the arrival of the British



ABORIGINAL AUSTRALIAN — War.

and weapons are noted for their flexibility and adaptability, being objects that could be used for a variety of purposes.

- Clubs were used for throwing, stabbing, slashing and smashing. The wood of clubs was hardened through firing and then treated with ochre and oils to prevent weathering. Clubs came in a variety of shapes and sizes. Club heads varied in shape from being cylindrical or cone shaped to bulbous or hooked. Long straight clubs were used as fighting sticks and as defence against an opponent's blows. In the north-eastern rainforests a two-edged club was used like a sword. It was carried with a large softwood shield. Large clubs, called *murrawirri*, were used in north-east South Australia for organised combat. At approximately 2 metres in length they were too big to be thrown. *Murrawirri* were usually owned by male Elders and were objects showing a person's importance in the clan. They were also used as valuable trade items. In some communities the *murrawirri* clubs were considered to have special magical powers. Clubs were also used for ceremonial purposes, particularly in dances.
- Boomerangs had a variety of purposes such as fighting, fishing, hunting and ceremonies. Boomerangs were throwing sticks that were accurate at high speeds. They were made from a very hard wood making them a deadly blade when travelling with force through the air. The form and use of boomerangs changed according to where and how the boomerang was made. The returning boomerangs were mainly used in south-east Australia. Boomerangs made in the Kimberley and in Central Australia were large and broad and generally used in combat. These boomerangs did not return when thrown but moved in a powerful swerving line.
- Spears and spear throwers were also used for hunting, fighting, fishing and ceremonial occasions. Fighting spears were designed to inflict serious wounds with heads having up to 40 barbed tips attached and tiny stone or shell fragments set into the spearhead. The barbed spears could not be pulled back out without tearing at the wound. The small shell pieces remained lodged in the flesh of the victim. In the Cape York region a large number of stingray barbs were set into the head of spears that were then regarded as having special magical properties. Every region had its own style of spear and spearhead. The *woomera* is the name commonly given to the spear thrower. The *woomera* was not thrown with the spear, but remained in the man's hand acting as a lever to project the spear with greater force.
- Shields provided defence from spears and clubs. Shields were often decorated with totemic designs and were objects of great beauty. In the region of Victoria a narrow hardwood shield was used as defence against clubs while a broad bark shield was used in spear fights. The bark was harvested when still green and so was able to absorb the impact of the spears.

Island warriors

Aboriginal and Torres Strait Island weaponry were similar, with the exception of the bows and arrows that were commonly used in Melanesian communities. Bow and arrows and spears were the main weapons of the Islands. Clubs were constructed with star or disc shaped stone heads and stout wooden handles. The razor-sharp bamboo knives were particularly effective Torres Strait weapons. Some Torres Strait Islander communities had the fearsome reputation of practicing headhunting. The

SOURCE 2 Images of the weaponry used by the Torres Strait Islander people



bamboo knives were used for ritualistic decapitation, with the heads then being hung on loops of cane passed through the mouth and out of the neck.

The people of the central region of the Torres Strait lived on flat islands with little natural defences. Raiders came from the east and the west to regularly plunder their gardens. The image of these violent warriors travelling the sea is the stuff of Torres Strait mythology. According to Island legend the warrior chief of the Mabuiag, Kwoiam, organised an army of sea pirates who led raids across the Straits and as far north as Papua New Guinea's Fly River.

15.8.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Match the weapon with its description.

Clubs	Called <i>murrawirri</i> in north-east South Australia
Large combat clubs	Used for fighting, fishing, hunting and ceremony
Boomerangs	Used as a lever to help propel a spear with force
Fighting spears	Often decorated with totemic designs
<i>Woomera</i>	Constructed with barbed tips
Shields	Used for throwing, stabbing, slashing, smashing

Using historical sources as evidence

2. Briefly explain the features of Torres Strait Island weaponry and the difference between them and the weapons used by the Aboriginal communities. Refer to Sources 1 and 2 and the text.

15.8.2 Death and funerary customs

Aboriginal and Torres Strait Islander peoples believed that with death a person's spirit would return again to the Dreaming ancestors. Funeral and mourning ceremonies differed according to clan and country, but they were all nevertheless elaborate rituals that could last for many months. The ceremonies were a time to recognise the deceased and the Dreaming ancestors. The ceremonies surrounding death in all traditional Australian Indigenous communities expressed the powerful link between people and country.

Mounds of earth, such as those built in the bora grounds, piles of stones and carved trees often marked the location of burial sites in the south-east of Australia. Funeral traditions and practices varied across Australia:

- simple burial in graves with bodies either stretched out or placed in a crouching position. Grave goods were sometimes placed with the body
- cremation. Sometimes the charred skeletal remains were collected and later buried or placed in the hollow of a tree
- drying out or smoking the body in a process called *desiccation*. The dried remains may have then been kept for a period of time before being buried
- leaving the body on tree platforms to decay. The bones were later collected and often finally buried.

Ritual always accompanied funerals, such as facing the body in a particular direction or burying personal items as grave goods. Sometimes bodies were painted with totemic images or covered in ochre. The Kulin people of Victoria tied the body in a crouching position and buried important members of the community with their possum rugs, stone tools and woven bags. Mourners painted their faces white, women cut their hair and sent the spirit of the dead on their way with singing and dancing.

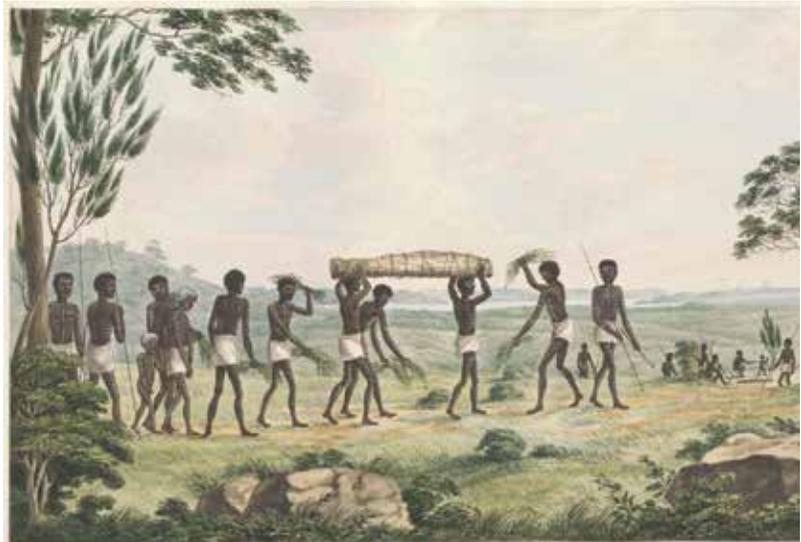
Death was not usually regarded as being due to natural causes and was often believed to have been caused by evil and supernatural forces. Ritual combat sometimes followed the death of an important member of the clan, as the relatives of the deceased were expected to take revenge against those people held responsible.

Burial sites can tell us about the numbers of people living in ancient communities, their **genetic** background and family relationships, the way in which their society was organised and how these people lived and died.

DID YOU KNOW?

At Roonka Flat, in the Murray River Valley of South Australia, the excavation of an occupation site has found burial sites of different types. Some graves were shallow and oval shaped with the dead lying horizontally, while others were deep shafts where bodies were placed in an upright position. One man's skeleton was found with the remains of a baby placed in his chest cavity.

SOURCE 3 Illustration of an Aboriginal funeral in the region of Newcastle, New South Wales by Joseph Lycett. Mourners painted with white clay carry the body of the deceased, which is wrapped in bark. The clay on the bodies of the mourners was a sign of grieving.



Tiwi and tutini

The Tiwi people live on Bathurst and Melville Islands, located 80 kilometres off the coast of Darwin. For thousands of years the Tiwi had only very limited contact with the mainland Aboriginal communities because they believed that was where the spirits of the dead made their homes. A beautiful and distinctive art form developed from the Tiwi ceremonies associated with death, known as the *pukumani*. Performance of *pukumani* funerary ceremonies went through stages that took a number of months to complete.

- The first funeral ceremony occurred at the time of death, called the *iliana* by modern Tiwi Islander people. The body was painted with totem symbols and decorated with hair ornaments. Mourners painted their own bodies white.
- Elaborate grave posts called *tutini* were carved as expressions of the person's life and as gifts to the spirit of the dead. The large poles were carved from the trunk of the ironwood tree and then erected around the grave site. The poles symbolised the importance of the dead person.
- The final *pukumani* ceremony took place approximately six months after burial at the *tutini* site. Performance of the ceremony enabled the dead to enter the spirit world. The mourners were painted in rich ochre designs and wore decorative head and armbands, called *pamajini*, as protection against a spirit that could still be angry. Dances and songs were performed during all parts of the ceremony that were drawn from the stories of the great Dreaming ancestor,

SOURCE 4 The burial poles of the Tiwi people of northern Australia. Tree trunks are carved into poles with windows and reduced sections. These examples are painted in the Tiwi art style of geometric and abstract patterns. To form the paint, ochre was mixed with wax, honey or egg yolks. Brushes were made from soft bark, sticks and human hair.



Purukapali. After the death of his child, Purukapali had ordered the people to make grave posts and to sing and dance.

- With the ending of the ceremony the mourners departed from the grave leaving the beautiful tutini to rot away.

15.8.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Briefly explain how burial practices differed between Indigenous communities.
2. What materials are tutini poles made from?
3. How long after burial did a pukumani ceremony take place?
4. Write out a short guide to the Tiwi funeral rituals for someone who is visiting the islands and keen to become familiar with the traditions.

Using historical sources as evidence

5. Imagine yourself to be a family member participating in the funeral ceremony pictured in Source 3. Describe the events that are happening around you; providing some details of the rituals associated with the funeral of your loved one.

15.8 Putting it all together

Using historical sources as evidence

1. Aboriginal and Torres Strait Islander peoples used natural resources with great skill to create very efficient tools and weapons. Suggest reasons why the archaeological record of these artefacts is limited.

Identifying change and continuity

2. Imagine that you are the producer of a documentary on the customs and culture of ancient Australia. Write a proposal for your documentary, convincing your investors that the ancient history of our land is something that all Australians should know about and celebrate. You are particularly keen to draw attention to the connection between our ancient culture and the traditions and beliefs that have continued into modern times. Your proposal should include what you intend to be the focus areas, such as the traditions of the Tiwi Islands. Don't forget to include a title for your documentary.

Determining historical significance

3. What evidence of a society can archaeologists find through the study of death and burial practices?
4. Look back at the sources in this subtopic and choose one image or account that you feel provides an insight into the culture of these ancient communities. Write a poem or story, or create an illustration expressing the significance of your chosen source.

15.9 Conserving the past

15.9.1 Investigating Australia's ancient past

With all the fascinating information that archaeological and scientific study of ancient burial sites can give us, it is easy to forget that these sites are also places of great spiritual significance and that ancient Australia is not just a story of the past.

The traditional Aboriginal and Torres Strait owners and custodians of the land continue to care for country and all the generations who belong to it. Australian governments now recognise the rights that

Indigenous communities have over human remains, artefacts and heritage sites. Debate over the control and correct treatment of human remains and heritage remains a very important issue for Australia.

The role of the archaeologist

Careful investigation of archaeological sites is where the collection of evidence begins. The sites are the source of information and the basis for our archaeological understanding of how people lived in ancient Australia. Most sites have been found through careful survey of the landscape. Pits and trenches are then dug so that excavation can begin to reveal the layers of history found in places such as middens and campsites.

The Kulin people

The Kulin people of Victoria left a variety of archaeological sites and a range of artefacts that are the record of life that archaeologists and scientists can observe and analyse.

- *Quarries.* The Kulin used many types of stone for a wide range of tools and weapons. Fine grained stone such as quartz was obtained easily and was used for making sharp tools. Axe heads needed a very hard rock so the Kulin used greenstone (diorite), which was found at only a few sites. Ten ancient greenstone quarries have been recorded. The main greenstone site was at Mt William in Central Victoria. Axe heads from this site were traded as far away as Queensland where axes were exchanged for highly valued objects such as possum skin rugs.
- *Scarred trees.* Through the Victorian grasslands old trees have been found showing symmetrical scars that are the result of the removal of bark. The Kulin cut the bark for a wide range of purposes such as building shelters, lining graves and making water containers, shields and canoes.
- *Stone scatters.* Kulin families once camped close to water sources such as rivers and lakes. Stone pieces have been found at these sites that were the remains of broken tools or the waste that came from the making of new tools. Different rocks were worked in different ways, for example, the strong greenstone was flaked roughly to shape and then ground on sandstone to gain a sharp smooth blade. Quartz was hit so that slivers of rock were sheared off.
- *Mounds and middens.* In areas where a small area of ground appears to have been raised above the surrounding land, archaeologists have found campsites. The mounds are due to the accumulation of rubbish and earth that has been blackened by the ashes of fires. In the nineteenth century the Melbourne floodplain areas surrounding the Plenty and Maribyrnong Rivers and Darebin and Merri Creeks were reported as being the site of many cooking mounds. Ovens excavated there were large and probably used to cook for approximately 20 people at a time. Food waste such as the remains of shellfish built up at the sites because shell can survive buried in the ground. Middens have also been found on the banks of rivers, lakes and beaches containing shellfish remains mixed with charcoal, bones and tools. This material collects in layers that archaeologists then use for establishing dates of site occupation.
- *Ceremonial circles.* Five Kulin earth circles have been found at Sunbury, west of Melbourne. The circles are approximately 20 metres in diameter and can be seen as a lower level in the ground indicating the earth has been scraped away. Archaeologists believe the area of the circles were used for initiation ceremonies and have found stone flakes and a large number of stone artefacts at the sites.

SOURCE 1 A collection of Aboriginal artefacts, tools and weapons including boomerangs and hand axes



- *Ceremonial rocks.* Special rocks associated with the Kulin Dreaming beliefs are located in the foothills of the Dandenong Ranges. A number of these rocks are said to represent the sons, Djart-djart and Tharra, of the creator spirit Bundjil. The rocks are also said to be connected to Dreaming stories about the making of fire. Archaeologists believe the rocks indicated sacred ground where activities such as hunting were not permitted.
- *Caves.* Cape Schank, located in Bunurong country, on the south coast of the Mornington Peninsula was of particular spiritual significance to the Kulin people. Dreaming beliefs and stories are connected to locations such as this. Bundjil was believed to have told the rocks to create the cave so that he could have shelter from a mighty storm. Underground caves that were shafts going deep into the earth were also regarded as locations of spiritual significance.
- *Rock wells and springs.* Cavities that were dug into the rock provided reliable water supplies in regions lacking in rivers and permanent creeks. These wells were used by generations of Aboriginal communities as they travelled through country.
- *Fish traps.* Along the coastal areas, Aboriginal people constructed tidal fish traps. The fish swam into the trap at high tide and were then caught at low tide. A stone or wicker basket system was used to trap fish in the rivers. Barriers across waterways would also direct fish into areas where they could be caught. At Toolondo in Victoria, the remains of approximately 4 kilometres of shallow drains and ditches remain as part of an Aboriginal system of eel or fish trapping. At Lake Condah another large

SOURCE 2 A map of Australia showing Indigenous art sites and some of the locations of ceremonial and cultural significance in south-east Australia



Source: Spatial Vision

system of Aboriginal fish traps was constructed consisting of stone weirs and channels. The Lake Condah trap has been dated to 3000 BP.

- **Burials.** Along the banks of Australia's longest river, the Murray, numerous burial grounds have been located. The burial sites are sometimes connected to important resources such as stone quarries or fish traps. The number of Murray River burial sites also indicates large Aboriginal populations living in this region over long periods of time. The Kulin sometimes buried their dead in caves or placed them on platforms in trees. The archaeological excavation and study of burial sites is a matter of community concern because archaeology has not always been respectful in the treatment of human remains. Excavation and study of burial sites is no longer acceptable without ongoing consultation with traditional custodians of the land.
- **Rock art.** Rock art sites are found across Australia as patterns, images and designs on rock surfaces. The art can be painted on, using materials like ochre and charcoal, engraved or carved with a sharp stone or rubbed into the rock with a ground stone. An engraving or carving into the rock is called a *petroglyph*. Rock art is difficult to date and requires a range of techniques. Radiocarbon dating can be used on paint, while luminescence dating can be used on some sand and rock sites. Rock art provides a wonderful insight into how ancient people saw their world. The subjects that are depicted also give clues to the daily and cultural activities people were engaged in and the tools they used. Victoria's Grampian National Park contains approximately 60 rock art sites, making it the most important rock art site in the state. The rock art sites feature images of people, human hands, animal tracks, birds and Dreaming spirits such as Bunjil.

DID YOU KNOW?

Bones and teeth leave a record of health and disease. At Roonka Flat in South Australia, people suffered from arthritis of the jaw and tooth loss. Archaeologists have connected this condition to chewing very stringy food and the use of the mouth as a tool. Chewing tough bulrush roots was part of the process of making the string necessary for the large hunting and fishing nets of the region.

15.9.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Match the Kulin archaeological site with its location.

Burial sites	Sunbury, west of Melbourne
Rock art	Cape Schank
Fish and eel traps	Plenty and Maribyrnong Rivers and Darebin and Merri Creeks
Ceremonial circles	Mt William in Central Victoria
Mounds and middens	Lake Condah
Quarries	Grampian National Park
Ceremonial rocks	Banks of the Murray River
Caves	Foothills of the Dandenong Ranges

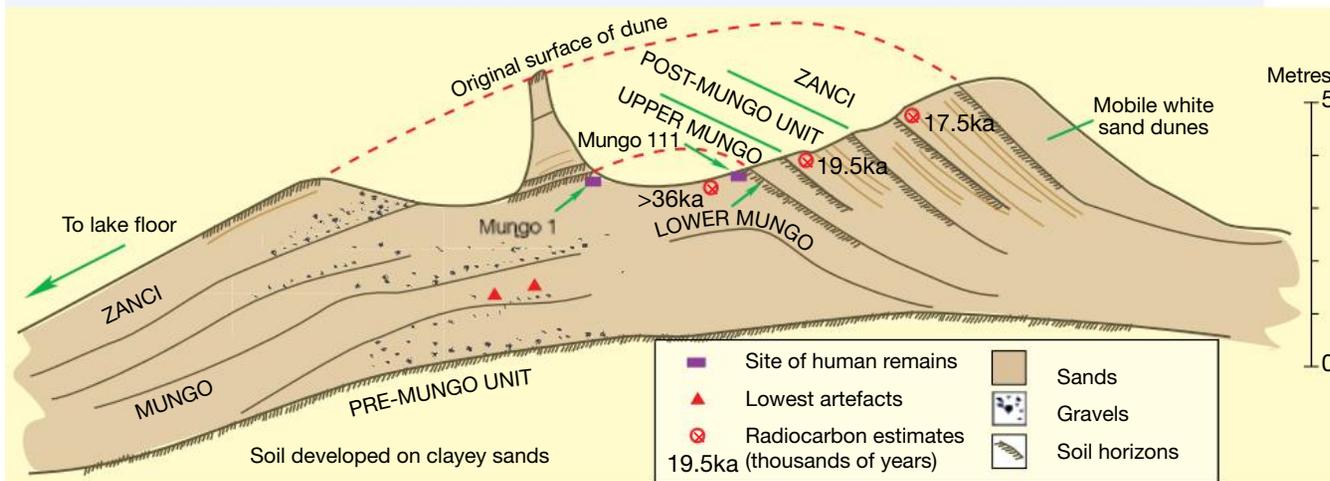
Using historical sources as evidence

2. The map in Source 2 shows artefacts and sites around Australia of archaeological significance.
 - (a) In small groups brainstorm all the challenges for the protection and conservation of these sites.
 - (b) Choose one site of particular interest to you, research it in more detail and then write a letter to your local paper explaining the significance of this site, the conservation threats it faces and what you think we need to do to protect the ancient heritage of our country.

15.9.2 Lake Mungo site study

The evidence of the lives of the ancient people who lived on the shores of the now dry beds of Lake Mungo, in the Willandra Lakes region of western New South Wales has been exposed by erosion. In 1968, wind erosion uncovered the charred remains of a young woman in the sand dunes near Lake Mungo. This skeleton, known as ‘Mungo I’, had been cremated and then the bones had been crushed before burial. The first archaeologists to study her remains estimate the burial had taken place 25 000 years ago, making it the oldest known cremation in the world. More recent studies have concluded that Mungo I is closer to 40 000 years old.

SOURCE 3 Diagram showing a cross-section of the excavations at the Lake Mungo archaeological site



SOURCE 4 The remains of Mungo III, a man placed on his side with hands clasped and then buried in a shallow grave



Many other human remains and hundreds of artefacts have since been found in the eroded dunes of the vast Lakes region. Possibly the oldest human remains are the skeleton of a person, probably a tall man, who died between 38 000 and 42 000 years ago. Archaeologists have named him ‘Mungo III’. The body had been carefully laid out, with hands clasped together and knees slightly bent. Archaeologists believe that so much ochre had been spread over the body during burial that traces of it turned the surrounding soil pink. A sense of the dignity, ritual and respect for the dead were preserved for thousands of years in the remains of Mungo I and III.

Lake Mungo is one of the 17 lakes in the Willandra region, a series of fossil lakes that is a World Heritage Site because of its natural and cultural importance. The remains of fireplaces, shell middens and human burials provide evidence of a time when Lake Mungo was full of water and supporting an abundance of life. In 2003, another remarkable archaeological discovery was made when the 20 000 year old footprints of the Willandra people were found. Archaeologists working with Elders of the Paakantji, Ngiampaa and Mutthi Mutthi people were visiting country when Mary Pappin Junior, a Mutthi Mutthi woman, showed the footprints to archaeologists. Hundreds of the Pleistocene footprints had formed in soft muddy clay, dried and then became fossilised. Aboriginal Elders have

interpreted the footprints as the record of a small group of adults and children walking on top of a thick layer of clay. Within a couple of days a band of hunters ran through the same area. The prints show that one Willandra man ran extremely fast while another was one-legged. Elders from the Paakantji, Ngiampaa and Mutthi Mutthi people continue to work with government in the ongoing care of the Lake Mungo archaeological site.

SOURCE 5 The Pleistocene footprints from the clay at Lake Mungo left a very human record of life in ancient Australia.

'[Some of t]he footprints and stride lengths [belong to a child and] show how the child walked, paused, turned and ran away from the groups they were with, before walking briskly back towards them. Perhaps the child was called back by an adult or older sibling. So seldom in open-site archaeology do we see such a personal and familiar signature'

Harvey Johnstone and Michael Westaway, archaeologists



DID YOU KNOW?

Victoria's declared Indigenous Protected Areas include Deen Maar, Kurtonitj, Lake Condah and Tyrendarra. These areas include sacred and ceremonial sites and major Dreaming tracks.

Appreciating our heritage

There are many sites in Australia today that are of historical, cultural and archaeological significance. In addition to this, the Australian government has established over 70 Indigenous Protected Areas. These areas are managed by the traditional owners who look after the plants, animals and any special sites. Indigenous rangers manage the impact of visitors, particularly tourists, who come to the area. In this way, Aboriginal and Torres Strait Islander peoples can keep their culture strong.

The Heritage Council of Victoria, for example, agreed in 2010 to principles of the Burra Charter, an agreement that is a guide for the conservation of Australia's heritage sites. The principles are of particular importance to Australia's fragile Indigenous art and settlement sites. The Burra Charter principles express the belief that:

- Heritage sites enrich all our lives because they help us to understand the past and the cultural richness of the world that we live in today.
- The cultural significance of a heritage site is in its location, the objects within it, its use and the meaning that it has to people today.

- Consideration of cultural significance, combined with careful analysis and study, must take place before any decisions are made that affect a heritage site.
- Careful records must be kept to ensure the care, management and understanding of heritage sites into the future.

SOURCE 6 Guidelines for a site study in your area

The following steps should be followed when undertaking a site study of a site relating to Aboriginal and Torres Strait Islander history and cultures.

1. Establish the location of an Australian Indigenous site of cultural significance that you can visit.
2. In small groups, plan your excursion and design a range of archaeological fieldwork activities. Remember that traditional owners should be consulted when planning site visits. Extend an invitation to a member of your local Aboriginal community to accompany your class on the excursion to help explain the significance of the site and the artefacts you are studying.
3. It is very important that the site be treated with the enormous respect you would give a church, mosque or war memorial. Think about how your group will need to move around to ensure you do not damage the site. In the planning process you will also need to:
 - Check with the National Parks and Wildlife Service for the rules of the site in their care.
 - Ensure that all visitors to your chosen site are aware of the rules of site management and that the only records taken of your visit are what you write, what you photograph and what you draw.
 - Familiarise yourself with the key features of the site location: if it is near water, if it is exposed or protected from the weather, how accessible it is, what the vegetation surrounding the site is, and so on.
 - Research the Dreaming stories and beliefs of the people who created and maintained the site.
4. Prepare an information sheet to help record your excursion findings and details of site features. Include:
 - site name and location
 - details of site or artefact
 - shape
 - size
 - material
 - use or function.

Underneath each entry leave a space for your sketch of the artefact or site feature.

When you have completed your site visit prepare group presentations, reporting on your findings. Your presentation will need to provide background information explaining the features of the site. Remember that the environmental setting including the landscape, climate and natural resources are very important in understanding how people lived. Your presentation should highlight the value of the site to Australian archaeology and any heritage issues you have become aware of. You may want to consider the problems of managing and preserving the site for future generations. You may have noticed that site management and conservation plans have already been put in place. The area of the site may have barriers erected as protection against people and animals, or drip lines to direct running water away from wall engravings or paintings. Conclude your presentation with a statement expressing why you believe the continued study and management of archaeological sites is important, and what you have learned from your study of ancient Australia.

15.9.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Identify the artefacts and evidence of life found at Lake Mungo.
2. Why were hundreds of Pleistocene footprints preserved at Lake Mungo?
3. What are the principles of the Burra Charter designed to achieve?

Using historical sources as evidence

4. Examine Source 3 and read the relevant text.
 - (a) What role did erosion play in discovering the evidence of early Aboriginal occupation of Lake Mungo?
 - (b) How deep was the Upper Mungo level?
 - (c) Would you expect Mungo I or Mungo III to be closer to the boundary between Upper and Lower Mungo?
 - (d) What does 'ka' stand for? What difference in time is there between the first date in the Zanci layer and the third date in the Lower Mungo layer?
5. Look at the photograph in Source 4. What evidence of Aboriginal religious belief and funerary practices could an archaeologist gain from studying this source?

15.9 Putting it all together

Determining historical significance

1. In 2003, Willandra Elders lifted a 20-year ban on further excavation of the archaeological sites of the Willandra Lakes region. Many Aboriginal communities believed they needed to protect their sites and history from archaeologists who had not previously respected human remains or the objects of sacred or traditional importance. In groups or as a class, consider the issues related to ownership and control of artefacts.
 - (a) Discuss the concept of a 'shared heritage' and decide what that should mean in modern Australia.
 - (b) Hold a debate on the topic that 'all Australian Indigenous people's remains and artefacts should be returned to the traditional custodians'.
2. The ability to identify with a person and their times is known as empathy. When we empathise we seek to understand, through imagination and knowledge, how others acted and thought. We show empathy when we read a novel, watch a movie, study a painting or listen to others. A child living 20 000 years ago left some of the footprints shown in Source 5; they are evidence of someone's life from long ago. These footprints provide only a glimpse of that child's life but are nevertheless historically very significant. Write the inscription for a plaque erected near these footprints, explaining to visitors what they are looking at when they see these simple footprints. Convey a sense of the significance of the footprints and support this with some general information on the key features of life in this region during this distant time.

15.10 SkillBuilder: Developing a hypothesis

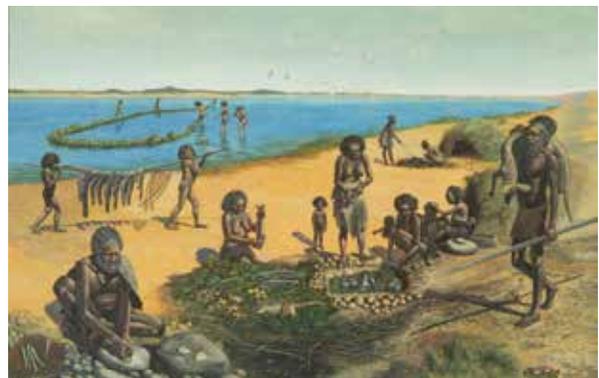
online only

DEVELOPING A HYPOTHESIS: INTERPRETING THE EVIDENCE OF LIFE IN ANCIENT AUSTRALIA: LAKE MUNGO

In their work of studying the ancient past, archaeologists are dealing with evidence that is in tiny pieces. They must rely on the physical landscape and archaeological evidence to tell the story. Very little material from ancient Australia has survived the thousands of years between their time and ours. Shell, bone and teeth will endure; animal hides, plant fibres, feathers and hair will not.

Go online to access:

- an explanation of the skill (Tell me)
- a step-by-step process to develop the skill, with an example (Show me)
- an activity to allow you to practise the skill (Let me do it)
- questions to test your application of the skill (Applying skills).



15.11 Review



This final subtopic provides a range of opportunities for you to review and respond through:

- (i) revising and checking your historical knowledge
- (ii) demonstrating your ability to apply historical concepts and skills.

Go online to access:

- a key chronology of events relevant to the topic
- a summary of the key knowledge presented in the topic
- a 'Big Questions' activity
- a multiple choice topic test
- short answer or extended writing responses.

learn on RESOURCES – ONLINE ONLY

 Complete these digital docs: Worksheet 15.5: Definitions, Worksheet 15.6: Summing up

15.10 SkillBuilder: Developing a hypothesis

15.10.1 Tell me

Interpreting the evidence of life in ancient Australia: Lake Mungo

In their work of studying the ancient past, archaeologists are dealing with evidence that is in tiny pieces. They must rely on the physical landscape and archaeological evidence to tell the story. Very little material from ancient Australia has survived the thousands of years between their time and ours. Shell, bone and teeth will endure; animal hides, plant fibres, feathers and hair will not.

Archaeologists are involved in the work of detectives as they:

- search for evidence
- analyse the evidence, separating relevant from irrelevant information
- draw conclusions based on the evidence
- combine the evidence with background knowledge to develop a hypothesis.

Lake Mungo is a site of enormous archaeological importance because it provides some understanding of life as it may have been over 40 000 years ago. Our image of life at Lake Mungo is built from the limited archaeological evidence and from our modern understanding of traditional life as it existed in Aboriginal communities in more recent times. It is easy for us to imagine that the lives of Aboriginal and Torres Strait Islander communities remained unchanged for generations. We have built a picture of Indigenous peoples as nomadic hunters, stalking kangaroos or dugongs and living in small independent tribal communities; beliefs, such as the Dreaming, reach back into the distant past and give us a sense of the connection between the past and the present. But we also have a great deal of evidence pointing to the diversity, or mixture of cultural traditions, of ancient Indigenous communities.

What is a hypothesis?

A hypothesis is an explanation, made on the basis of limited evidence, and is a place to begin a more detailed study or investigation. Anyone who develops a hypothesis is making a guess, based on the evidence they have. When a hypothesis is well supported with solid evidence we call it a *theory*.

The difference between theories and hypotheses is known as the *contestability* of history. It reminds us that history is about interpreting the evidence. How the past is understood and interpreted is influenced by the point of view of the historian. If we look at people and events from our own modern Australian point of view we can sometimes misunderstand what has happened. We all have a cultural background that influences us. Our understanding of the world is shaped by many things such as our nationality, values, beliefs, personal experiences and interests.

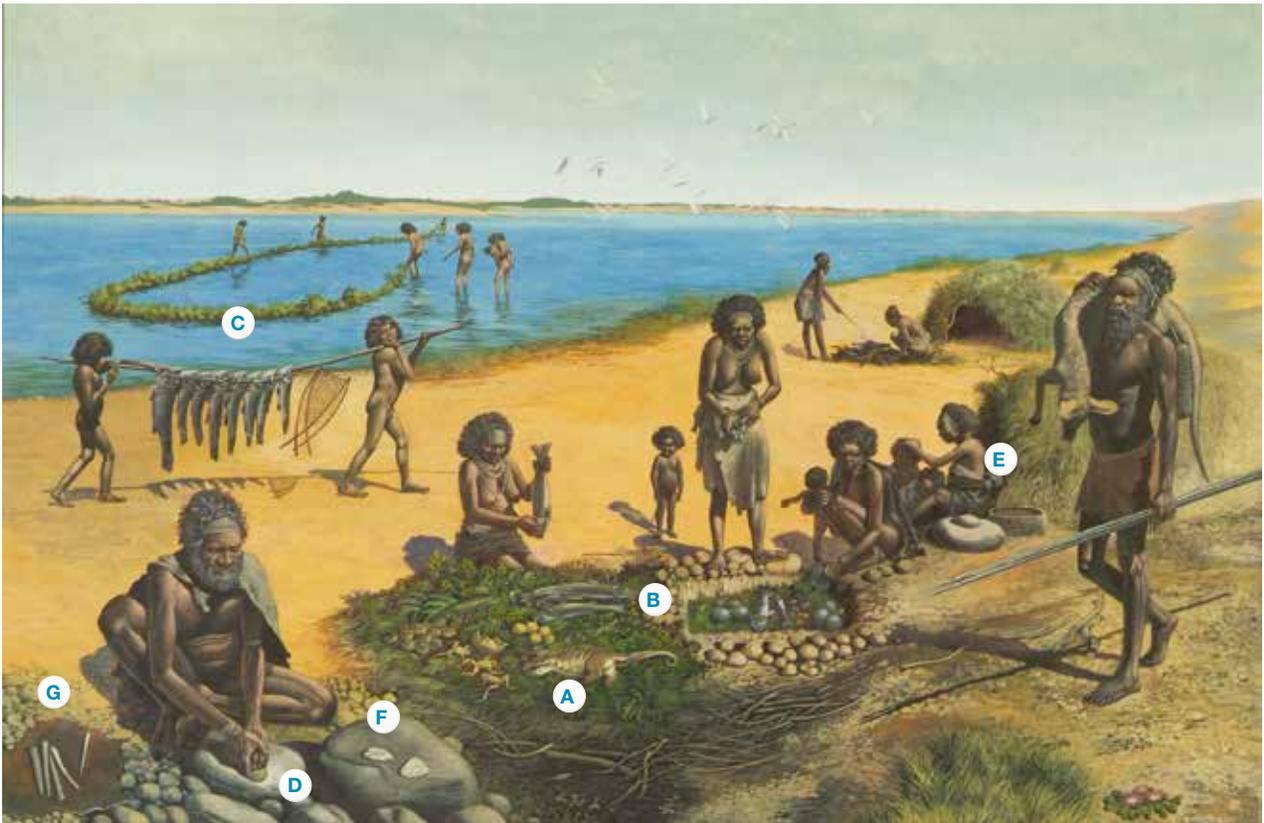
Archaeologists study the evidence that has survived to explain and understand ancient life at Lake Mungo. Because the archaeological evidence of Lake Mungo is limited archaeologists have developed more than one hypothesis to explain the nature of Lake Mungo life long ago.

15.10.2 Show me

Look carefully at Source 1, an artist's reconstruction of Pleistocene life at Lake Mungo. This image gives a very general view of Lake Mungo life, using details that have been borrowed from what we know of later Aboriginal tools, technology and traditions. The image shows Aboriginal people from the Pleistocene Period living in much the same way as Aboriginal people did in south-east Australia at the time of European settlement, two thousand generations later.

SOURCE 1 An image of life during the Pleistocene Period at Lake Mungo, by Giovanni Caselli. The visual reconstruction was based on research published in Bernard Wood's book *The Evolution of Early Man* published in 1977.

- A** Remains of animal species such as bandicoot, rat, kangaroo, wallaby, wombat and small marsupials such as **bettong**, were found in the fireplaces at Mungo. Fireplace evidence suggests that hunters returned to the community site for cooking and eating. Remains of birds, emu eggs and frogs were also found at the site.
- B** Remains of shellfish and golden perch have been found, as have the shallow fireplace ovens. Perch were probably caught in deeper lake water as indicated in the image of people fishing in the background.
- C** Fish traps and fish netting were also probably used. The fish trap shown was not found at the Lake Mungo site and is based on artefacts found in south-east Australia dating from a much later period.



- D** The stone tools shown do not closely correspond with the style of tools found at the Pleistocene Period Lake Mungo site. Grinding stones, as shown, were found at Lake Mungo, with no evidence of the collection of seeds for grinding before 15 000 BP. Grinding stones found in south-east Australia from much later periods were flat, unlike the rounded stone in the image.
- E** The clothing and physical appearance of the people are based on images of Aboriginal people from more recent times. Cloaks, body decoration and headbands have not been found. Necklaces made from animal teeth and bones have been found. The baskets and spears are based on artefacts found in the region from much later time periods.
- F** Axe heads have not been found at the Pleistocene site.
- G** Bone artefacts similar to those shown have been found in excavation. Archaeologists think these may have been used for sewing or fishing, but definitive evidence has never been found.

The following steps will help you analyse the evidence and establish your own hypothesis and investigate the various Lake Mungo hypotheses that archaeologists have put forward:

1. *Begin with a question.* For example, ‘What is the key feature of the Lake Mungo lifestyle during the Pleistocene period?’
2. *Based on your question, write a central statement that becomes your hypothesis.* For example, ‘The people of the Pleistocene period lived in small hunting and foraging family units’. Your central statement, or hypothesis, should be arguable.
3. *Investigate your thesis.* Consider the other possibilities to explain the nature of Pleistocene life at Lake Mungo, for example, ‘The people of the Pleistocene Period lived in large communities supported by hunting and foraging a wide area of land’.
4. *Conduct some research into theories developed by archaeologists.* Peter Hiscock, for example, investigated the Lake Mungo site to develop his own visions and theories about life during this period. Hiscock’s study of the evidence challenges the Lake Mungo theory expressed in the sources.

The annotations in Source 1 provide you with questions to consider when assessing the usefulness of the source as evidence of the Pleistocene lifestyle.

15.10.3 Let me do it

Form a hypothesis about life at Lake Mungo and use the steps outlined to write a paragraph explaining why your hypothesis is correct, based on your preliminary research. Refer to the information in Sources 1 and 2 to help develop your hypothesis.

Present your Lake Mungo hypothesis to your class in a creative way. Source 1 is a visual representation of a hypothesis. You could present your hypothesis as a poster, short speech or story.

SOURCE 2 Excerpt from Bernard Wood’s *The Evolution of Early Man* describing ancient life at Lake Mungo

Recent research in Australia has shown that thriving communities were established there nearly 30 000 years ago. These people lived on narrow strips of land between land, lakes and the huge sand dunes that stretched out into the desert. Fish bones, shell remains and animal bones are evidence that they learned to exploit the lakes as well as the land. Hearths where they cooled their food have been excavated and it is the carbon from charred bones that has provided the dating evidence.

15.10 Activities

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Determining historical significance

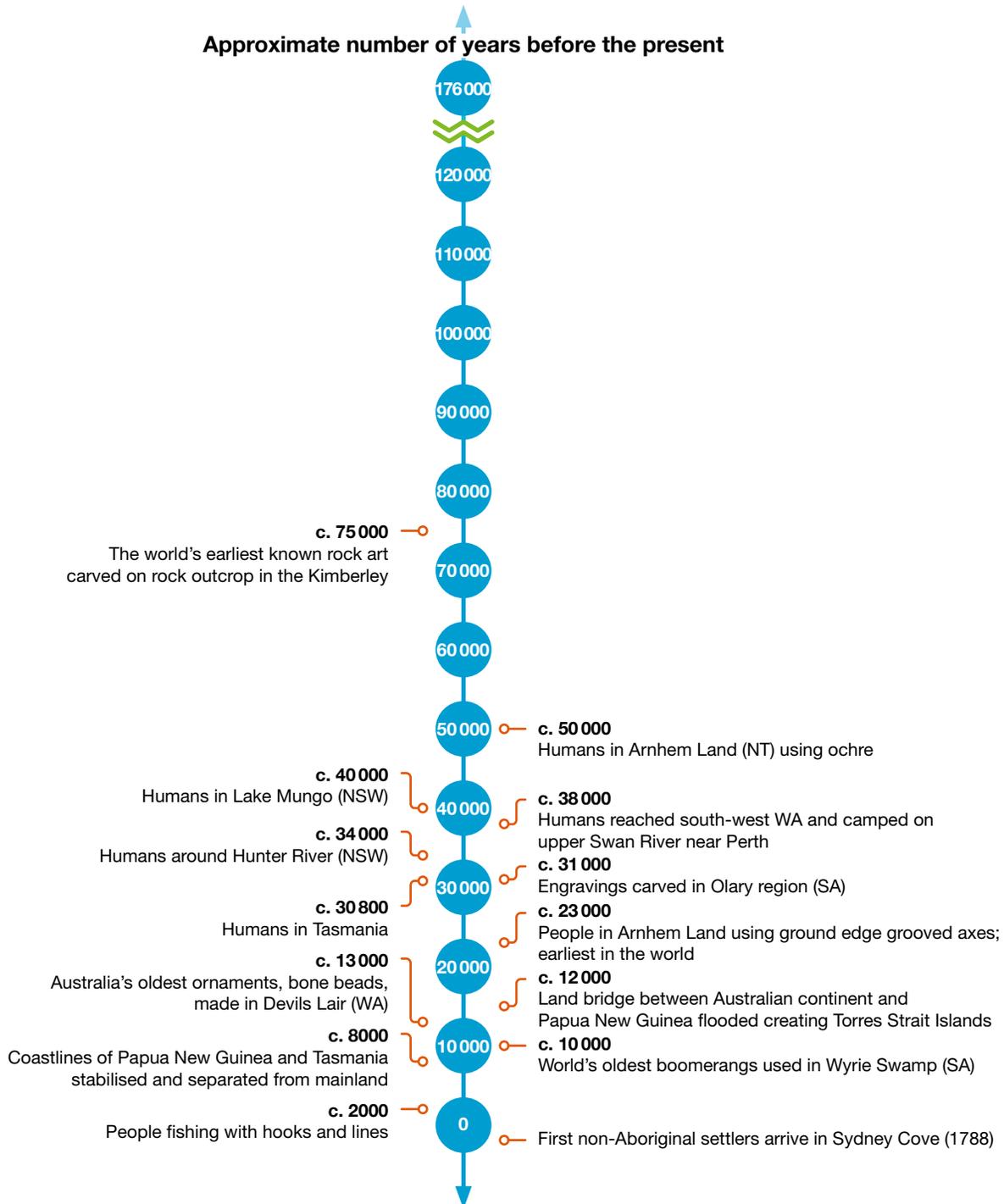
1. What evidence do archaeologists need to study in the process of developing their understanding of life in ancient Australia?
2. What is the correct meaning of the term ‘hypothesis?’
3. Why have archaeologists developed more than one hypothesis to explain and understand ancient life at Lake Mungo?
4. What is the difference between theories and hypothesis known as?

15.11 Review

In this topic we have investigated the ancient past and culture of Aboriginal and Torres Strait Islander peoples. Our study of the traditions and beliefs of thousands of years and the connections between culture and country gives us an appreciation of the continuing importance of history and heritage in understanding modern-day Australia.

15.11.1 Review

Chronology: timeline of ancient Australia life and events



Key knowledge: summary

15.2 Examining the evidence

- Scientists and archaeologists study the record of Australia's ancient past in sites such as Lake Mungo.
- The oral history of Indigenous peoples has also left a record of the ancient world in the form of stories passed down through the generations.
- Museums work with traditional communities to give meaning to the artefacts they have in their collections.

15.3 The first people of Australia and the Torres Strait Islands

- Scientists believe that the low sea levels of the Ice Age made the settlement of Australia possible because the first Australians were able to walk much of the way from their place of origin in South-East Asia to the islands of the Torres Strait and on to the Australian mainland.
- As human occupation spread across Australia hundreds of different languages and beliefs developed to explain the nature of the land and the links between people.

15.4 Managing an ancient land

- Aboriginal and Torres Strait Islander communities used their detailed knowledge of climate, animal and plant life to manage their resources and survive in very challenging natural environments.
- Fire was used as a tool to care for the land, hunt and promote the growth of new vegetation.
- Farming and fishing was central to life for people living in the Torres Strait.

15.5 Language and ceremony in ancient Australia

- At the time of European settlement, Australia was a multicultural society where there were at least 250 separate Aboriginal languages spoken and hundreds more dialects.
- The languages and traditions of the Torres Strait Islanders were related to both Papua New Guinea and Aboriginal Australia.
- Elders are the ceremonial leaders of Indigenous communities with their knowledge of tradition, culture and spirituality.

15.6 The ancient Australian economy

- Dreaming tracks were well-established trade networks extending for hundreds of kilometres across the land to provide links between many clan and language groups.
- Sequences of songs provided a record of creation beliefs and helped people to create mental maps of their country enabling them to travel long distances in safety.
- Large gatherings of many clan groups occurred annually to coincide with increased food supplies and to provide an opportunity for trade, feasting, ceremonial celebrations, marriage and business negotiations.

15.7 Society, custom and culture

- Relationships between clan groups and within families are complex in Indigenous communities and are known as kinship networks.
- Clans were identified by totems that were plants, insects, birds or animals regarded as sacred and expressing the spiritual connection between people and the natural world.
- Bora grounds were ceremonial places where initiation rites which gave young people the status and responsibility that came with adulthood were often carried out.

15.8 Conflict and death in ancient Australia

- A wide variety of ancient weapons such as clubs and spears developed as a reflection of the very different traditions, geography, resources and climates of Australia.
- The ancient pukumani ceremony of the Tiwi Islands has survived into modern times as a beautiful art form showing the importance to Indigenous communities of funeral ceremony and ritual.

15.9 Conserving the past

- The ancient river bed of Lake Mungo in New South Wales has provided evidence of the oldest known funeral practices anywhere in the world.
- Aboriginal and Torres Strait Islander communities have a very important role in the conservation and cultural appreciation of archaeological sites like Lake Mungo.

Key knowledge: multiple-choice topic test

1. During the Ice Ages people could walk much of the journey from South-East Asia to Australia because the ocean level dropped up to _____ below the present level.
 - (a) 10 metres
 - (b) 1 kilometre
 - (c) 160 metres
 - (d) 10 kilometres
2. The Torres Strait is located between:
 - (a) the Australian mainland and Papua New Guinea.
 - (b) the Australian mainland and Tasmania.
 - (c) the Australian mainland and Indonesia.
 - (d) the Australian mainland and New Zealand.
3. Despite the different landscapes, all the Torres Strait Islanders:
 - (a) spoke the same language.
 - (b) grew the same crops.
 - (c) gained food and resources from the sea.
 - (d) traded with Aboriginal communities.
4. The ceremonial leaders in Indigenous communities are the Elders because:
 - (a) their old age has given them wisdom.
 - (b) they are respected community members with a deep knowledge of tradition.
 - (c) they are born into a hereditary position of power.
 - (d) they are the great warriors.
5. What did the term *terra nullius* mean?
 - (a) Distant land
 - (b) Land belonging to the nullius clan
 - (c) Land belonging to no-one
 - (d) Land belonging to all
6. Why was pitjuri a valuable trade item?
 - (a) It was valued for its great beauty.
 - (b) It was a strong timber used to make spears.
 - (c) It was used for decoration.
 - (d) It was a drug that could relieve pain, tiredness and hunger.
7. Why were kinship relationships very complex in Indigenous communities?
 - (a) People lived in small village communities.
 - (b) People were living in harsh environments.
 - (c) Family links were tied to spiritual beliefs.
 - (d) Families were very large.
8. A totem is a special plant or animal that:
 - (a) people were permitted to hunt or gather for food.
 - (b) was only known of through Dreaming beliefs.
 - (c) was chosen during an initiation ceremony to protect a young person.
 - (d) was painted and carved onto rock walls.

9. Which of the following was the ceremonial place often used for initiation ceremony?
- (a) Bull-roarer
 - (b) Midden
 - (c) Bora ground
 - (d) Ancestral being
10. What is a *murrawirri*?
- (a) A type of animal
 - (b) An ancestral being
 - (c) A club
 - (d) A boomerang
11. What are the tutini?
- (a) Elaborately carved grave posts used in the pukumani ceremony
 - (b) A set of Tiwi Island beliefs
 - (c) A weapon used by Torres Strait Islanders
 - (d) A totem
12. Lake Mungo is the site of the:
- (a) largest ceremonial grounds found.
 - (b) most remote Indigenous communities.
 - (c) oldest known cremation site in the world.
 - (d) most complex rock art in Australia.

15.11.2 Respond

Using historical sources as evidence

1. Look carefully at the artefacts and images that have been used to tell the story of ancient Australia in this topic. Conduct your own research to locate another three Aboriginal or Torres Strait Islander artefacts or images that you feel contribute to an understanding of the richness of thousands of years of Indigenous history and culture. Create an information sheet to introduce Year 7 students to the study of ancient Australia. Your information sheet should include drawings of the artefacts and images you have chosen accompanied by some background detail on the origin, purpose and significance of your chosen sources.

Determining historical significance

2. Read Source 1, an account of Roonka Flat. Create a timeline that places different periods of life at Roonka Flat alongside events in the world beyond Australia. Using the source for your ideas, design a promotional poster for a museum exhibition of the artefacts and archaeology of Roonka Flat. Your poster needs to communicate an understanding of why Roonka Flat is so important to the archaeology and history of Australia.

SOURCE 1 Account of the significance to Australian archaeology of the Roonka Flat site, from Barry Hailstone, *River Murray Burial site*, 1989

On a distant day, 4 000 years before the birth of Christ, the body of a young man was laid to rest in a vertical grave on this river bank with ornaments of oyster shell and bone. It was almost 1 000 years before the Egyptians began building the Great Pyramids. About 2 000 years before Stonehenge was built, and nearly 4 000 years before Julius Caesar strode ashore on a British beach. Claims, supported by radio-carbon dating at many of the world's leading laboratories, yield a record of the richest and most comprehensive human history of any single site in Australia, if not the world. To say that the site is significant is an understatement. The site is one of only a few places on Earth, where you can stand on ground hallowed by the recurrent tenure of Man, for such a time-span, arguably 35 000 years.

The most significant discoveries were made in the area called Roonka — an Aboriginal word, which relates to the grubs of moths that abounded in the root systems of trees, and which were relished by the Aborigine hunter gatherers of the region. International archaeologists agree, that at Roonka, a unique archaeological cemetery has been found which contains a substantial number of skeletons, apparently buried over a very long time stretching back to 17 000 BC, perhaps further. Archaeologists know of no other site like it. It is much richer than any other known site around the world. Burial practices provide a rare insight into the ideologies of bygone societies. Clues about Aboriginal mortality have emerged that have changed the perceptions about Aboriginal prehistory.

People first camped there about 18 000 years ago, but did not use the area as a burial ground until later. The earliest burials are in a distinctive series of 12 graves, dated to a period between 4 000 and 7 000 years ago. Bodies were placed vertically in a shaft hole accompanied by pendant ornaments. One was found with a bone dagger 29 cm long, apparently used to pry open the rib cage. There is evidence that some of the bones of the buried skeletons have been rearranged, suggesting that the graves were reopened or revisited at a later date, possibly as part of the burial ritual.

From a later period — since 4 000 years ago — there are 70 graves which show a change in burial practices. The bodies of mature adults were either fully extended or contracted, and graves contained food offerings, bone awls, bodkins and stone artefacts. Some individuals were elaborately clad in ornaments, jewellery and animal skins secured with bone pins or bodkins, and some were accompanied by an infant. Suggesting a differentiation in social status.

Responding to the big questions

At the beginning of this topic, several big questions were posed. Use the knowledge and understanding you have gained through your study of the subtopics to answer them:

1. Who were the people of ancient Australia?
2. How did Australia's geography shape ancient Aboriginal and Torres Strait Islander communities and their culture?
3. What evidence exists about Australia's ancient past?
4. Why is conservation of Australia's ancient past important?
5. Why is the history of Aboriginal and Torres Strait Islander peoples important to modern-day Australia?

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Complete these digital docs: Worksheet 15.5: Definitions, Worksheet 15.6: Summing up

UNIT 6

DEPTH STUDY 2:

INVESTIGATING ONE ANCIENT SOCIETY (EGYPT, GREECE, ROME, INDIA, CHINA)

16 Ancient Egypt 317

17 Ancient Greece 351

18 Ancient Rome 

19 Ancient India 

20 Ancient China 388

TOPIC 16

Ancient Egypt

16.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

16.1.1 Links with our times

Modern Egypt is one of the world's poorer countries. Unlike several other Middle Eastern nations, it lacks oil and other natural resources. Despite such disadvantages, until recently, vast numbers of visitors flocked to Egypt to marvel at traces of its glorious ancient past. They looked in awe at the pyramids at Giza and the royal tombs in the Valley of the Kings;

they puzzled over questions such as why the ancient Egyptians were so fascinated by death and how the mighty pyramids were built without any modern construction devices.

Since Egypt erupted in political conflict, in early 2011, visitor numbers have fallen. As you can judge from the image, Egypt is now considered a very volatile place. There have been many oppressive acts by its authorities, violent clashes between protestors and police and soldiers, and several terrorist attacks. However, despite the great dangers, archaeologists have carried on the exciting work of discovering Egypt's tombs, mummies and other clues about the fascinating ancient history of this land.



Big questions

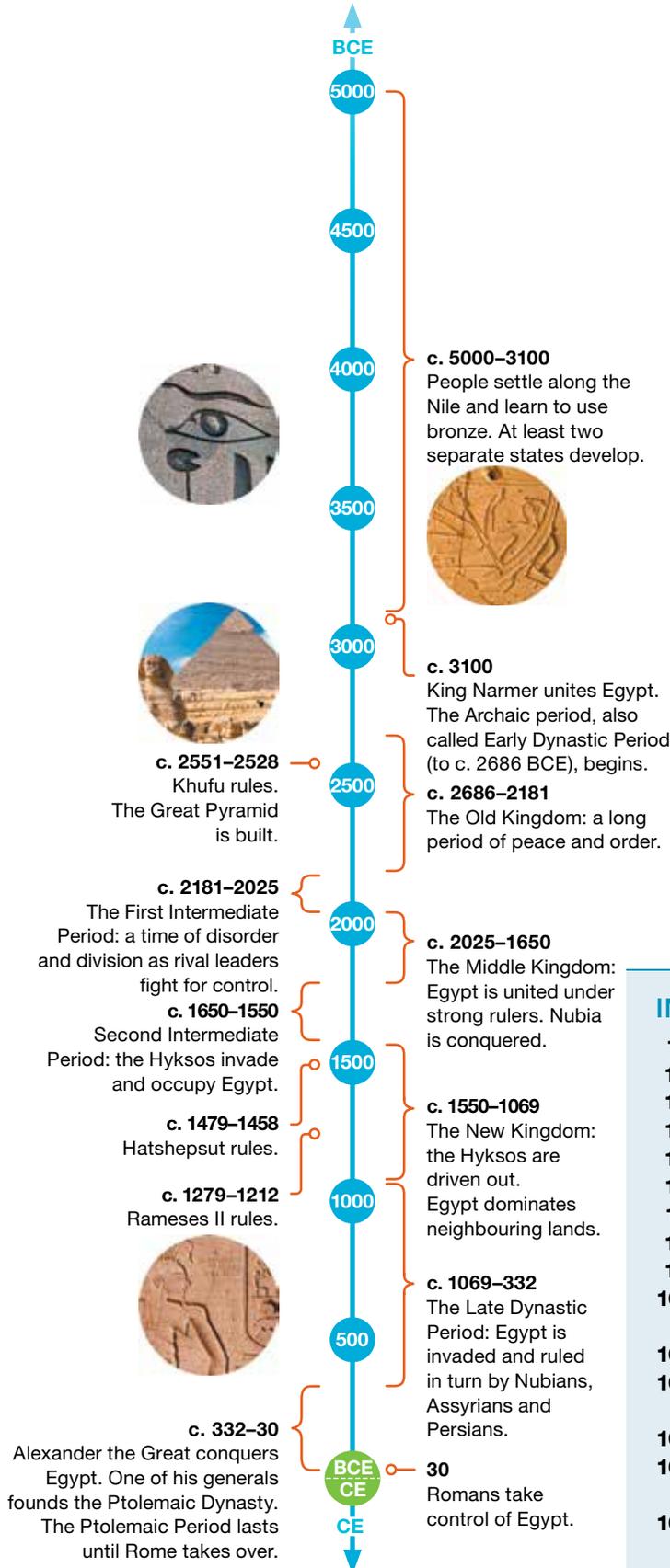
As you work through this topic, look for information that will help you to answer these questions:

1. How did ancient Egypt's natural environment influence its civilisation?
2. How was ancient Egypt organised and ruled?
3. What was the influence in ancient Egypt of religious ideas and beliefs about an afterlife?
4. What can ancient sources tell us about life in ancient Egypt?
5. What are the legacies of ancient Egypt?

Starter questions

6. For how long was Egypt a great ancient civilisation (see timeline)?
7. How do you think the pyramids could have been built?
8. Have you heard of hieroglyphics (the ancient Egyptian writing system in which pictures and symbols represent words and sounds)?
9. Have you read, heard or seen any stories about Egyptian mummies?

A timeline of ancient Egypt



INQUIRY SEQUENCE

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16.2 Examining the evidence

16.2.1 How do we know about ancient Egypt?

As you study the pictures in this spread, you will notice many clues about life in ancient Egypt. This is because the ancient Egyptians left a huge amount of primary source evidence behind them. As in Mesopotamia, most Egyptian houses were made of mud bricks so they left few traces, but their pyramids, temples and tombs were made of stone. The pyramids and tombs of Egyptian kings and nobles contained mummies and brilliant artworks, including statues of gods, models and wall paintings. Many of these are very well preserved. There are also colossal stone statues of pharaohs and magnificent painted wall panels.

Ancient Egyptian written primary sources

Egyptians used writing, in the form of symbols called hieroglyphs, from about 3100 BCE but from the fourth century to the nineteenth century CE no-one knew how to read ancient Egyptian. Thanks to the discovery in 1798 of the Rosetta Stone and the dedicated work of two nineteenth-century scientists, the code was broken and scholars can now read the many primary source records of ancient Egypt (see 16.8 Write like an Egyptian).

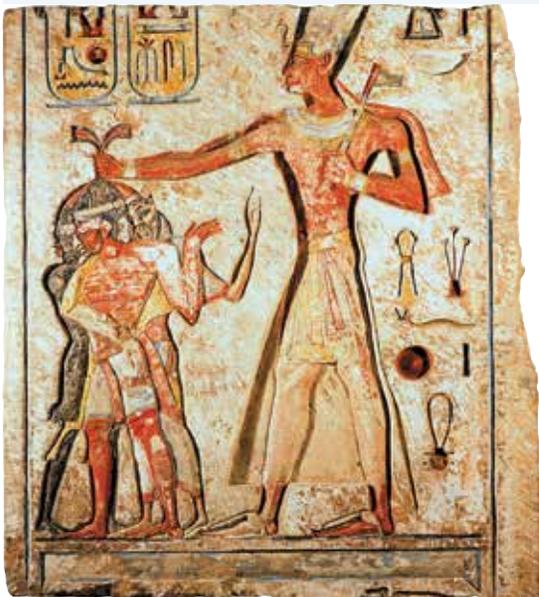
Ancient secondary sources

Some ancient written sources on Egypt are really secondary sources. This is because they were written a very long time after the events they describe. Among them are the writings of the Greek historian Herodotus (c. 484–420 BCE), who travelled to Egypt to gather information. They also include the surviving pages of a history of Egypt written by an Egyptian priest called Manetho around 300 BCE.

SOURCE 1 The gold mask that was found covering the face of the mummy of the New Kingdom pharaoh Tutankhamen



SOURCE 2 A painted limestone panel showing the great New Kingdom pharaoh Rameses II striking bound prisoners of war



SOURCE 3 A wall painting from the tomb of Nebamun at Thebes (c. 1400 BCE), showing him hunting birds in the marshes with a throwing stick. With him are his wife, daughter and cat.



16.2 Putting it all together

Check your understanding

1. What types of sources survived from ancient Egypt?
2. Why did those sources survive while others left few traces?
3. Why don't historians consider ancient written sources by, for example, Herodotus and Manetho to be primary sources for ancient Egypt?

Using historical sources as evidence

4. Look closely at Source 1 and explain what it can tell us about:
 - (a) the wealth and power of the rulers of ancient Egypt
 - (b) the skills of ancient Egyptian artists and craftspeople
 - (c) preparations that were made for death in ancient Egypt.
5. Study Source 2.
 - (a) Describe the main features of this painted panel.
 - (b) How can you tell that the men on the left are prisoners?
 - (c) Why do you think the pharaoh is depicted as being much bigger than his captured enemies?
 - (d) Why do you think an Egyptian ruler would want to be shown killing his prisoners?
6. Look very closely at Source 3.
 - (a) Describe the details of the painting.
 - (b) What are the people standing on?
 - (c) What is Nebamun using to hunt birds?
 - (d) Compare and contrast this weapon with an Indigenous Australian boomerang.
 - (e) What might we learn from this painting about a favourite Egyptian pastime?
7. Write a summary of all you have discovered about ancient Egypt from these three sources.

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 Complete this digital doc: Worksheet 16.1: Primary or secondary?

16.3 The gift of the Nile

16.3.1 Floods and irrigation

Like many other ancient civilisations, Egypt developed along a river — the Nile. The waters of the Nile are what made civilisation possible in Egypt's hot, dry, sun-baked land. The Nile is formed by the joining of two rivers, the White Nile and the Blue Nile, which flow north from the wet highlands of central Africa. The Nile flows through the deserts and finally empties through a long **delta** into the Mediterranean Sea. The people of ancient Egypt lived in 'the Black Lands', the river's floodplain. These parts of the land were covered by water whenever the Nile flooded.

Each year, between June and September, heavy rains in central Africa caused the Nile to flood. The annual flooding provided a layer of fertile soil. Without this flooding, civilisation would not have developed in Egypt. People began to live along the Nile from about 5000 BCE. Its waters, the plants that grew in the soil on its banks, and the birds, fish and mammals that lived around it provided all that they needed (see Source 3 in subtopic 16.2 Examining the evidence). They domesticated cattle, sheep, goats and geese and grew crops in the floodplains.

The river provided reeds to make boats, roofs, baskets and **papyrus**, and a transport route for people and goods. The annual flooding also helped set Egypt's calendar. The **Inundation**, the period of flooding, was regarded as the start of each year.

To use the Nile's waters more efficiently, the Egyptians invented a way of irrigating their crops by lifting the water from the river and moving it through ditches in their fields. To do this they used a bucket device called a **shadoof**, a method that is still used today. Most importantly, irrigation enabled part of the population to produce enough food for the whole population. This freed others to do more specialised work.

DID YOU KNOW?

Away from the floodplain of the Nile, 90 per cent of Egypt is desert. The arid deserts provided little to sustain the Egyptians, but deserts were difficult to cross and for centuries they helped Egypt to develop its civilisation without the constant threat of foreign invasion.

SOURCE 1 From *The Histories*, written by the ancient Greek historian Herodotus, who visited Egypt in 475 BCE

... it is clear to any intelligent observer ... that the Egypt to which we sail nowadays is ... the gift of the Nile ... When the Nile overflows, the whole country is converted into a sea, and the towns, which alone remain above water, look like islands. At these times water transport is used all over the country instead of merely along the course of the river.

SOURCE 2 Ancient Egypt — its main geographical features and key sites



Source: Map drawn by MAPgraphics

- ◊ Early river civilisations
- ◊ Early urban civilisations

16.3.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Complete the following sentences by choosing the correct words from the alternatives in brackets:
 - (a) The Nile is formed by the joining of two rivers, the (Green/White) Nile and the (Blue/Black) Nile.
 - (b) Ancient Egyptians lived in the (deserts/floodplains).
 - (c) The Inundation was the period of (drought/flooding).
 - (d) Egypt's natural defences were provided by (mountains/deserts).
2. Suggest why the lands along the Nile's floodplain were called 'the Black Lands'.

Using historical sources as evidence

3. Read Source 1.
 - (a) What do you think Herodotus meant when he called the civilisation of ancient Egypt 'the gift of the Nile'?
 - (b) Make a list of other ways in which the flooding of the Nile affected the lives of the ancient Egyptians.
4. Using Source 2, locate the delta of the Nile and describe its shape and the geographical features that would have made it a good place for farming.

16.3 Putting it all together

Identifying continuity and change

1. Explain how cultivating plants and domesticating animals would have transformed the lives of people living along the Nile.

Analysing cause and effect

2. In what sense can the Nile be considered to have contributed to Egypt's success in developing a civilisation?

16.4 The people of Egypt

16.4.1 The structure of ancient Egyptian society

Ancient Egyptian society was layered like a pyramid (see Source 1). At the top was the pharaoh, who was considered both a king and a god. Beneath him was the vizier (prime minister) who was in charge of almost everything. Next in importance were the nobles, priests, officials and scribes. Then there were the common people, peasants and slaves.

Nobles, priests, officials and scribes

Nobles formed a wealthy class in ancient Egyptian society. These landowning families lived privileged lives while their large estates were farmed by peasants and labourers. Priests controlled the temples and this role gave them enormous power. The work of administering Egypt and ensuring that the pharaoh's wishes were carried out was done by officials. Most high officials were nobles but some were common people who worked their way up as scribes. Egypt's many scribes, like the man in Source 2, ranked below the ruling classes of nobles, priests and officials but above the common people. Because they had been trained to read and write scribes were employed to keep state records including taxes.

The ordinary people

Among the common people, **artisans** formed a large group. Young men learned their craft from their fathers. Craftsmen included:

- stonemasons, who made temples, tombs, statues and monuments
- painters, who decorated temples, tombs, coffins and canopic jars (see subtopic 16.7 Mummies unwrapped)
- woodworkers, who carved furniture and other objects
- wigmakers, who made wigs and false beards
- metalworkers
- weavers
- musical instrument makers
- paper makers, who made sheets of papyrus
- jewellers.

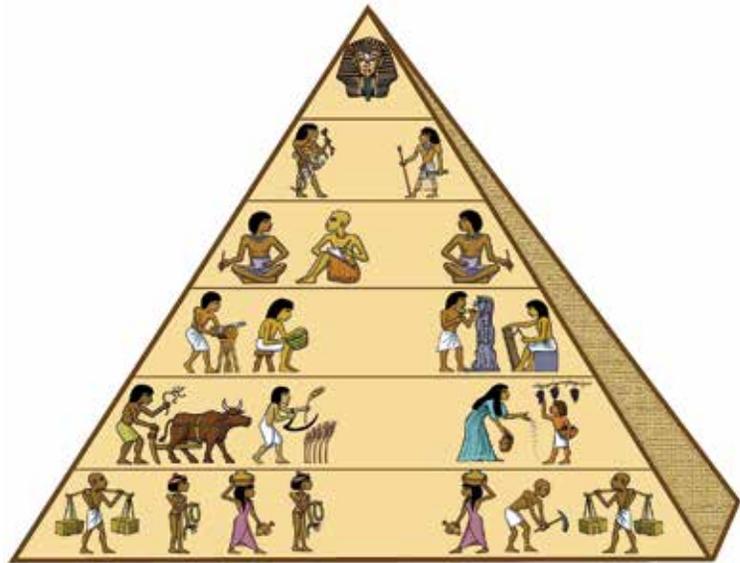
Because money was not used in Egypt until the fourth century BCE, craftsmen were paid in food and beer.

Among the more prosperous commoners were merchants, who conducted trade. Peasants were by far the largest group. They were mostly tenant farmers who worked the land owned by the pharaoh, priests and nobles. Most of what they produced went to their landlords or was paid to the state in taxes. Usually their lives were an unchanging cycle of ploughing, planting, harvesting and other farm work.

SOURCE 2 A scribe sitting with a papyrus on his lap. It took 12 years of study to become a scribe. This statue depicts Nespekasut, a senior scribe of Karnak, in Upper Egypt.

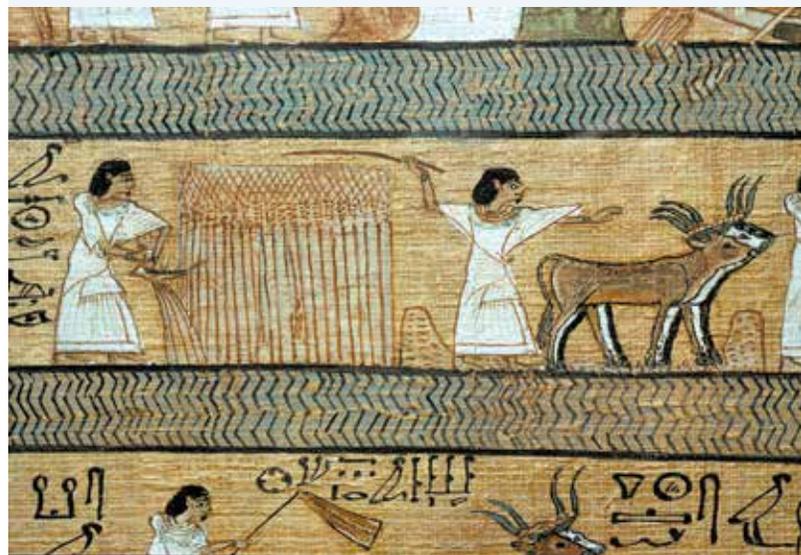


SOURCE 1 A social pyramid showing where each class ranked in ancient Egypt



During the flood they were sometimes expected to labour on the construction of pyramids, temples or other building projects of the pharaoh. There were also many labourers, servants and some slaves.

SOURCE 3 An Egyptian papyrus depicting farming work



16.4.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What was the role of a vizier in ancient Egypt?
2. What were the sources of the power of nobles and priests?
3. Name three types of artisans. Suggest which artisans might have been regarded as most important and why.

Using historical sources as evidence

4. Using Source 1 and other information from this subtopic, identify barriers that existed to moving upwards in ancient Egyptian society and how people lower down the social scale might have felt about such barriers.
5. Look at Source 2.
 - (a) Describe how this scribe is portrayed.
 - (b) Explain how a person may have become a scribe.
 - (c) Imagine that an ordinary family in ancient Egypt had two sons, one of whom became a scribe. Compare and contrast the lives of the two sons.
6. Study Source 3. Describe what is happening in this scene and explain what evidence it provides for the everyday lives of the peasants.

16.4.2 Everyday life

All houses were made of mud bricks, but while nobles lived in great houses, artisans, peasants and labourers lived in simple huts. Their furniture was made of wood and rushes, and they stored food in pottery jars.

SOURCE 4 A painted limestone statue of a woman, called Merseankh, and her husband, Raherka, from about 2500–2350 BCE



From the evidence in sculptures and wall paintings we know quite a lot about people's appearance. Men are depicted wearing tunics or kilts. Women are shown wearing straight dresses (see Source 4). The same sources tell us that Egyptians took part in hunting, enjoyed music and dancing, and played several kinds of board games (see Source 5). Children appear to have been valued and loved; they were seen as the main reason for marriage.

Food and drink

Ordinary Egyptians had simple foods. They ate bread, onions and other vegetables, with occasional fish or meat, and drank beer. The ruling classes, however, enjoyed much more. In the tomb of

SOURCE 5 This ancient Egyptian game box from c. 1400–1200 BCE includes a playing board and a drawer to hold playing pieces.



one noblewoman, archaeologists discovered a meal that was meant for the **afterlife**. It consisted of porridge, fish, pigeon, quails, beef, bread, fruits, berries and cheese, with wines and beer to accompany the meal.

Stories, rituals and festivals

Stories played a big part in people's lives. The Egyptians shared myths about their gods, tales of travel and adventure, and stories designed to teach wisdom. Their religion featured many rituals and festivals. In the villages people worshipped their favourite gods at local shrines. At home, families worshipped at household shrines. In the temples, priests performed rituals. Temples, believed to be the dwellings of gods, were not public places. However, during festivals the ordinary people were permitted to take part in temple rituals. These festivals ranged from local celebrations to national events. Among them was the Festival of Opet, in which sacred barges were towed up the Nile while crowds applauded and danced along the river banks.

DID YOU KNOW?

Ancient Egyptians seasoned their food with salt and sweetened it with honey. Discoveries of children's toys from ancient Egypt include models of animals, dolls with movable legs and arms, leather balls and spinning tops.

16.4.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Explain how the housing of ordinary Egyptians was different from that of the nobles.
2. Describe the differences between the food and drink of ordinary Egyptians and that of the ruling classes.
3. What did Egyptians do for recreation?

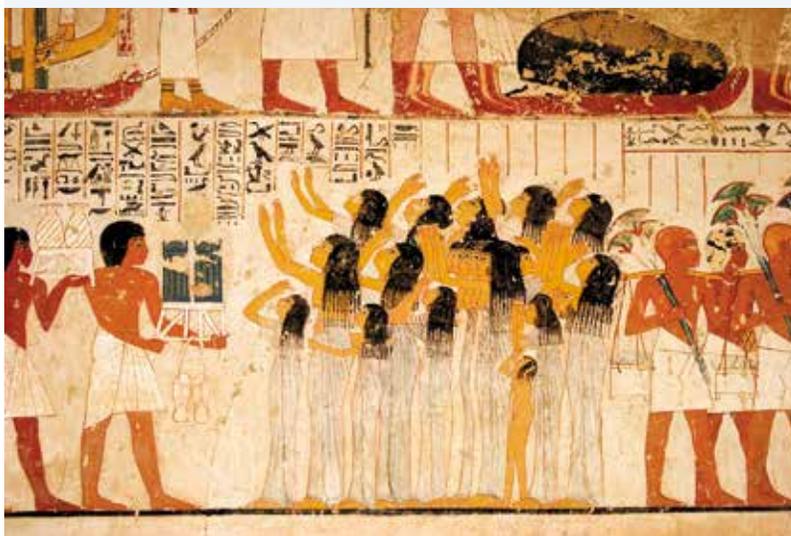
Using historical sources as evidence

4. Look very closely at Source 5.
 - (a) Make up a set of rules that could possibly have been used to play this boardgame.
 - (b) Suggest what Source 5 can tell us about everyday life in ancient Egypt.
 - (c) Evaluate the usefulness of this source as evidence for everyday life in ancient Egypt.

16.4.3 Everyday lives of women in ancient Egypt

Women in ancient Egypt did not have the same rights as men. In all lower-class families, women were responsible for preparing food, including making bread and beer, and caring for children. In peasant families they also worked in the fields. They were usually not taught to read and write. Apart from work as singers, dancers, musicians, servants, nurses and funeral mourners (people paid to weep and wail at funerals), few careers were open to women. Despite this, they had more freedom than in most other ancient societies, where women were treated as the property of men.

SOURCE 6 Mourners painted on the tomb of the vizier Ramoseh



Upper-class women

In Egypt a woman's rank in society depended on her husband's rank, but high status could also be achieved by the mother of a high-ranking son. Wives and daughters of pharaohs and nobles led privileged lives with fine clothes and many servants. By the beginning of the New Kingdom, about 155 BCE, such women could inherit, own and sell property. They could work as part-time priestesses and decide to marry or divorce. However, marriages between wealthy families were often treated as business arrangements and some wealthy men had several wives. Frequently pharaohs married their own sisters but they had other wives as well.

DID YOU KNOW?

Upper-class women in ancient Egypt possessed a great range of cosmetics and jewellery. Items found include pots for holding kohl (eye shadow), hair curlers, hair tweezers, combs, cosmetics boxes, rings, bead necklaces and collars, amulets, and palettes and stones for grinding cosmetics.

SOURCE 7 From a New Kingdom love poem in which the poet expresses his feelings for a woman he has been parted from for a week

She is more to me than the collected writings ...
When I see her, then I am well.
If she opens her eye, my body is young again;
If she speaks, then I am strong again;
When I embrace her, she drives all evil away from me ...
But she has gone forth from me for seven days!

Some upper-class women became high officials. A woman named Nebet became vizier under Pharaoh Pepy I. Another upper-class Egyptian woman who had great influence was Nefertiti. She was the main wife of Pharaoh Akhenaten (ruled c. 1351–1336 BCE). Queens were less important than pharaohs, but images depict Nefertiti as a very beautiful queen who accompanied her husband at ceremonies and on official occasions. Some images even show her in a war chariot.

Hatshepsut — a very significant woman

Only a few queens ever ruled in their own right. The most famous of those who did was Hatshepsut. If a pharaoh died while the heir to his throne was still very young, the highest ranking royal wife could act as regent (someone who rules on behalf of the heir until he is old enough to take the throne). Hatshepsut became regent because when her husband (and brother) Pharaoh Thutmose II died, Thutmose III, the heir to the throne, was only three years old. A few years later she had herself crowned as pharaoh. She ruled Egypt from about 1479 to 1458 BCE and appears to have led Egypt's armies in at least one war.

16.4.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Check your understanding

1. What careers were open to women in ancient Egypt?
2. How much equality did women have with men within:
 - (a) lower class families
 - (b) the upper classes?

Using historical sources as evidence

3. Look closely at the mourners in Source 6.
 - (a) Analyse this source to explain what it can tell us about ancient Egyptian society and women's roles in it.
 - (b) Working with a partner, design a job advertisement for an ancient Egyptian mourner.
 - (c) How do you think Egyptian women might have actually felt about such work?

16.4 Putting it all together

Using historical sources as evidence

1. Using Sources 6 and 7 as your evidence, form a hypothesis about relationships between men and women in ancient Egypt. What other kinds of evidence would you need to support conclusions?
2. It has been estimated that at least 95 per cent of ancient Egyptians were illiterate. This percentage probably included all Egyptians below the rank of scribes. Explain what problems this would pose for historians trying to discover the thoughts and feelings of ordinary Egyptians.

Identifying continuity and change

3. Draw two columns comparing rights and opportunities of women and men in ancient Egypt and identify what each might have done in their everyday lives.

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Complete this digital doc: Worksheet 16.2: The people of Egypt

16.5 Pharaoh rules!

16.5.1 King Narmer and the rise of the pharaohs

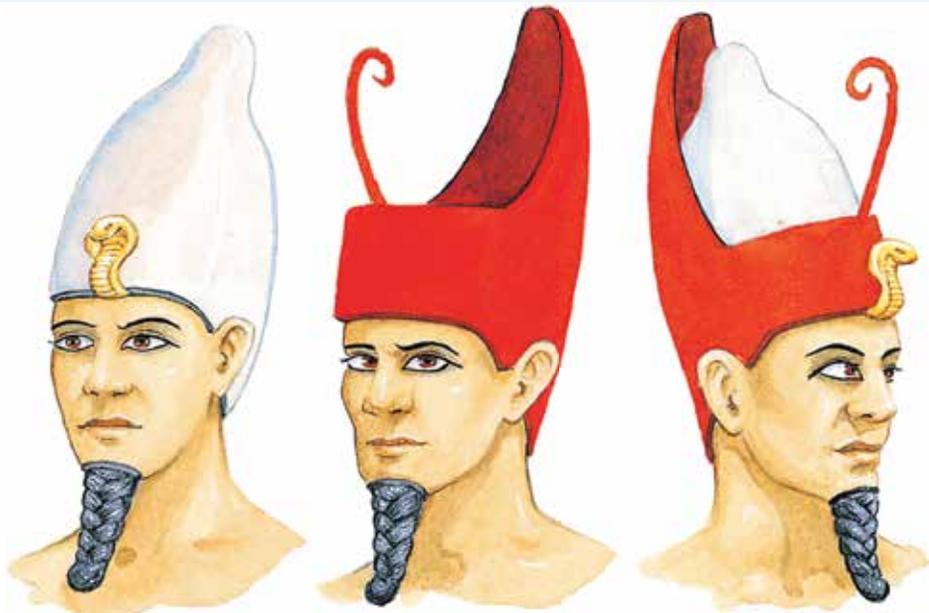
The wealthiest, most powerful person in ancient Egypt was the pharaoh. He had the support of an army and a host of priests, scribes and officials, but the pharaoh alone decided how Egypt would be ruled. The people saw him as a god.

Ancient Egypt was once divided into two kingdoms — Upper Egypt and Lower Egypt. Each was ruled by a king. The king of Lower Egypt had his capital in Buto, and the king of Upper Egypt, in Hierakonpolis. Around 3100 BCE it is thought that these kingdoms were united under King Narmer. He set up his capital in Memphis.

During the next 2700 years, Egypt's history was divided into a number of distinct periods. Three of the more important of these — times when Egypt was united and powerful, with a rich culture — are called the Old Kingdom, the Middle Kingdom and the New Kingdom.

During these three kingdoms, Egypt's rulers (eventually called pharaohs) came from some 30 dynasties. When a pharaoh died, his eldest son became the next pharaoh, unless a man from another family seized control and started a new dynasty. Sometimes the pharaoh's wife or eldest daughter ruled for a time if the eldest son was very young.

SOURCE 1 The king of Upper Egypt wore a white crown, and the king of Lower Egypt, a red crown. Narmer's crown was said to be a mix of both, signifying a united Egypt.



16.5.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Fill in the gaps in this passage.

It is thought that King Narmer united Egypt in _____ BCE and set up a new capital in _____. In Egypt's long history, the three periods called kingdoms were times when the country was _____ and _____.

2. How did someone become a pharaoh?

Sequencing chronology

3. Examine the timeline in the topic opener.

(a) Find the years during which each of the following periods existed: the Old Kingdom, the Middle Kingdom and the New Kingdom.

(b) Explain how the other periods were different to these three kingdoms.

Using historical sources as evidence

4. Explain how and why Narmer's crown (Source 1) combined features of the crowns of Lower Egypt and Upper Egypt.

16.5.2 Power and responsibility

Heavenly powers

The ancient Egyptians saw their pharaoh as a man with supernatural powers. He was believed to descend from the sun god, Amun-Ra, and to have the sky god, Horus, living within him.

Egyptians believed that the laws the pharaoh made applied to the whole universe. They believed he made the Nile River flood and helped the land to produce good harvests. As a mark of respect, they did not call him by his name. Rather, they used the word 'pharaoh', which in ancient Egyptian meant 'great house'.

Earthly responsibilities

The people of ancient Egypt expected their pharaoh to protect and feed them, and to maintain a fair justice system and a peaceful society. He drew up the laws of the land and controlled the government and the army. In artworks, he was often portrayed as a military hero (see Source 3). Exactly what laws the pharaohs made for their people is something for which we have very little evidence. No written code of laws has survived from ancient Egypt. Nor is there any evidence of a system of law courts. Rather, law cases appear to have been judged by officials who had many other responsibilities. He was also in charge of temple building, tax collection, mines, irrigation, trade, important religious ceremonies and the appointment of officials and priests. His huge wealth came from the labour and produce that the people provided as their taxes. Thousands of ordinary people worked the huge farms he owned or helped in the running of his palace. There they worked as cooks, cleaners, dancers, stable workers, craftsmen, weavers and wig-makers.

An obedient, contented society?

Inscriptions and paintings in tombs of pharaohs and officials depict a harmonious society in which ordinary Egyptians worked contentedly in the

SOURCE 2 The power of the pharaoh was evident in his appearance.

For example, he often wore a false beard and a bull's tail (both symbols of pharaonic power), and carried a flail (the symbol of Osiris) and a shepherd's crook (the hieroglyphic sign for a crook meant 'king').



fields or at their skilled crafts under the rule of the pharaoh. It was an image of a stable society in which everyone accepted their place and never questioned those above them. But how realistic was this?

Some text inscribed on pieces of pottery tell a different story. It is the story of the world's first recorded industrial dispute and it took place during the reign of Pharaoh Rameses III. It tells of tomb builders walking off the job of constructing the royal tomb after the officials in charge failed to pay them the food and supplies to which they were entitled.

SOURCE 3 A gold emblem showing Pharaoh Tutankhamen returning from war. This was just one of many priceless objects found in his tomb.



DID YOU KNOW?

Relief carvings show that after battles Egyptian soldiers cut a hand off the body of each dead enemy. These were then heaped into piles, counted by scribes and included in the records to glorify the pharaoh's victories.

SOURCE 4 An ancient scribe's record of the strike of workers employed to construct and decorate the tomb of Rameses III

[The] gang walked out [of the tomb] because they were hungry; there is no wood, no vegetables, no fish. So they went to consult the magistrate ... who declared, '[the people of the Tomb]' are in the right.

16.5.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. In what ways did ancient Egyptians associate their pharaoh with gods?
2. What was the source of the pharaoh's wealth?
3. Create a mind map to outline the powers and responsibilities of a pharaoh.

16.5 Putting it all together

Using historical sources as evidence

1. Explain what conclusions you can draw from Sources 1, 2 and 3 about the way that pharaohs wanted to be seen and thought of by their people.
2. Use the internet to locate images of some of the treasures of the pharaohs. Several museums hold such objects and you can view them online. Present two images to the class as a data show with an explanation of their importance in representing the power of pharaohs.

Identifying continuity and change

3. Analyse Source 4 using the following questions.
 - (a) For what event does this source provide evidence?
 - (b) What were the grievances of the striking tomb workers?
 - (c) How do you think the workers regarded the pharaoh's officials who were responsible for paying them?
 - (d) How does this source contradict the image in other ancient sources of an unchanging, contented society?

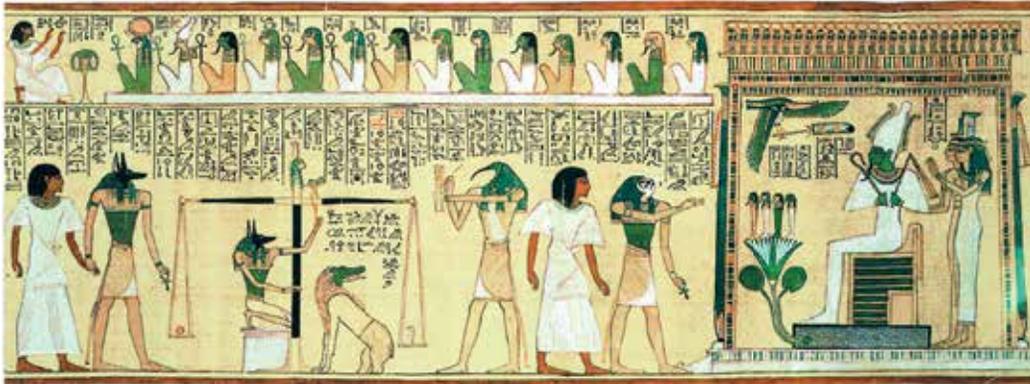
16.6 Gods and the afterlife

16.6.1 The journey to the afterlife

Death was a very important event for ancient Egyptians. It connected life on Earth with life ever after, so a lot of effort was spent preparing for it. This focus on death has been very valuable for historians, because most of what we know about ancient Egypt comes from what has been found in tombs. Many of the **deities** of ancient Egypt, whether good or bad, played a role in a person's journey to the afterlife.

The ancient Egyptians believed the next world was a fantastic place. However, it was a long way away, and reaching it was not easy. First, the dead person had to cross a wide river. Then he or she had to chant secret spells to get through seven gates guarded by fierce monsters, all the while looking out for traps set by evil gods and attacks by savage crocodiles and venomous snakes. Then the dead person's heart was weighed on scales against a feather to see if it was 'heavy with sin'. Forty-two judges decided the outcome.

SOURCE 1 Scenes from the *Book of the Dead of Hunefer*, which dates from around 1310 BCE. It is painted on papyrus. The Egyptians made books of the dead to protect their owners from the perils of the journey to the afterlife. If a heart was found to be 'as light as a feather', its owner joined the god Osiris in the afterlife. If heavy, it was chewed up by a monster god that was a cross between a lion or cheetah, a hippopotamus and a crocodile.



Preparing for the journey of the soul

The ancient Egyptians believed that a dead person had a number of souls. Two of these were the *ka* and the *ba*. The *ka*, the person's life force, stayed within the tomb, getting strength from the food and drink left there. The *ba*, the person's character, set off on its journey towards the afterlife, returning to the tomb to rest each night. To do these things, the soul needed a body. So dead people's bodies were carefully preserved, or embalmed, so they did not rot. An embalmed body is called a mummy.

Mummies were buried with lots of the possessions the person's soul might need in the afterlife. They included food and drink, clothing, perfume, furniture, jewellery and special charms called **amulets**. Sometimes small wooden or stone figures representing servants doing things such as making bread, ploughing a field or sailing a ship were placed in tombs. As well, prayers, hymns and magic spells from the 200 such texts in the *Book of the Dead* were often written on a scroll of

SOURCE 2 The figurines were thought to come to life in the tomb and carry out the wishes of the dead person.



papyrus and buried with the mummy or carved in hieroglyphs on the walls of the tomb. These texts were thought to protect the soul from evil and guide it through the afterlife.

After a dead person's body was mummified, a funeral ceremony was held. The body was carried in a boat across the Nile and buried on the western bank, where the sun set. This was the direction in which the next world was believed to lie. Important people such as pharaohs were buried in elaborate underground tombs consisting of many rooms and tunnels. Poorer people were buried in the hot, dry sands to help preserve their bodies.

16.6.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

- Beginning with 'Step 1: The dead person's body was embalmed', list in chronological order each step it was believed an ancient Egyptian had to take to reach the afterlife.
- Explain why ancient Egyptians made books of the dead.
- What was the difference between the ka and the ba?
- Why were mummies buried with possessions?

Using historical sources as evidence

- Analyse Source 1 using the following questions.
 - The figure on the far left is the dead person. Which of the steps you listed in answering question 1 is shown in this source?
 - What is the god with the jackal's head weighing on his scales?
 - Why is he doing this?
 - According to ancient Egyptian beliefs, will this dead person's soul be allowed to enter the next world?
- Explain why the figurines in Source 2 would have been placed in a tomb.

16.6.2 The gods of the ancient Egyptians

There were many deities in ancient Egypt, each looking after some particular area of people's lives. For example, the god Hopi was responsible for the Nile River. Some gods were portrayed as humans and some as animals. Others were a mixture of both — usually animal heads on human bodies.



Name of god	Responsibility	Associated animal or symbol
Amun-Ra	God of creation; god of the sun and king of the gods	The sun
Osiris	God of the dead; god of the afterlife; a judge in the underworld	Pharaoh mummy
Seth	God of confusion and chaos	Hippopotamus
Isis	Mother goddess; goddess of fertility; wife of Osiris	Woman wearing a throne as a crown
Horus	God of the sky; guardian of the pharaoh	Falcon
Hathor	Goddess of beauty and love; goddess of the sky	Woman with cow horns on her head
Thoth	God of the scribes; god of wisdom and knowledge; god of time	Man having the head of an ibis
Anubis	God of embalming; god of tombs and burials	Man having the head of a jackal

SOURCE 3 Herodotus observed how important cats were to the ancient Egyptians. They were thought to protect people's homes. It is no wonder they were chosen as one of the animals to be associated with a god.

What happens when a house catches fire is most extraordinary: nobody takes the least trouble to put it out, for it is only the cats that matter; everyone stands in a row, a little distance from his neighbour, trying to protect the cats, who nevertheless slip through the line, or jump over it, and hurl themselves into the flames. This causes the Egyptians deep distress. All the inmates of a house where a cat has died a natural death shave their eyebrows ...



16.6.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Which Egyptian deity (god) was linked to each of these animals: jackal, hippopotamus, falcon, ibis?
2. In what ways were the gods Anubis and Osiris particularly important in the journey to the afterlife?

Using historical sources as evidence

3. According to Herodotus, Source 3, how did ancient Egyptians regard cats? Why might they have been associated with the gods?

16.6 Putting it all together

Identifying continuity and change

1. Using the sources and other information in this subtopic, identify the main differences between ideas about gods and life after death in ancient Egyptian religion and in any one of the religions that have large followings in the modern world.

Analysing cause and effect

2. Explain how beliefs about the gods and the afterlife could have contributed to making ordinary Egyptians content with their position in society.

16.7 Mummies unwrapped

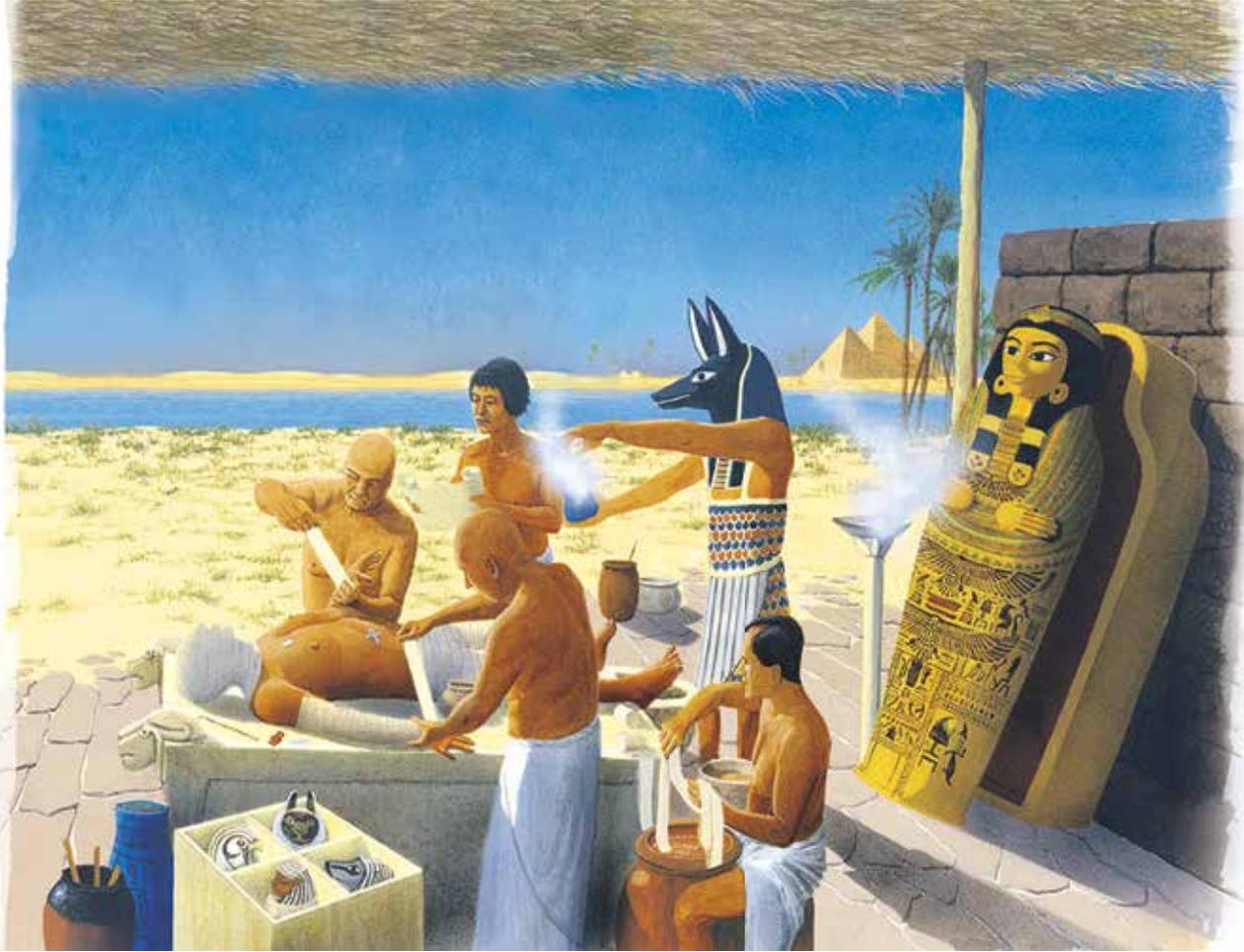
16.7.1 Dead mummies do tell tales!

The art and hieroglyphs found on the tomb walls of ancient Egyptians, and the mummies made of their dead bodies, have told historians a lot about the way of life of the ancient Egyptians.

At first, all ancient Egyptians buried their dead in the hot desert sands. However, in time wealthier Egyptians, especially pharaohs, began to build elaborate tombs. They would also mummify bodies so their souls would always have a 'home' to rest in, and be able to 'eat and drink'.

Mummies allow us to have some idea of what famous pharaohs looked like. Scientists and historians can also find out details such as their age, their body shape, whether they had had children, what diseases and health problems they suffered — even, sometimes, what they died of. Researchers have found, for example, that cancer was probably rare or non-existent in ancient Egypt. On the other hand, broken and worn teeth were very common because of their crunching on sand grit and hard pieces of corn that were mixed up in bread.

SOURCE 1 Instructions to a priest for preparing a mummy



Step 1 Have your jackal mask ready so you can dress up as the god Anubis. Learn the prayers and magic spells from the *Book of the Dead*. You will need to chant these over the dead body as you work.

Step 2 Wash the dead body with water or palm wine.

Step 3 Use a long hook to pull out the brains through the left nostril. Throw them away.

Step 4 Cut open the left side of the stomach and remove the liver, lungs, intestines and stomach. Don't remove the heart as it contains the personality.

Step 5 Cover the internal organs with **natron** to absorb all moisture. Rub the dried organs with oils and resin and wrap them in linen bandages. Then push them into **canopic jars**. Make sure you put each organ in the right jar.

Step 6 Cover the body with natron for 40 days to dry it out. Then rub the dried skin with palm oils and ointments. Pack the stomach cavity with perfumed linen and sew up the wound.

Step 7 Place a magic charm over the stomach wound and a scarab (beetle-shaped charm) over

the heart. Then wrap the body with linen bandages dipped in gum. Wrap every part separately. You will need about 370 square metres of linen. Wrap amulets and magic charms such as ankhs (☩) in with the bandages. The dead person's soul will need these during its journey to the Kingdom of sirus.

Step 8 Place a mask made from linen and glue over the person's head and shoulders. If you have time, paint this or cover it in gold leaf. Also place a panel across the top part of the body, decorated with protective magic symbols and drawings.

Step 9 Place the wrapped mummy in a body-shaped coffin that has been decorated with jewels, paintings and inscriptions of spells. Paint the coffin so it looks a bit like the person when he or she was alive. Be flattering!

Step 10 Tell the relatives the mummy and the canopic jars are ready for burial. Your chief priest will need to accompany the funeral procession to the tomb so he can conduct the ceremony to open the mummy's mouth. The person's soul needs to talk in the afterlife. Remember, the professional mourners will be noisy!

SOURCE 2 The mummy of a six-year-old Egyptian boy



16.7.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Write the sentences hidden in the table below by correctly matching the phrases in the left and right columns.

A mummy is	to assist the journey of the dead person's soul.
Natron is	to store organs that were removed from the body.
Bodies were mummified	a body that has been preserved by drying and wrapping.
Canopic jars were used	so that their souls would have a place to rest in.
Magic charms were wrapped in with the bandages	a mineral salt used to dry out dead bodies.

2. What have historians learned about ancient Egyptians by studying mummies?

Using historical sources as evidence

3. Study Source 2.

- As the body of this boy is thousands of years old, what do you think would remain of it had it not been mummified?
- Which dating technique could be used to tell how old it is?
- What might you conclude about the social rank of the boy's family from the fact that his face is painted with gold?
- Explain what else his mummified body might be able to tell us about beliefs, values and practices associated with death and funerary customs in ancient Egypt.

16.7 Putting it all together

Using historical sources as evidence

1. Referring to Sources 1 and 2, give a brief explanation of what examining mummified bodies could tell us about differences between the social classes in ancient Egypt.

Identifying continuity and change

2. Using the sources and other information in this subtopic, discuss as a class:
- why preserving bodies was so important to ancient Egyptians
 - the similarities and differences between burial practices and ideas about death in ancient Egypt and the modern world.

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Complete this digital doc: Worksheet 16.3: Millions of mummies

16.8 Write like an Egyptian

16.8.1 Unlocking the mystery of hieroglyphs

The ancient Egyptians used writing over 5000 years ago, possibly as early as 3100 BCE. At first they used simple drawings and symbols to represent each word. They wrote on stone, pottery and paper, which they made from papyrus reeds. When the Greeks came to Egypt in the fourth century BCE and saw this writing on temple walls they called the symbols hieroglyphs, which meant ‘sacred writing’.

Around the fourth century CE, the secret of reading hieroglyphs was lost and it remained lost for centuries. But in 1799, a French soldier discovered a large black stone at the Egyptian town of Rosetta (now called Rashid). The stone had a written message carved in three different scripts. The scripts were: ancient Egyptian hieroglyphs; a later simplified form of hieroglyphs known as demotic; and, very importantly, ancient Greek, which could still be read and understood. So the ‘Rosetta stone’, as it became known, made it possible to unlock the mystery of hieroglyphs. Thanks to many years spent by Thomas Young, who was an English scientist, and a Frenchman named Jean François Champollion, the code was broken.

Scholars could now read the many records that the ancient Egyptians had written. These included the king lists, which were kept by priests and listed the pharaohs and how long they had reigned, as well as myths, legends, hymns, medical and legal documents, and even graffiti.

SOURCE 1 The Rosetta Stone — interpretation of its hieroglyphs allowed scholars to learn much about ancient Egypt.



16.8.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Approximately how long ago was writing first used in Egypt?
2. What is the meaning of the Greek word ‘hieroglyph’?

Using historical sources as evidence

3. Look closely at Source 1. Describe the feature of the Rosetta Stone that made it possible to unlock the mystery of hieroglyphs.

16.8.2 Writing and reading in ancient Egypt

The hieroglyphic ‘alphabet’ was much larger than ours — it was made up of more than 700 symbols. Some of these were simple drawings, such as a bird, and others were shapes, such as a semicircle. At first, each symbol stood for a word. As the language became more complex, some symbols came also to stand for other language elements besides single words, such as:

- the sound of a consonant (for example, the symbol for an owl also stood for the sound of the letter *m*)
- the sound of a syllable (for example, the symbol for a board game also stood for the sound of the letters *men*)

- ideas or actions (for example, the symbol for a leg shown twice stood for the idea of movement)
- signals to help the reader understand what was meant. A signal might be put at the end of a word so readers knew it had a different meaning from another of the same symbol. (If we used this technique today, we might place a sketch of a bus at the end of the word ‘trip’ to show that it meant ‘a journey’ and not ‘to fall over’.)

Reading hieroglyphs

At first, hieroglyphic symbols were laid out in columns. People read down each column, from top to bottom. From about 2000 BCE, the symbols were arranged in rows, more like our writing. Sometimes they were read from left to right (as we read) and other times from right to left. So that the reader knew where to start, a symbol of a person, animal or bird was put at the start or end of the line. The direction in which the symbol faced marked the start of a line. So, if a bird faced right, you would read the line from right to left.

Sometimes a symbol was placed above another, rather than to the side of it. In this event, the symbol on top was read first.

The name of a pharaoh was always enclosed in a cartouche — a bullet-shaped oval.

Simpler forms

Hieroglyphs were used mainly for religious purposes and in official documents. Priests and scribes could write and read using the system. This is why they can be found in tombs. But hieroglyphs took a lot of time to produce, so simpler, faster scripts were developed. Two other scripts — hieratic script (Source 3) and **demotic script** — were used by ordinary people. Both these scripts used hieroglyphic symbols but in simpler forms.

Writing classes

Only boys were taught to read and write. At first they scratched messages on broken pieces of limestone and pottery. Once they could write, they used sheets of papyrus as paper and sharpened bits of reeds as pens. Their inks were solid blocks of powdered minerals, in different colours, which they mixed with water.

SOURCE 2 Translators have been able to link hieroglyphic symbols with most of the letters of our alphabet.

Symbols for single sounds

a		b		c, k		d		e, y	
f		g		h		i		j	
l		m		n		o		p	
q		r		s		t		u	
w		x		z		th		sh	

Symbols for syllables

neb		ankh		mer		mes	
su		sha		ka		men	

SOURCE 3 This papyrus sheet shows an Egyptian high priest presenting an offering to Osiris, the god of the afterlife. It contains both the hieroglyphic script (circled) and the simpler **hieratic script** (left and centre).



16.8.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. The first hieroglyphic symbols stood for complete words. How and why did that change?
2. How were boys taught to write?

Using historical sources as evidence

3. Look closely at Source 3. Which of the two scripts looks most like modern writing?

16.8 Putting it all together

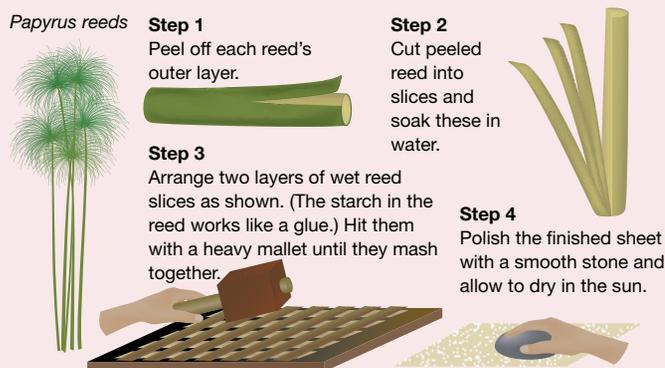
Using historical sources as evidence

1. Use Source 2 to decode this message.



2. Work in small teams to make a sheet of 'papyrus', using Source 4 as a reference. Cut a sheet of thick blotting paper (or similar) into strips. Spray strips with a starch solution until they are wet but not sodden. Then lay them in two crossing layers and beat them together. (Place a sheet of lightly oiled greaseproof paper underneath so the paper can be removed once dry.) Polish the beaten sheet with a stone. Then pin down the corners (to stop curling) and place it in the sun to dry.
3. Use the piece of 'papyrus' you have made and the hieroglyphic symbols in Source 2 to create a message for other members of the class to translate. Put these on the display board.

SOURCE 4 How the ancient Egyptians used the stalk of the papyrus reed to make paper



Identifying continuity and change

4. Explain why ancient Egyptians gradually developed scripts that were more like modern writing than the earlier hieroglyphs.

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Complete these digital docs: Worksheet 16.4: Flow chart, Worksheet 16.5: The warrior king

16.9 Pyramid builders

16.9.1 Pyramids and hidden tombs

Built about 4500 years ago, the 80 or so pyramids in Egypt are the oldest human-made structures in the world. Of these, the famous three at Giza, near Cairo, are the most impressive. Their construction is an amazing feat of technology. Yet no-one knows for sure how they were built. The ancient Egyptians had only simple tools made of stone, wood and bronze. They had no cranes, computers, rock cutters or heavy earth-moving equipment.

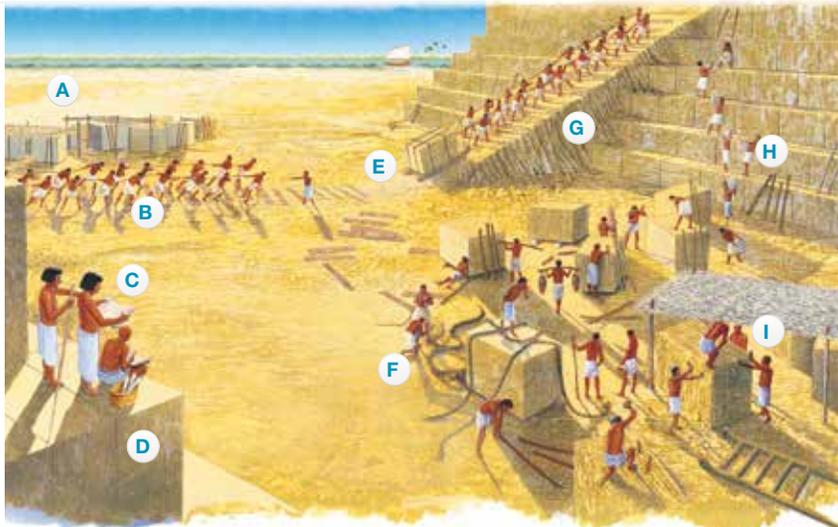
From about 2500 BCE, the mummies and treasures of important people such as pharaohs were usually entombed in pyramids. This practice lasted only about 500 years, however, because robbers were a major

SOURCE 1 The pyramids at Giza in Egypt are the only remaining ‘wonder’ of the Seven Wonders of the Ancient World.

- A** Between 200 and 300 granite blocks would have been set in place every day.
- B** It is thought the workmen might have dragged the blocks over soft sand on wooden sleds. On harder surfaces, the blocks may have been moved on top of rolling logs.
- C** Architects and other overseers controlled different aspects of the work, using scribes to document details. Skilled craftsmen included stonemasons and carpenters.

D The sides of the pyramids once had an outer layer of polished white limestone. Most of this was later taken down and used to decorate buildings in Cairo.

F Historians think that around 100 000 men (never slaves) would have worked full time for about 20 years to build the Great Pyramid.



E Some of the granite blocks are thought to have been cut from rock faces in Aswan, and the limestone from quarries to the east. Both are likely to have reached the site via barges on the Nile River.

- G** Huge sand ramps may have been erected to drag blocks up to higher levels.
- H** The blocks were cut so cleanly that a knife blade can barely be pushed in between them. Blocks may have been cut by driving wooden stakes into the stone and wetting them. As the stakes expanded, they would have split the rock.
- I** Workers made sure the edges of blocks were square.

problem. Thereafter, tombs for such people were dug into mounds and cliffs in the **Valley of the Kings**. But even these were not completely safe. Over time, they were all raided, except one — the tomb of the pharaoh Tutankhamen.

The **Great Pyramid** at Giza, built around 2550 BCE, was the tomb of the pharaoh Khufu. The other two were built for his son Khafre and grandson Menkure. The Great Pyramid, the biggest of the three, is close to 150 metres high and contains around 2 300 000 granite blocks, each of which weighs around 2.5 tonnes.

Pyramid mysteries

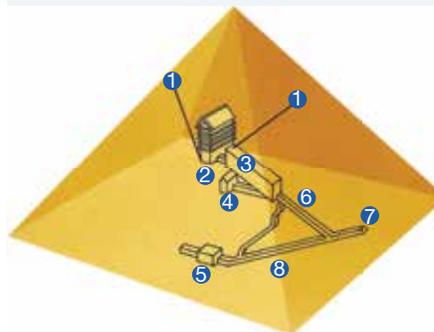
Some say the technology of the pyramids is so astonishing that they must have been built by an alien intelligence.

Another view is that those who built the pyramids at Giza, and the **Great Sphinx** that guards them, used knowledge and skills passed down from a very old but highly advanced civilisation that existed long before the Old Kingdom in Egypt. But archaeologists and historians prefer more scientific explanations.

Heavenly sails

One treasure the robbers missed in the Great Pyramid was a 43-metre-long boat, built to carry Khufu to the afterlife. It was not found until 1954. It had been broken into 1224 pieces before being packed into a rock cavity near the base of the pyramid. The cavity was so tightly sealed that when archaeologists broke into it they could still smell the cedar oil in the wood — after 4500 years!

SOURCE 2 Inside the Great Pyramid



- 1 Air shafts
- 2 Pharaoh's burial chamber
- 3 Grand gallery
- 4 Queen's chamber
- 5 False chamber
- 6 Ascending corridor
- 7 Entrance
- 8 Descending corridor

16.9.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe the tools and equipment used by ancient Egyptian pyramid builders.
2. Explain why the pharaohs stopped building pyramids after 500 years and switched to tombs dug into cliffs and mounds in the Valley of the Kings.

Using historical sources as evidence

3. Source 1 shows the steps involved in the building of a pyramid. Select three of these steps and explain what tools and equipment would be needed by the workers in order to do their job.
4. Study Source 2. Imagine that you are an ancient Egyptian who is planning to rob Khufu's tomb. Write a note to our accomplice explaining how to get into the pharaoh's burial chamber and what to look out for.

16.9 Putting it all together

Using historical sources as evidence

1. Use the internet to conduct research on the Giza pyramids. Prepare a short report on your findings. Include appropriate images.

Identifying continuity and change

2. Imagine that you are a worker on the pyramid who had access to two pieces of modern equipment. Explain what modern equipment you would use and how that would change your task.

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Complete this digital doc: Worksheet 16.6: Pyramid builders

16.10 Tutankhamen, Akhenaten and Nefertiti

16.10.1 An archaeologist's dream

The discovery of the tomb of Tutankhamen was the key archaeological event of the twentieth century — but not because of the man or the size of his tomb. Tutankhamen was still a teenager when he died and the tomb had only four chambers. It was important because its contents were untouched. More than 5000 objects were found, some of them priceless. We can only imagine what might have been found in the large tombs of more famous pharaohs if they had not been robbed.

In 1922 the British archaeologist Howard Carter found the tomb of Tutankhamen. He had looked for it for years in the Valley of the Kings without success. Then he decided to dig up an area around some old workers' huts. To his excitement, a step was uncovered, carved into the rock. More digging revealed the sealed entrance to a passageway that carried the seal of Tutankhamen. Yet more digging to remove the tonnes of rubble in the passageway revealed the stone door to the tomb.

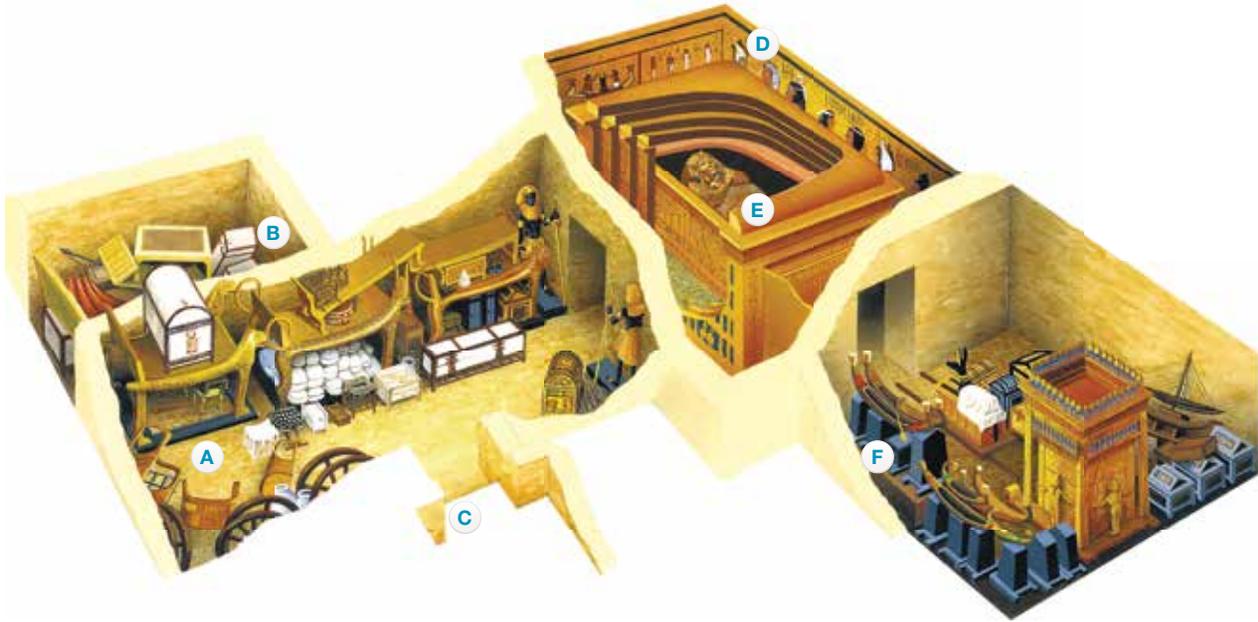
A hole was cut in the door and Carter inserted a lit candle into the darkness behind. He later said: 'At first I could see nothing ... But presently, as my eyes grew accustomed to the light, details of the room emerged slowly from the mist, strange animals, statues and gold — everywhere the glint of gold'.

SOURCE 1 The discovery of Tutankhamen's tomb was described in the *Illustrated London News* of 9 December 1922 as 'the most sensational Egyptological discovery of the century'.

A The antechamber, the first chamber Carter entered, contained about 700 pieces of furniture including stools, beds and gold couches with animal heads, chairs, a chariot (in bits) and two black and gold life-size statues either side of the entrance. There were also jars of oil, lamps, vases, musical instruments, board games and clothing.

B This side chamber contained about 600 items, including pieces of wooden furniture, baskets of food, jars of wine and oil.

C About 200 000 tonnes of rubble had to be removed from this passageway to reach Tutankhamen's tomb.



D Inside the gold-covered burial chamber, some five metres long and 3.5 metres wide, were three other decorated chambers, each inside the other. The inner one was a stone **sarcophagus**, carved with Tutankhamen's name. Inside this were three elaborately decorated body-shaped coffins. The inner one, made of 1 100 kilograms of gold, contained Tutankhamen's **mummy**.

E The face and shoulders of Tutankhamen's mummy were covered with a mask of solid gold. It was decorated with blue glass and semi-precious stones such as turquoise and lapis lazuli.

F The treasury chamber contained the pharaoh's treasures. In it was the gold-lined shrine holding the canopic jars. Inside these jars were the pharaoh's mummified internal organs. The chamber also contained gold statues including one of the god Anubis (who guarded the treasures), as well as boats, weapons, a golden throne and chests of jewellery.

16.10.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why was Tutankhamen's tomb such a rare and significant discovery?
2. How did Howard Carter find Tutankhamen's tomb?
3. Explain the meaning of the following concepts and terms: burial chamber, treasury chamber, sarcophagus.

Using historical sources as evidence

4. Using Source 1, identify and select one of the types of items that were found in each of: the antechamber, the side chamber, the burial chamber, the treasury chamber. Explain what archaeologists and historians might discover about life in ancient Egypt from each of your four chosen items.

16.10.2 A new mystery?

The last significant pharaoh before Tutankhamen was Akhenaten, who became pharaoh in about 1353 BCE, under the name Amenhotep IV. In the fifth year of his reign he appears to have initiated a religious revolution in Egypt. He erected a new temple to the sun disk god Aten, changed his name to Akhenaten, meaning 'he who serves Aten' and decreed that in place of the many ancient gods of Egypt the people must worship only the Aten. Images of Akhenaten and many traces of the new religion were deliberately destroyed after his death.

Akhenaten's first wife was Nefertiti. She was depicted as a very elegant and beautiful woman in a limestone bust dated c. 1340 BCE (see Source 4) and in many images worshipping Aten with her husband.

Tutankhamen was married to the third daughter of Akhenaten and Nefertiti, and was only about nine years old when he became pharaoh in about 1336 BCE. Under Tutankhamen, Egypt made a complete return to the traditional gods. In inscriptions he was referred to as the good ruler who restored 'what was ruined'. He died aged just 19 leaving no heir to the throne. The head of his mummy is shown in Source 2. As revealed in Source 5, it now appears that Tutankhamen might not have been alone in his tomb.

SOURCE 2 Head of the 19-year-old pharaoh Tutankhamen



SOURCE 4 A limestone bust of Nefertiti. It is dated c. 1340 BCE and is held in the Egyptian Museum Berlin.



SOURCE 3 Translated inscription Tutankhamen had carved into a stone column, marking a return to the worship of many gods

I found the temples fallen into ruin, with their holy places overthrown and their courts overgrown with weeds. I reconstructed their sanctuaries, I endowed the temples and made them gifts of all precious things. I cast statues of the gods in gold and electrum, decorated with lapis lazuli and all fine stones.

SOURCE 5 'Egypt's Queen Nefertiti may lie concealed in Tutankhamun's tomb, say archaeologists', ABC News, 5 October 2015

High resolution scans indicate that Queen Nefertiti is buried behind one or two hidden chambers in King Tutankhamun's underground tomb, a British archaeologist says.

...

Dr Nicholas Reeves, from the University of Arizona, has been using radar and thermal imaging technology to examine Tutankhamun's tomb ...

He told a news conference in Cairo that he believes Tutankhamun's mausoleum was originally occupied by Nefertiti.

...

His theory is that Nefertiti has lain undisturbed behind what he believes is a partition wall for more than 3,000 years.

The archaeologist believes the boy king, who died unexpectedly at 19, was buried in a rush in an underground burial chamber that was probably not intended for him.

16.10.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Who were Akhenaten and Nefertiti?
2. What big change did Akhenaten bring to Egyptian society and religion?

Using historical sources as evidence

3. Where (see Source 1) was Tutankhamen's head (Source 2) found?
4. Read Tutankhamen's inscription in Source 3.
 - (a) Who caused Egyptian religion to change before Tutankhamen's reign?
 - (b) How would you account for the temples having 'fallen into ruin'?
 - (c) Describe the effect of Tutankhamen's reign on Egyptian religion and explain why Tutankhamen might have found it necessary to undertake the works referred to here.
5. Describe the way that Nefertiti is portrayed in Source 4, the limestone bust.

16.10 Putting it all together

Using historical sources as evidence

1. Look again at Source 1 and read Source 5.
 - (a) What was Dr Reeves's hypothesis about Nefertiti and Tutankhamen's tomb?
 - (b) Where in Source 1 do you think the partition wall and hidden chambers could possibly be?
2. What evidence did Reeves offer to support his hypothesis?
3. Reeves's theory was immediately criticised by other archaeologists. What does this tell you about contestability in history?

Identifying continuity and change

4. Work in small groups.
 - (a) Discuss and explore the way the people of ancient Egypt might have felt about Akhenaten's religious changes.
 - (b) Explain why we have no real evidence of what ordinary Egyptians thought about these changes.
5. Based on what you now know about religious issues from the reign of Akhenaten to the death of Tutankhamen, write a paragraph explaining what we can conclude about change and continuity in this period of ancient Egyptian history.

Determining historical significance

6. Write a letter that Howard Carter could have written to his family in England the day after he saw the contents of Tutankhamen's tomb by candlelight, explaining the historical significance of what he found.

16.11 Expansion and fall

16.11.1 From the Old Kingdom to the New Kingdom

Throughout history all empires have been created by force and all have eventually fallen. There were periods in Egypt's long history when it suffered from **civil wars** and invasions. There were also times of strong governments that drove invaders out of the land and took control of other countries (see the timeline in subtopic 16.1).

One of the worst times was the First Intermediate Period. The collapse of the Old Kingdom was followed by a century of bloodshed as nobles fought each other for control of the country. This made it easy for foreigners to move into the Nile Delta.

Contacts and conflicts

Egypt's relations with other countries involved trade as well as war. Egypt traded with the Phoenicians and others to the north but its most important trade was with Nubia to the south. Egypt traded beer, wine, cheese, oil, linen and tools for Nubian copper, gold, jewels, ebony, ivory, exotic animals and slaves (see Source 1). Yet Egypt was also often in conflict with Nubia. During the Middle Kingdom, it took part of Nubia and built forts to control the routes to its gold mines. Around the same time Egypt attacked the Libyans and other desert tribes to its north.

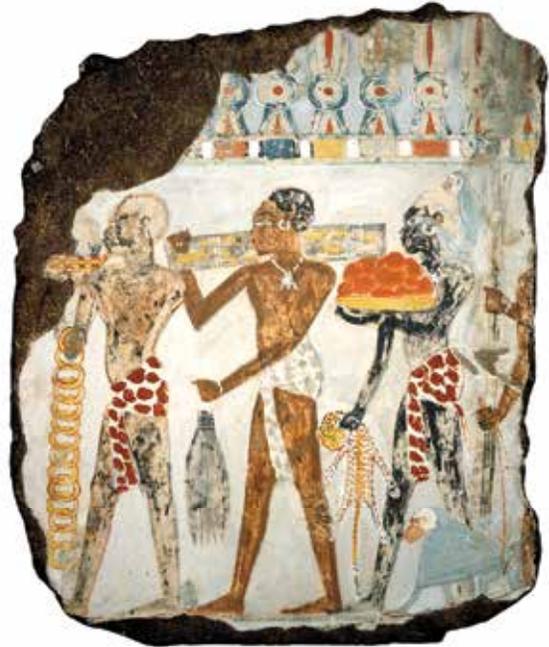
DID YOU KNOW?

Egypt's army was at first made up mostly of peasants called up whenever needed. By New Kingdom times Egypt had a permanent army with chariots, archers and infantry armed with spears, battle axes, swords and daggers. It appears also to have included conscripted prisoners of war and foreign **mercenaries**.

Wars of the New Kingdom

Egypt was again weak in the Second Intermediate Period when the Hyksos invaded from the north-east. This time was followed by the New Kingdom, the time of Egypt's greatest power. At the start of this period, the armies of Pharaoh Ahmose defeated the Hyksos who had occupied Egypt. Ahmose also regained control of northern Nubia. In the fifteenth century BCE, Egypt defeated a coalition of **Asiatic** princes at the Battle of Megido. The territory occupied by modern Israel, Lebanon and Syria became part of the Egyptian

SOURCE 1 A scene on a wall of the tomb of Sobekhotep. It shows Africans, probably Nubians, carrying ebony logs, leopard skins, gold rings, giraffe tails and a live baboon.



SOURCE 2 Wooden models of Egyptian soldiers of the Middle Kingdom in four columns



Empire. Later pharaohs fought against the Hittites to keep control of these lands. In these wars Egypt plundered its defeated enemies and gained more wealth from the tribute (treasure, slaves and livestock) that had to be paid by conquered rulers.

myWorldHistoryAtlas

Deepen and check your understanding of this topic with the following resources and auto-marked questions:

- Egypt – the Old Kingdom
- Egypt – the Middle Kingdom
- Egypt – the New Kingdom

16.11.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why were foreigners able to invade Egypt's Nile Delta during the First Intermediate period?
2. During which times was Egypt strongest and weakest?
3. List the lands that Egypt controlled during its strongest period?

Using historical sources as evidence

4. Analyse Source 1.
 - (a) Describe the details in the source.
 - (b) Make a list of the things the Africans, probably Nubians, are carrying.
 - (c) Outline what Source 1 can probably tell us about Egypt's trade with Nubia.
5. Study the models of soldiers in Source 2 and use it as your evidence for a brief written description of Egyptian Middle Kingdom infantry.

16.11.2 Decline and fall

Egypt became weaker after the time of Rameses II. Libyans and 'Peoples of the Sea' invaded the Nile Delta. These invaders were defeated many times (see Source 3) but gradually Egypt lost its unity and its empire. The priests came to control Upper Egypt, while Lower Egypt was ruled by princes. In the Late Dynastic Period the country fell under the control of Nubians. In about 663 BCE the Assyrians took most of Egypt into their empire. Bronze Age Egypt had no iron ore and could not match the Assyrians' iron weapons. Later Egypt fell under the rule of the Persians, followed by the Greeks and then the Romans.

SOURCE 3 From an inscription in the temple of Pharaoh Rameses III at Thebes describing a victory over the 'Peoples of the Sea', in about 1188 BCE

Year 8 under the majesty of [Rameses III] ... foreign countries made a conspiracy. No land could stand before their arms ... they were coming forward toward Egypt ... I have the river mouths prepared like a strong wall, with warships, galleys and coaster ... The troops consisted of every picked man of Egypt. They were like lions ... The chariotry consisted ... of every good and capable chariot-warrior. Those who reached my frontier ... were dragged in, enclosed on the beach, killed and made into heaps ...

16.11.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Name the groups who invaded Egypt after the time of the New Kingdom Pharaoh Rameses II.
2. Why was Egypt unable to match the military might of the Assyrians?

Sequencing chronology

3. Identify the groups that dominated Egypt during the Late Dynastic Period and afterwards and list them in chronological order.

Using historical sources as evidence

4. Analyse the inscription of Rameses III in Source 3.
 - (a) Describe its style.
 - (b) Suggest why it would be written in such a style.
 - (c) Imagine that you are a high ranking official in the time of Rameses III. In the style of Source 3, write a message congratulating the Pharaoh on his victory.

16.11 Putting it all together

Identifying continuity and change

1. Explain how Egypt's lack of Iron Age materials could have contributed to its decline and eventual collapse.

Analysing cause and effect

2. Using all three sources as your evidence, examine and write a short explanation of the roles played by war and trade in Egypt's rise and decline. In your answer, you could describe Egypt's changing relations with Nubia and explain why Egypt fought other peoples, how wars enriched Egypt during the New Kingdom and why Egypt eventually declined and collapsed.

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Complete this digital doc: Worksheet 16.7: Timeline exercise

16.12 Rameses II — Egypt's greatest pharaoh?

16.12.1 Who was Rameses II?

You have already encountered several rulers of ancient Egypt. They include: Narmer, the first pharaoh of both Upper Egypt and Lower Egypt (see subtopic 16.5 Pharaoh rules!); Khufu, for whom the Great Pyramid was built (see subtopic 16.9 Pyramid builders); Hatshepsut, the most famous of Egypt's queens (see subtopic 16.4 The people of Egypt); and Tutankhamen, who became famous because his tomb was discovered with its contents untouched (see subtopic 16.10 Tutankhamen, Akhenaten and Nefertiti). However, many historians have regarded Rameses II, who ruled Egypt between c. 1279 and 1212 BCE, as the greatest of all pharaohs.

SOURCE 1 The head of the colossal statue of Rameses II at the Temple of Luxor in central Egypt



Rameses II (sometimes spelled *Ramses* and *Ramesses*) was probably born about 1303 BCE. He was a son of King Seti I. Rameses was in his early twenties when he became Egypt's ruler. He held that position for longer than any other pharaoh. Because of his military campaigns and building projects, including temples and cities, he became known as Rameses the Great.

The warrior king

In about 1278 BCE, Rameses' navy defeated the sea pirates who had been attacking Egyptian trading ships in the Mediterranean Sea. Rameses commanded an army of possibly 100000 men. He gained fame through many battles in which Egypt fought the Hittite Empire to its north and the Nubians to its south. During these campaigns, Rameses' forces repelled invasions, regained territories Egypt had lost under previous pharaohs and secured Egypt's borders.

16.12.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Name three groups of enemies defeated under Rameses II.
2. Why did he come to be known as Rameses the Great?

Using historical sources as evidence

3. Study Source 1. Describe the impression of Rameses II that is conveyed by this colossal head and explain why he would have wanted to be portrayed this way.

16.12.2 Fighting the Hittites

Over 20 years, from about 1277 BCE, Rameses led a series of campaigns against the Hittite Empire. In the first campaign, Rameses defeated several Palestinian princes and captured Amurra, a **vassal state** of the Hittite Empire in Syria.

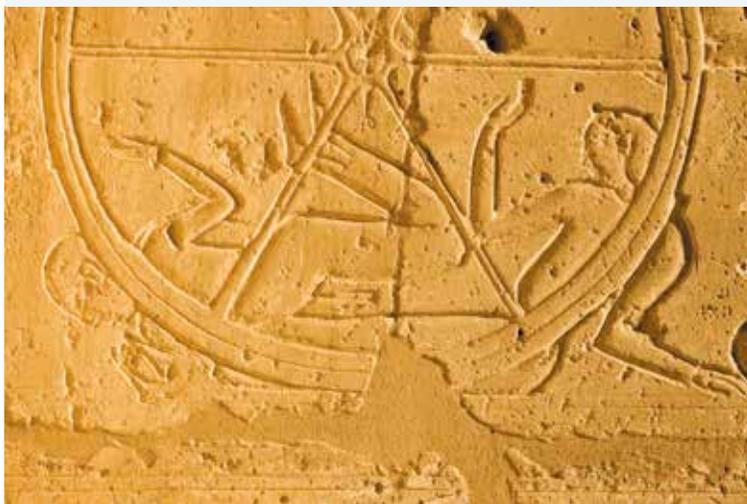
In the following year, Rameses led his armies to attack the Hittite-controlled city of Kadesh. His army had four divisions, with Rameses personally leading the Amun division. However, the waiting Hittite army ambushed another Egyptian division as it was crossing a river, causing the soldiers to flee. According to Egyptian records, in the ensuing battle, Rameses found himself isolated from his forces but, almost single-handed, he defeated an overwhelming Hittite force, killing vast numbers as he escaped (see Source 3). Although the Battle of Kadesh was a **stalemate** and the Hittites remained in Syria, Rameses declared the battle a great Egyptian victory.

In later campaigns, spread between the seventh and twenty-first years of his reign, Rameses captured Hittite territory. But neither side was able to win a decisive victory and, in about 1258 BCE, the conflict ended with a peace treaty.

Great ruler or great bragger?

Historians have a vast number of primary sources about Rameses' achievements because, more than any other pharaoh, he was a great builder of monuments

SOURCE 2 This relief sculpture in Luxor shows Hittite soldiers being crushed under the wheels of Rameses II's chariot at the Battle of Kadesh.

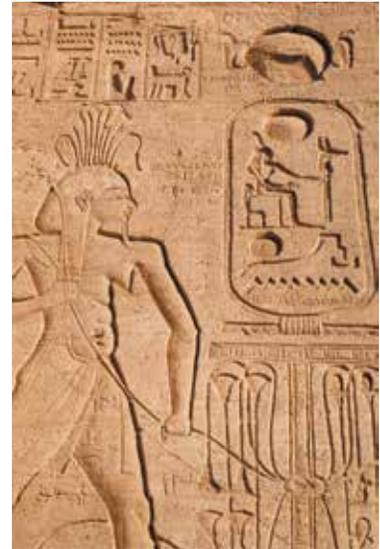


SOURCE 3 From a poem inscribed by order of Rameses II on the walls of five temples to commemorate his victory at Kadesh

In the midst of many peoples, all unknown,
Unnumbered as the sand,
Here I stand,
All alone;
There is no one at my side;
My warriors and chariots afeared [frightened],
Have deserted me ...
... Two thousand and five hundred pairs of horses were around,
And I flew into the middle of their ring,
By my horse-hoofs they were dashed all in pieces to the ground ...

that glorified his deeds. Enormous numbers of huge statues were constructed, portraying him as a handsome, smiling and powerful ruler. At his temple at Abu Simbel, each of the four statues of Rameses II carved out of the face of a cliff is almost 20 metres tall. Records of his exploits, including scenes of him crushing the Hittites, were engraved deeply on monuments and temples throughout Egypt. So great was his reputation that nine future pharaohs took his name.

SOURCE 4 Rameses II in a detail from sculptures and hieroglyphs on his temple at Abu Simbel



DID YOU KNOW?

During the 1960s, an international operation was conducted to save the temple at Abu Simbel and its statues. The entire site was carefully cut into sections and moved to higher ground. This was done to save it from being submerged beneath the rising water behind Egypt's new Aswan High Dam.

16.12.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Who did Rameses II's forces fight at the Battle of Kadesh?
2. Was the Battle of Kadesh really an Egyptian victory?
3. How did the conflict with the Hittites end in 1258 BCE?

Sequencing chronology

4. Place the main events of Rameses II's life on a timeline.

16.12 Putting it all together

Using historical sources as evidence

1. Look at Source 2 and read Source 3.
 - (a) According to Source 2, what happened to Hittite soldiers at the Battle of Kadesh?
 - (b) According to Source 3, why were Rameses II's soldiers not at his side, how many enemies did he face and how did he defeat them?
 - (c) Are Source 2 and Source 3 conflicting or supporting evidence?
 - (d) Are these sources reliable or unreliable? Give reasons for your answer.
 - (e) How might the soldiers who fought for Rameses II have felt about what was inscribed in Source 3?
2. Using Sources 3 and 4, describe how Rameses II wished to be remembered.
3. What problems for historians are created by the fact that all four sources in this subtopic and most other primary sources about Rameses II were produced on his orders?

Determining historical significance

4. Using evidence from all sources in this subtopic evaluate the significance of Rameses II in a response of at least one page to the following question: Which is more likely — that Rameses II was significant as a great leader or as a great bragger?
5. Use the internet to find other images and inscriptions of Rameses II. Do they support the conclusion you drew in your answer to question 4 or lead you to question it?

16.13 Egypt's heritage

16.13.1 The greatest legacies

The ancient Egyptian civilisation lasted for thousands of years. The Egyptians discovered how to make paper. They created a unique writing system, invented a calendar similar to the one used today and produced a system of mathematics that enabled them to make complicated calculations. Yet very little of ancient Egypt's culture has been handed down. In modern Egypt, nearly all people follow the religions of Islam or Christianity rather than the ancient beliefs of the land, and there is no connection between the arts, society and systems of government of modern and ancient Egypt.

Egypt's greatest legacies to modern times are its archaeological wonders, especially its pyramids, tombs and temples, which have amazed generations. In the past, many of Egypt's archaeological treasures were taken to other lands, where they ended up in museums or private collections. There has been much debate about whether they should rightfully be returned to Egypt. Whatever happens in the future, we can be sure that people will continue to be fascinated by such artefacts, especially the many mummies that are displayed in museums throughout the world.

SOURCE 1 Pyramids at Giza. The Great Pyramid of Khufu towers above the others.



SOURCE 2 The painted wood coffin of Pharaoh Rameses IV (1153–1147 BCE)



Ongoing discoveries

Egypt continues to yield up fascinating discoveries. In 1999 archaeologists discovered a tomb complex thought to contain thousands of mummies from the time when Egypt was ruled by Greeks and Romans. This was seen as proof that these conquerors adopted much of Egypt's culture. In 2008

another group of archaeologists discovered the ruins of a city from the time of Egypt's first New Stone Age farmers. Ancient Egypt has yet to reveal all its secrets.

SOURCE 3 'Ruins of 7000-year-old city found in Egypt oasis', AFP, 2008

A team of US archaeologists has discovered the ruins of a city dating back to the period of the first farmers 7000 years ago in Egypt's Fayyum oasis, the supreme council of antiquities said.

'An electro-magnetic survey revealed the existence in the Karanis region of a network of walls and roads similar to those constructed during the Greco-Roman period,' the council's chief, Zahi Hawwas, said.

The remnants of the city are 'still buried beneath the sand and the details of this discovery will be revealed in due course,' Mr Hawwas said.

'The artefacts consist of the remains of walls and houses in terracotta or dressed limestone as well as a large quantity of pottery and the foundations of ovens and grain stores,' he added.

The remains date back to the Neolithic period between 5200 and 4500 BCE.

The local director of antiquities, Ahmed Abdel Alim, said the site was just seven kilometres from Fayyum lake and would probably have lain at the water's edge at the time it was inhabited.

SOURCE 4 The mummy of Katebet, a woman of wealth and high status who died around 1300 BCE



16.13.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. How has Egypt's culture changed since ancient times?
2. What are ancient Egypt's greatest legacies?

16.13 Putting it all together

Using historical sources as evidence

1. Why do mummies and coffins like those in Sources 2 and 4 continue to fascinate people?
2. On Katebet's mummy, below the image of painted arms are, from top to bottom, a winged goddess, a scarab, an image of Anubis and a shabti figurine. Use the knowledge you have gained from this topic and your library to explain the significance of at least two of these.
3. How would the appearance of the Great Pyramid (as illustrated in Source 1) have been different in ancient times from the way it appears today? (*Hint:* Refer back to subtopic 16.9 Pyramid builders.)

Identifying continuity and change

4. Explain how the discoveries in Egypt's Fayyum Oasis (see Source 3) provide further evidence of continuity of ancient Egypt's civilisation.

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Complete this digital doc: Worksheet 16.8: Legacy

16.14 SkillBuilder: Analysing and corroborating sources

online only

What are the main ancient Egyptian primary sources?

Ancient Egyptian primary sources include pyramids, tombs, temples, mummies, coffins, art and written records on stone and papyrus.

Go online to access:

- an explanation of the skill (Tell me)
- a step-by-step process to develop the skill, with an example (Show me)
- an activity to allow you to practise the skill (Let me do it)
- questions to test your application of the skill (Applying skills).



16.15 Review

online only

This final subtopic provides a range of opportunities for you to review and respond through:

- (i) revising and checking your historical knowledge
- (ii) demonstrating your ability to apply historical concepts and skills.

Go online to access:

- a key chronology of events relevant to the topic
- a summary of the key knowledge presented in the topic
- a 'Big Questions' activity
- a multiple choice topic test
- short answer or extended writing responses.

learn on RESOURCES — ONLINE ONLY

 Try out this interactivity: Ancient Egypt timeline (int-2936)

 Complete these digital docs: Worksheet 16.9: Crossword, Worksheet 16.10: Summing up

16.14 SkillBuilder: Analysing and corroborating sources

16.14.1 Tell me

What are the main ancient Egyptian primary sources?

Primary sources from ancient Egypt include pyramids, tombs, temples, mummies, coffins and written records on stone and papyrus. They also include art such as models, statues and the paintings that decorated papyrus, coffins, canopic jars and the walls of tombs and temples.

Why is it important to analyse and corroborate ancient Egyptian primary sources?

It is important to analyse and **corroborate** ancient Egyptian primary sources because almost all of our knowledge about ancient Egypt comes from primary sources. Works of art, in particular, tell us much about the lives of Egypt's rulers. Some also provide evidence about ordinary Egyptians. Some show peasants and labourers working in the fields, artisans busy at their trades and women grinding grain, weaving cloth and brewing beer.

16.14.2 Show me

How do we analyse and corroborate ancient Egyptian primary sources?

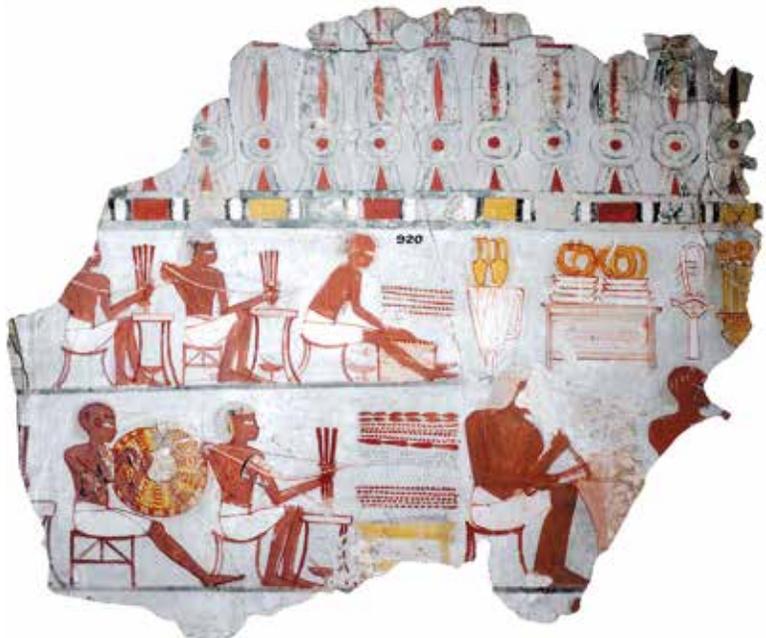
When you study a primary source you need to think carefully about the clues it provides and ask questions about its accuracy, usefulness and reliability. You need to ask questions such as:

1. What is it?
2. Who created it and when was it created?
3. Who or what was it created for?
4. For what aspect of ancient Egyptian history does it provide useful evidence?
5. Is the evidence it provides accurate and reliable and how can we tell this?
6. What conclusions can we draw from the source about ancient Egyptian society?

These questions have been applied to Source 1.

1. *What is it?* It is a scene from a wall panel in a tomb.
2. *Who created it and when was it created?* We cannot know the name of the artist/s who created it but we do know that it was created around 1419 to 1386 BCE.
3. *Who or what was it created for?* It was painted to decorate the tomb of an Egyptian official named Sobekhotep.
4. *For what aspect of ancient Egyptian history does it provide useful evidence?* It provides evidence that ancient Egyptian craftspeople included talented artists such as those who created this scene. It shows Egyptian craftsmen manufacturing jewellery so it provides useful evidence for such work. Therefore, it would be very useful for any study of the skills and methods of Egyptians who worked in such crafts.

SOURCE 1 A fragment of a scene on a wall panel in the tomb of Sobekhotep, a senior Egyptian treasury official during the reign of Thutmose IV (c. 1419-1386 BCE)

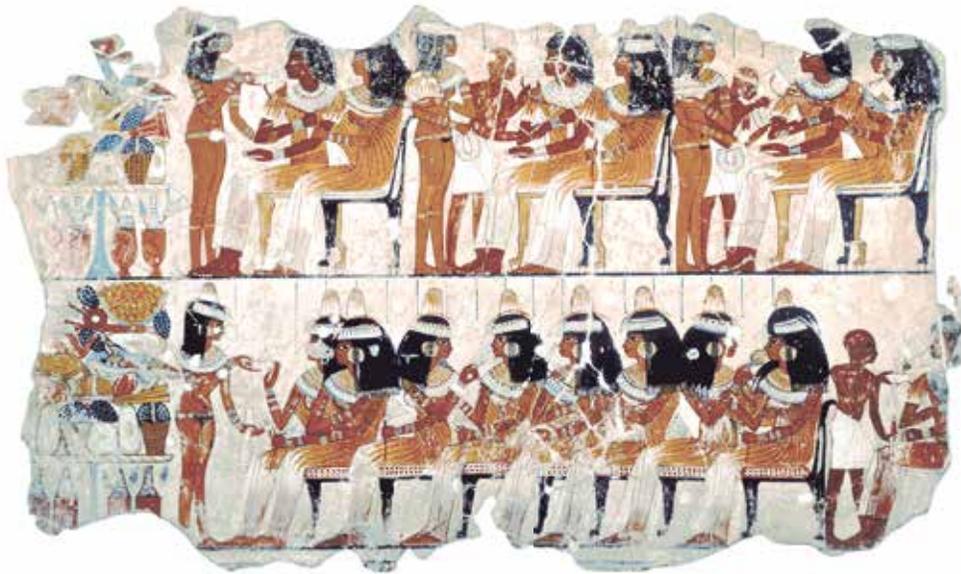


5. *Is the evidence it provides accurate and reliable and how can we tell this?* We might assume that the artists who depicted such scenes based them on what they saw in Egypt. However, to test the accuracy and reliability of this source we would need to compare it with other artworks and written manuscripts that describe the same kinds of work.
6. *What conclusions can we draw from Source 1 about ancient Egyptian society?* We could conclude that crafts like manufacturing jewellery were highly organised with specialised workers in factory-type workshops. This meant that agriculture produced a surplus that freed such workers from the need to produce food. There must also have been a privileged class that consumed the luxury products of the workshops. Probably there was also foreign trade in these products.

16.14.3 Let me do it

Use the six questions to interpret Source 2 as evidence for the lives of the people of ancient Egypt.

SOURCE 2 A fragment of a painting in the tomb of Nebamun. It was made around 1350 BCE and shows a banquet scene divided into two registers (levels).



16.14 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Using historical sources as evidence

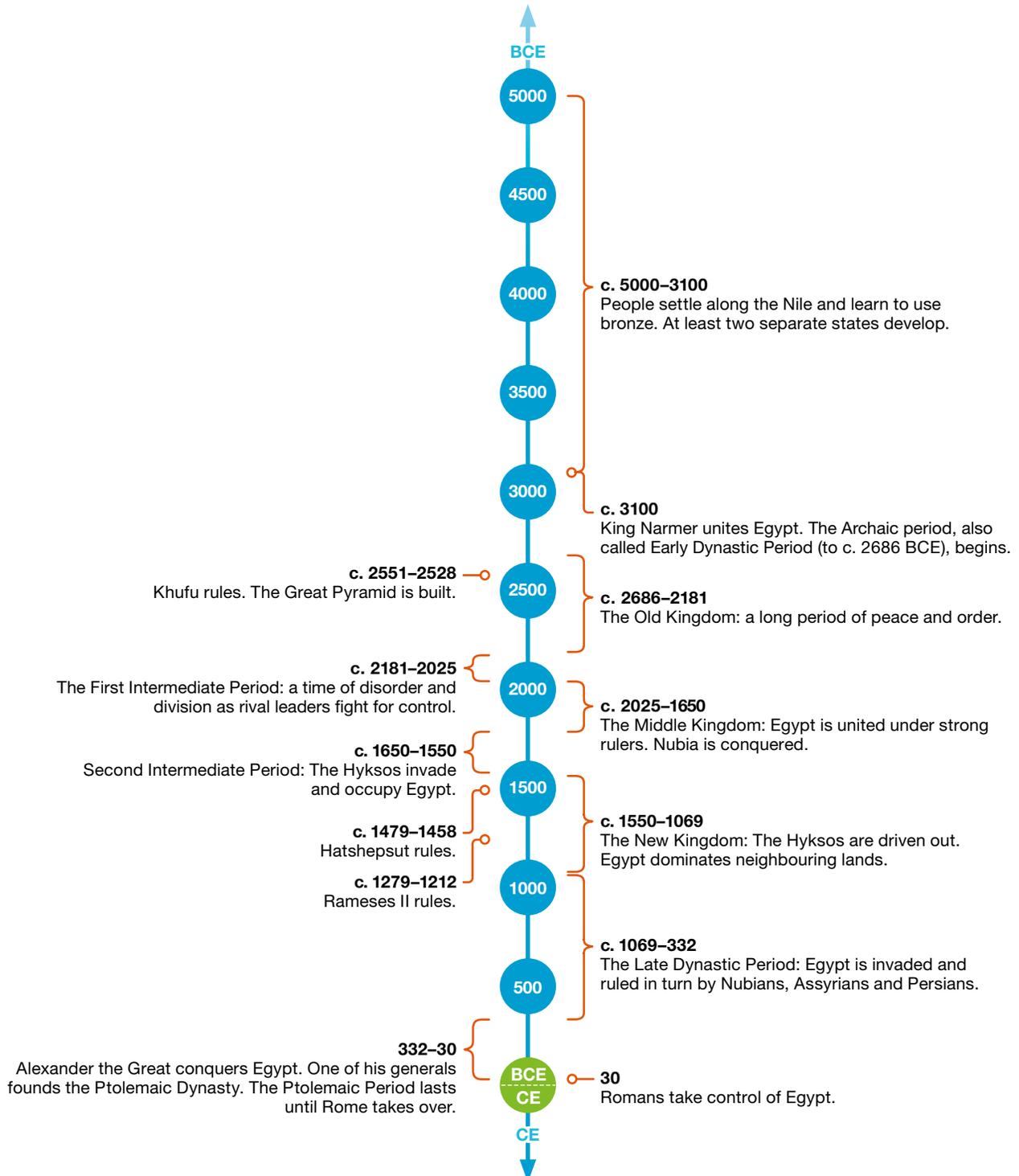
1. Using your answers to the questions on Sources 1 and 2, write a brief general statement about work and social life in ancient Egypt.
2. Explain how you would differentiate between primary and secondary sources for ancient Egypt.
3. In this SkillBuilder you have worked with paintings from wall panels in tombs. Identify five other types of primary sources that a historian could use for a study of ancient Egypt.
4. Explain why it is sometimes difficult to identify the origin and purpose of ancient Egyptian primary sources.

16.15 Review

In this topic we have explored the fascinating history of ancient Egypt, about which so much has been discovered while so much more awaits discovery. We learned about the importance of the Nile for Egypt's civilisation, about the people of Egypt from pharaohs to peasants, Egyptian beliefs about gods and an afterlife, and much more.

16.15.1 Review

Chronology: Timeline of ancient Egypt



Key knowledge: Summary

16.2 Examining the evidence

- Pyramids, temples, tombs, mummies and artworks such as tomb wall paintings, models and statues provide a huge amount of archaeological evidence.
- Scholars are able to read ancient Egyptian written primary sources since the code for hieroglyphs was broken.

16.3 The gift of the Nile

- Civilisation could never have developed in Egypt without the Nile.
- The annual flooding of the Nile provided fertile soil for farming.

16.4 The people of Egypt

- Egyptian society was layered like a pyramid.
- Most ordinary people were peasants but others were engaged in a variety of skilled occupations.
- Women had fewer rights than men but more rights than women in most other ancient societies.

16.5 Pharaoh rules!

- Pharaohs came from some 30 dynasties over ancient Egypt's long history.
- Pharaohs were believed to have god-like powers but also had vast responsibilities.

16.6 Gods and the afterlife

- Ancient Egyptians had many different gods.
- They believed in an afterlife and buried possessions they might need in that afterlife.
- Burial customs have provided most of our evidence for ancient Egypt.

16.7 Mummies unwrapped

- Mummification was carried out to preserve bodies so that a dead person's soul would have a home.
- Mummification was a complex process that was carried out with great care wherever possible.

16.8 Write like an Egyptian

- The ancient Egyptians were probably the first people to use writing after the Sumerians.
- Early hieroglyphs took a long time to produce so the Egyptians developed simpler, faster scripts.

16.9 Pyramid builders

- During the Old Kingdom, pyramids were built to house the mummies of pharaohs.
- The Egyptians built them with tools made of stone, wood and bronze.
- Because the contents of the pyramids were robbed, later pharaohs were entombed in the Valley of the Kings.

16.10 Tutankhamen, Akhenaten and Nefertiti

- Tutankhamen's tomb is very significant because, unlike tombs of greater pharaohs, its contents had not been robbed.
- Before Tutankhamen's reign, Akhenaten carried out a religious revolution, decreeing that Egyptians must worship only Aten, above all other gods.
- Nefertiti was Akhenaten's first wife and a woman of great influence in ancient Egypt.

16.11 Expansion and fall

- Egypt's relations with other countries involved trade and war.
- During times of strength, Egypt drove out invaders and dominated other lands.
- During times of weakness and division, Egypt suffered invasions.

16.12 Rameses II – Egypt's greatest pharaoh?

- Rameses II has been regarded as Egypt's greatest pharaoh because of his military achievements and the monuments glorifying him.
- His greatness is contestable mainly because the evidence of it was constructed on his orders.

16.13 Egypt's heritage

- Archaeological treasures are Egypt's greatest legacies.
- There is ongoing archaeological work in Egypt and significant discoveries are continually being made.

Key knowledge: Multiple-choice topic test

1. In Egypt the Inundation was which of the following?
 - (a) A temple
 - (b) An annual period of flooding
 - (c) A bucket used for irrigation
 - (d) A writing tool
2. The Nile is formed by the joining of which two rivers?
 - (a) The Murray and Darling
 - (b) Green Nile and Yellow Nile
 - (c) Red Nile and Black Nile
 - (d) White Nile and Blue Nile
3. After the pharaoh, the next most powerful official was:
 - (a) the president.
 - (b) the prime minister.
 - (c) the vizier.
 - (d) the lord high executioner.
4. Skilled artisans in ancient Egypt included:
 - (a) peasants and slaves.
 - (b) stone masons and paper makers.
 - (c) scribes.
 - (d) nobles and priests.
5. Which of the following women ruled Egypt as pharaoh from 1479 to 1458 BCE?
 - (a) Nefertiti
 - (b) Cleopatra
 - (c) Hatshepsut
 - (d) Neber
6. The Great Pyramid was built during which of these periods of ancient Egyptian history?
 - (a) The Old Kingdom
 - (b) The First Intermediate Period
 - (c) The Middle Kingdom
 - (d) The Second Intermediate Period
7. In ancient Egypt, a woman's social rank depended on the rank of which of these?
 - (a) Her mother and father
 - (b) Her brother or sister
 - (c) Her cousins
 - (d) Her husband or son
8. Which of the following gods were associated with death, tombs and the afterlife?
 - (a) Seth and Horus
 - (b) Osiris and Anubis
 - (c) Isis and Hathor
 - (d) Amun-Ra and Thoth
9. When a body was mummified, where were most internal organs stored?
 - (a) Refrigerators
 - (b) Cupboards
 - (c) Cellars
 - (d) Canopic jars
10. The tomb of Tutankhamen was a significant archaeological find because:
 - (a) Tutankhamen was a powerful pharaoh.
 - (b) the tomb was enormous.
 - (c) it was the only royal tomb that had not been robbed.
 - (d) there was a curse on the tomb.

11. Which two groups did New Kingdom Egypt have wars with?

- (a) Hyksos and Hittites
- (b) Greeks and Persians
- (c) Romans and Assyrians
- (d) Phoenicians and Israelites

12. Which two groups did Egypt trade with?

- (a) Peoples of the Sea
- (b) Nubians and Phoenicians
- (c) Sumerians and Babylonians
- (d) Chinese and Indians

16.15.2 Respond

Using historical sources as evidence

1. Look closely at Source 1. During the time of the Roman Empire this obelisk was taken from Egypt and placed in a public area in Constantinople (now Istanbul).

- (a) Referring to the symbols in subtopic 16.8, see if you can identify some of the hieroglyphs.
- (b) What does the transporting of this enormous obelisk from Egypt to Constantinople suggest about Roman attitudes to Egyptian culture?

2. In subtopic 16.4 you read about Hatshepsut, who became regent of Egypt following the death of her husband, Thutmose II (who was also her half-brother). Hatshepsut was able to rule as regent because the heir, Thutmose III, was only three years old. But instead of handing over to the heir, Hatshepsut had herself crowned as pharaoh.

Use the internet and your library to find out more about Hatshepsut. Look particularly for images of her mortuary temple, which has nearly 200 statues and carvings glorifying her achievements. One inscription in the temple states that her father, Thutmose I, appointed her as his successor and ordered his subjects to obey her. Hatshepsut also claimed to be the daughter of the god Amun-Ra.

Using the information you have found, in about one page of writing:

- (a) identify the difficulties that would be faced by a woman trying to achieve such a position in ancient Egyptian society
- (b) explain why Hatshepsut would have found it necessary to make claims involving her father and a god to support her right to the throne
- (c) evaluate her right to be considered a most significant individual in the history of ancient Egypt.

SOURCE 1 A section of a huge Egyptian obelisk engraved in neat hieroglyphs



Responding to the big questions

At the beginning of this topic several big questions were posed. Use the knowledge and understanding you have gained through your study of the subtopics to answer them:

1. How did ancient Egypt's natural environment influence its civilisation?
2. How was ancient Egypt organised and ruled?
3. What was the influence in ancient Egypt of religious ideas and beliefs about an afterlife?
4. What can ancient sources tell us about life in ancient Egypt?
5. What are the legacies of ancient Egypt?

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 Try out this interactivity: Ancient Egypt timeline (int-2936)

 Complete these digital docs: Worksheet 16.9: Crossword, Worksheet 16.10: Summing up

TOPIC 17

Ancient Greece

17.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

17.1.1 Links with our times

In 2004 the Summer Olympic Games, officially known as the XXVIII Olympiad (28th Olympiad), were held in Athens, the capital of modern Greece. The image shows the Australian Olympic team at the opening ceremony of the Athens Olympics. Its motto, *Welcome Home*, was chosen because Greece was the birthplace of the Olympics. According to Greek tradition, the first ancient Greek Olympics were staged in 776 BCE. As we will see in this topic, the Olympics are far from being our only legacy from Greece. Greeks have settled in many places, bringing their culture with them. More people of Greek descent live in Melbourne than in any city except Athens. Much more importantly, many ancient Greek ideas were handed down to the present through other cultures. Ancient Greek influences are all around us.



Big questions

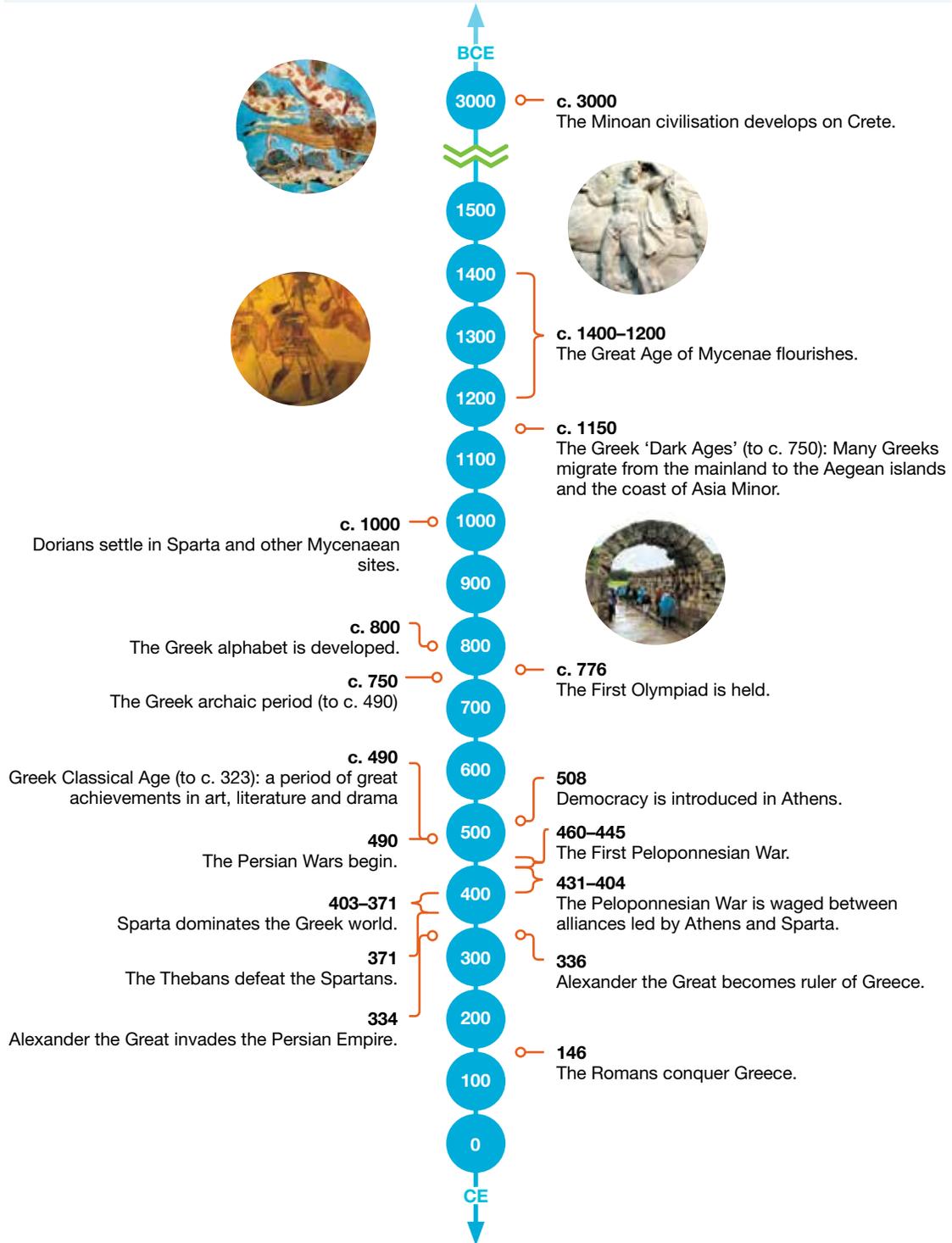
As you work through this topic, look for information that will help you to answer these questions:

1. How did the environment of ancient Greece influence its civilisation?
2. How were ancient Greek societies organised and ruled?
3. What were the main beliefs, values and cultural achievements of the ancient Greeks?
4. What conflicts took place within Greece and between Greek city-states and other societies?
5. What can ancient sources tell us about life in ancient Greece?
6. What have been the legacies of ancient Greece?

Starter questions

1. What can you see in the picture from the Athens 2004 Olympics that would not have existed in the ancient Greek Olympics?
2. In what ways do you think immigrants from Greece have influenced Australia?
3. The ancient Greeks were very interested in geometry. Can you think of one of their ideas that we still use in geometry?
4. What do you think 'democracy' means?

A timeline of ancient Greece



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Watch this eLesson: Ancient Greece (eles-1836)



Complete this digital doc: Worksheet 17.1: Timeline exercise

17.2 Examining the evidence

17.2.1 How do we know about Ancient Greece?

Every year millions of people visit Greece to marvel at the many surviving traces of its ancient civilisation. These include the shells of magnificent buildings such as the Parthenon and Erechtheion on the **Acropolis** of Athens, and the National Archaeological Museum, which holds the world's largest collection of ancient Greek artefacts. They also visit the extensive ruins of the original Olympic games at Olympia and other sites such as the god Poseidon's temple at Sounion and the sanctuary at Delphi, which the ancient Greeks called the 'navel of the Earth'. There are also great collections of Greek art in other parts of the world, including the famous Parthenon Marbles, which were taken from the Parthenon by the British diplomat Lord Elgin more than two hundred years ago and are now displayed in the British Museum in London.

SOURCE 1 Some of the many marble sculptures that once adorned the Parthenon in ancient Athens



SOURCE 2 Mycenaean soldiers painted on pottery. Mycenae was the earliest civilisation on the Greek mainland.



SOURCE 3 A theatre mask used in performances of plays in ancient Athens. Beside the mask you can see the excavated remains of an ancient Greek amphitheatre in Aphrodisias on the Turkish coast. It was in open-air theatres like this that ancient Greek actors performed wearing such masks.



Written sources

The Greeks also left many written records. Ancient Greek writers are still read today. Among the best known are the works of the epic poet Homer, the historians Herodotus (c. 484–425 BCE) and Thucydides (c. 460–403 BCE), the philosophers Plato (c. 428–348 BCE) and Aristotle (c. 384–332 BCE), and playwrights such as Sophocles (c. 495–405 BCE). Their works and other written records add much to our understanding of ancient Greece.

SOURCE 4 Part of the ancient Greek temple called the Parthenon, viewed from below the Acropolis of Athens



17.2 Putting it all together

Using historical sources as evidence

1. Look closely at Source 1.
 - (a) Describe the details of the scene depicted in this sculpture.
 - (b) What opinion could you form from this source about the artistic skills of ancient Greek sculptors?
 - (c) Use this source to develop a hypothesis about the wealth and values of ancient Athens.
2. What do you think we might learn from Source 2 about:
 - (a) the skills of Mycenaean potters
 - (b) the arms and armour of Mycenaean soldiers?
3. What kind of character do you think the mask shown in Source 3 was meant to represent?
4. Design a mask to represent a different kind of character. Use plasticine or other suitable material to make this mask.
5. Look closely at the building in the top left of Source 4. Describe a feature of this ancient building that you recognise as having influenced the style of many modern-day public buildings.
6. Write a short summary of what you have discovered about ancient Greece from these four sources.

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 Complete this digital doc: Worksheet 17.2: Getting to know Greece

17.3 The Minoans and Mycenaeans

17.3.1 Minoan civilisation

Civilisation in Greece began before 3000 BCE when people started to grow crops and herd animals on Crete, the largest of the Greek islands. The archaeologist Arthur Evans was the first to excavate their cities. He called these people Minoans after their legendary King Minos. During the fourteenth century BCE, their peaceful civilisation appears to have been overrun by the more warlike Mycenaeans of mainland Greece.

By about 2500 BCE the Minoans had built towns. They had also learned to make tools, weapons and ornaments from bronze and to create beautiful pottery. The main Minoan city, Knossos, dates from about 1900 BCE. The walls of the buildings in Knossos were decorated with scenes of Minoan life, including athletes leaping and performing acrobatics on the backs of wild bulls (see Source 1).

Around the time that Knossos was built the Minoans were building palaces and most Minoans were living in large coastal towns. These were probably centres of their extensive sea trade. There is evidence that the Minoans set up trading bases on several Greek islands and exchanged goods with Egypt, Syria and other civilisations. The Minoans used a written language we call Linear A. It disappeared suddenly about 1450 BCE and it is still not understood. Around 1700 BCE the Minoan cities were destroyed following the eruption of a volcano on the island of Santorini, which triggered a massive tsunami. The cities were rebuilt but were destroyed again by earthquakes in about 1450 BCE.

SOURCE 1 A fresco (wall painting) from Knossos showing young Minoan men and women leaping on the back of a bull



SOURCE 2 Crete, Greece and Egypt at the time of the Minoan and Mycenaean civilisations



Source: Map drawn by Spatial Vision.

17.3.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe the achievements of Minoan civilisation by around 1700 BCE.
2. What appears to have caused the collapse of Minoan civilisation?

Sequencing chronology

3. List the main events in the rise and fall of Minoan civilisation in chronological order.

Using historical sources as evidence

4. Study Source 1.
 - (a) Describe what is depicted in this Minoan wall painting.
 - (b) Do you think the Minoans did such things for sport or could there be another explanation for the scene? Give reasons for your answer.
5. Referring to Source 2, explain how the location of Crete would have helped the Minoans to trade with other civilisations and how the Minoans would have benefited from trade.

17.3.2 The Mycenaeans

Most archaeologists believe that by about 1375 BCE Mycenaean invaders from small kingdoms such as Mycenae, Athens and other hilltop cities on the Greek mainland had conquered the Minoans. Mycenaean civilisation flourished between about 1400 BCE and 1200 BCE. The Mycenaeans were great seafarers and traders and were highly skilled in the use of bronze. They appear to have copied some aspects of Minoan culture. Their warrior ruling class lived in palaces and enjoyed music, dancing and sport.

The Mycenaean spoke an early form of Greek. Their written language, which we call Linear B, has been translated since its code was cracked in 1952. The earliest Mycenaean stories to appear in written sources are Homer's *Iliad* and *Odyssey*. These epic poems had been handed down by word of mouth for centuries before they were written down. The *Iliad* tells the story of how in about 1200 BCE the Mycenaeans laid siege to, and finally captured and destroyed, the city of Troy in Anatolia (present-day Turkey).

Homer's *Iliad* and the Trojan War

The story told in the *Iliad* is so popular that it has been told and retold, even by Hollywood in a twenty-first century movie. Whether any part of the story is true is still a mystery. Some archaeological discoveries have only added to the debate. The story was probably passed down by storytellers for three centuries before it was recorded in writing by Homer. Homer is believed to be a Greek who lived in the eighth century BC. However, some scholars think that his poems were the work of several people.

As the *Iliad* tells the story, there are several main characters. Among them are:

- Agamemnon, the king of Mycenae
- Menelaus, the king of Sparta and brother of Agamemnon
- Helen, the wife of Menelaus
- Priam, the king of Troy
- Paris, son of Priam
- Odysseus, a Mycenaean warrior hero.

SOURCE 3 A scene from one of the wall paintings found at Tiryns, a Mycenaean site from the fourteenth to thirteenth centuries BCE



According to the *Iliad*, the war started because Paris abducted Helen and took her to Troy. As Homer tells the story, Agamemnon gathered a great Greek navy and led a ten-year siege of Troy that included huge battles outside the city's walls. Troy was finally defeated by Mycenaean trickery. Pretending to have given up the siege, the Greeks left a giant wooden horse with their hero Odysseus and about twenty other warriors hidden inside. Seeing that the Greeks had sailed away, the Trojans thought that the Greeks had left the horse as a gift. After the rejoicing Trojans dragged the horse into the city, Odysseus and his companions crept out and opened the city gates for the returning Greeks, who seized and destroyed Troy.

Fact or fiction?

Even in ancient times the truth of the *Iliad* was doubted (see Source 4). Until the late nineteenth century CE, the story was thought to be simply a myth. Then, in 1870, a German amateur archaeologist, Heinrich Schliemann, began digging on what he believed was the site of ancient Troy. He used the *Iliad* to help find its location and he discovered the ruins of a city that could have been Troy (see Source 5). However, later excavations showed that the level Schliemann identified as Troy was hundreds of years too early.

SOURCE 4 From *The Histories*, written by the ancient Greek historian Herodotus (c. 484–425 BCE)

... had Helen really been in Troy, she would have been handed over to the Greeks with or without Paris' consent; for I cannot believe that either Priam or any other kinsman of his was mad enough to be willing to risk his own and his children's lives and the safety of the city, simply to let Paris continue to live with Helen.

SOURCE 5 At Canakkale, about 300 km south-west of Istanbul in Turkey, Schliemann dug up these city ruins. Later excavations have shown that the site contains ruins of nine different settlements, built one on top of the other.



The Mask of Agamemnon?

Four years later, Schliemann excavated Mycenae to find the grave of Agamemnon. He found at least five royal graves filled with gold and other treasure. His most exciting finds were several gold masks, including one pictured in Source 6 that became known as the 'Mask of Agamemnon'. Many archaeologists doubt that this really is Agamemnon's death mask for several reasons:

- Schliemann had a record of faking archaeological finds and he could have had the mask made.
- The grave where the mask was found is about 300 years earlier than the supposed date of the Trojan War.
- The 'Mask of Agamemnon' looks very different from the masks, including Source 7, found covering the remains of other Mycenaean chieftains.

There is still no clear evidence that the Trojan War really happened or that the grave Schliemann unearthed at Mycenae was in fact the grave of King Agamemnon.

SOURCE 6 The gold 'Mask of Agamemnon'. Heinrich Schliemann claimed to have found it in 1876 when he excavated graves in Mycenae. It is held in the National Archaeological Museum, in Athens.



SOURCE 7 Another Mycenaean gold mask from excavated graves in Mycenae, now held in the National Archaeological Museum, in Athens



17.3.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Who were the Mycenaeans?
2. What role might the Mycenaeans have played in the destruction of Minoan Crete?
3. According to legend:
 - (a) What caused the Trojan War?
 - (b) How did the Mycenaean Greeks win the Trojan War?
 - (c) What was the main effect of the Trojan War?

Using historical sources as evidence

4. Analyse Source 3. What might it be possible to say about Mycenaean art and everyday life using it as your evidence?
5. In Source 4, what does Herodotus doubt about the account of the Trojan War in the *Iliad*?
6. The *Iliad* was an epic poem, whereas Herodotus was trying to write history. How would this lead to him taking a different perspective on the cause of the Trojan War?
7. Why is it likely that the walls in Source 5 are not the walls of ancient Troy?
8. Compare Sources 6 and 7.
 - (a) Describe the features of the mask in Source 6.
 - (b) Describe the features of the mask in Source 7.
 - (c) If both of these masks were really found in the graves at Mycenae, why do you think a decision was made to call Source 6 rather than Source 7 the mask of Agamemnon?

17.3 Putting it all together

Using historical sources as evidence

1. Choose two sources in this subtopic and determine three questions you would ask about each of them to assess their accuracy, reliability and usefulness for a study of Minoan and/or Mycenaean history.
2. Why do you think other archaeologists and historians have contested Heinrich Schliemann's interpretation of his findings about Troy and Agamemnon?

Identifying continuity and change

3. Describe the main changes that took place in the ancient Greek world between 3000 BCE and 1200 BCE.

17.4 The 'Dark Age' to the Archaic Period

17.4.1 The influence of geography

From their heavily fortified cities, the Mycenaean kings dominated the south of Greece from around 1600 BCE to 1200 BCE. But soon after 1200 BCE Mycenaean culture suffered a sudden and violent collapse. This was followed by the Greek 'Dark Age', which lasted almost four hundred years. We know very little about ancient Greece between 1150 BCE and the development of the Greek alphabet around 800 BCE.

SOURCE 1 The origins of Greece



Source: Map drawn by Spatial Vision.

What we do know is that the landscape, climate and natural resources of Greece had a huge influence on its civilisations in this period and later. As you can see in Source 1, 75 per cent of the Greek mainland is mountainous. This meant that settlements were isolated from each other, overland travel was difficult and only about 20 per cent of the land was useful for farming. This caused the Greek settlements to turn to the sea for contacts and trade between each other.

Greece had long, hot summers and short, cool and wet winters. Rainfall was unreliable and long droughts could cause hunger but floods could also destroy food crops. However, soils in many of the valleys were suitable for growing barley, oats and some wheat, while the uplands provided slopes for grazing sheep and goats and growing grapes and olives. Most ancient Greeks were small farmers who lived in small villages. They provided the staples of the Greek diet — bread, wine and olive oil — as well as products from the herds — wool, skins, cheese and occasionally meat.

Trade

Although sudden storms made sea travel in ancient times very dangerous, the Greeks also relied on the sea for overseas trade for bronze, timber and other materials they lacked. Some wheat also had to be imported due to the Greek population increasing around 600 BCE and this crop not growing well in the steep terrain and limestone soils. The Greeks imported it and other foods from Egypt, southern Italy and around the Black Sea. They exported olive oil, wine and pottery.

17.4.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Complete the following paragraph by selecting the correct words from the list: sea; fifth; unreliable; mountainous; isolated; hot.

The type of civilisation that developed in ancient Greece was influenced by the _____ landscape, _____ summers and _____ rainfall. Only a _____ of the land was good for farming. Because Greek settlements were _____ from each other, the Greeks used the _____, despite the risk of dangerous storms.

Using historical sources as evidence

2. Look closely at Source 1.
 - (a) How much of Greece is mountainous and how would that have affected farming and travel by land?
 - (b) Why is the Greek coastline very long relative to the size of Greece?
 - (c) How would these geographical features have encouraged many Greeks to emigrate from Greece?

17.4.2 The development of the Greek city-states

The Greek 'Dark Age', c. 1150–750 BCE

The period from about 1150 to 750 BCE is called the Greek 'Dark Age' partly because very little is known of it. Mycenaean palaces were looted and burned and nearly all the Mycenaean fortresses except Athens were abandoned. We do not know who the attackers were. Until the late twentieth century historians mostly agreed that they were **Dorians** from northern Greece. Among these Dorians were people who settled in villages at the site of Sparta around 1000 BCE. However, archaeological evidence suggests that the Mycenaean kingdoms had collapsed before the Dorians moved south.

During the Dark Age the art of writing was lost, trade collapsed and central government disappeared. A consequence was a lack of evidence for this period. Another important Dark Age development was the migration from around 1050 BCE of mainland Greeks to the Aegean islands and the coast of Asia Minor (modern-day Turkey). According to Greek legends, these migrants included people fleeing from the Dorians. Around the same time the **Iron Age** reached Greece with the beginning of tool and weapon manufacturing using iron.

SOURCE 2 An archaeological excavation at the site of an ancient Greek settlement in what is now the Black Sea port of Odessa, in Ukraine



SOURCE 3 Athens today as seen from its port, Piraeus. The arid mountains in the background are typical of Greece.



The Archaic Period and the rise of the polis

The time between c. 750 and 490 BCE is called the Archaic Period. It describes the time leading up to the Classical Period. Many changes took place in the Greek world. **Pan-Hellenic** institutions such as the Olympic festivals came to express a common Greek culture. Around 750 BCE Greeks set up colonies in southern Italy, Sicily and even as far away as the Black Sea. This was probably because of a growing shortage of farming land on the dry, rocky mainland. By the early seventh century BCE, throughout the Greek mainland, islands and colonies a new kind of state developed. Greeks formed **poleis** — independent, self-governing city-states such as Athens, Sparta, Corinth and Thebes that often fought each other for territory.

17.4.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What is meant by the Greek 'Dark Age'?
2. What became of the Mycenaean cities and writing in this period?
3. To which areas did Greeks migrate during the Dark Age?

Using historical sources as evidence

4. Look closely at Source 2. What four questions would you ask about its usefulness and reliability as evidence for the establishment of ancient Greek colonies?
5. Athens (see Source 3) was an ancient Greek city-state and is the capital of modern Greece. Describe the landscape of its surroundings.

17.4 Putting it all together

Using historical sources as evidence

1. Using all of the sources in this subtopic as evidence, explain why Greece became a country of independent, self-governing city-states that often fought against each other.

Identifying continuity and change

2. Describe the broad changes that occurred in Greece between c. 1200 and 490 BCE.

17.5 Government in Athens and Sparta

17.5.1 Athens — the roots of democracy

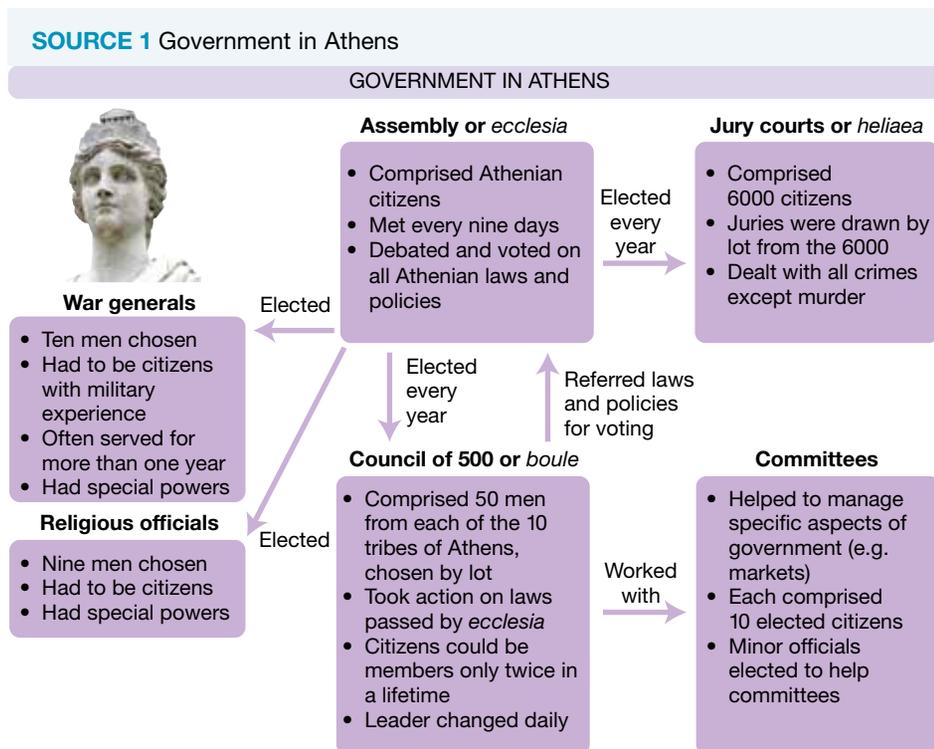
Athens and Sparta were the two most powerful city-states in ancient Greece. They had many things in common with other ancient Greek city-states. For example, they generally worshipped the same gods and used the same language and alphabet. However, city-states had their own laws and traditions and their own ruling systems.

Greek city-states (or poleis) were originally ruled by kings. Later most came under the control of **oligarchies**. From the seventh century BCE many poleis were for a time led by absolute rulers called tyrants, who all the same often carried out reforms to win popular support. In most cases the aristocrats (oligarchs) eventually regained power. Then in 508 BCE Athens introduced a new system of government called **democracy**.

Democracy in Athens was at its height by the fifth century BCE. Athenian citizens decided how their city-state would be run. At meetings of the governing assembly (called the *Ecclesia*), they voted on laws and elected officials. Membership of the Council of 500 and jury courts was rotated. This meant that all citizens could participate, and no-one became too powerful. In fact, someone suspected of trying to grab power could be ostracised. **Ostracism** meant that if 6000 citizens spoke up against a man, he could be exiled from Athens for 10 years. Citizens expressed their concern by scratching the man's name on a piece of broken pottery called an *ostrakon*.

But was it democratic?

In Athens, as in Australia, only adult citizens could vote. In Australia today most people who live here are citizens. However, during the fifth century BCE, only about 45 000 of Athens' population of around 300 000 were citizens. Women and children (who made up nearly half the population), **metics** (who made up about 12 per cent) and slaves (who made up about 25 per cent) could not take part in the democratic process.



SOURCE 2 Painting of Athenian Assembly after the death of Pericles in 429 BCE



DID YOU KNOW?

All citizens were able to participate personally in the government of Athens because the citizen population was fairly small. Each citizen could discuss and vote on Athenian laws. They could also be elected to work as public officials on a fair, rotational basis. This sort of democracy is called direct democracy.

The form of democracy in Australia is called representative democracy. Australian citizens over 18 vote for politicians who they believe will best represent their or the community's interests. Generally, these representatives belong to political parties. The party or coalition winning most of the 150 seats in the federal House of Representatives (the lower of the two houses of Parliament) forms the Federal Government. The main losing party or parties form the Opposition, whose role is to critically review what the government does. The Senate comprises 76 people — 12 from each state of Australia and two from each territory. Its role is to protect state interests.

17.5.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What did the ancient Greek city-states have in common?
2. When did Athens introduce a system called democracy?
3. What percentage of the population of Athens were citizens?
4. Why could citizens be ostracised and what happened to them?

Sequencing chronology

5. In chronological order, list the three forms of government that existed in many Greek citystates before Athens introduced democracy. What were the differences between these forms of government?

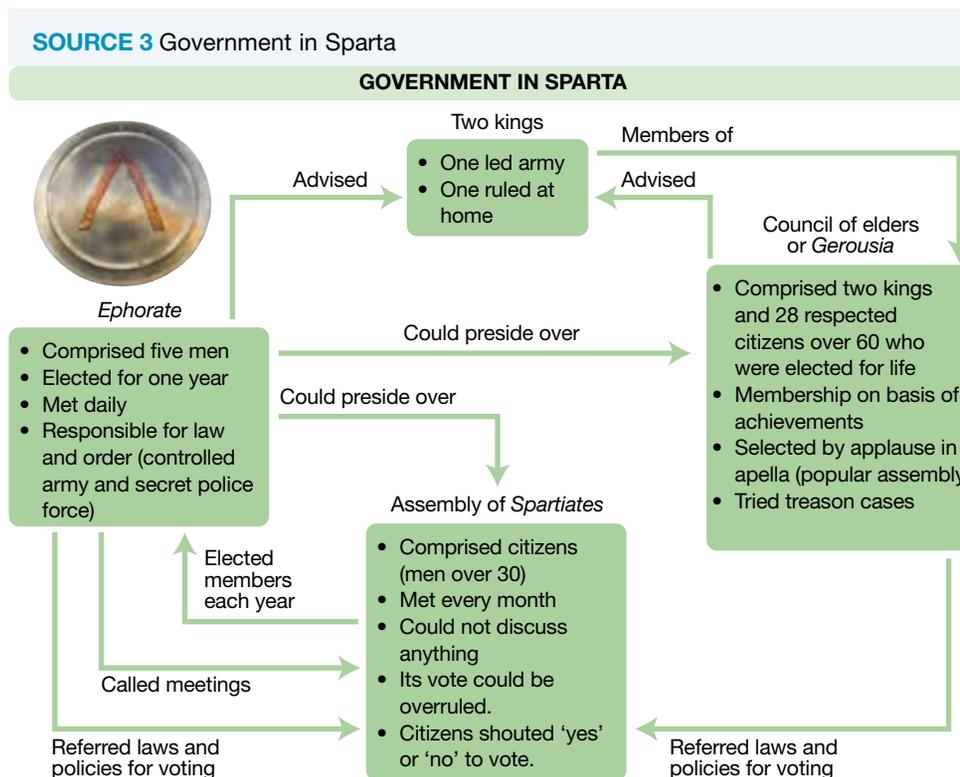
Using historical sources as evidence

6. Using Source 1, explain the difference between the Assembly and the Council of 500.
7. Describe the scene in Source 2 and suggest what impression it gives of the character of meetings of the Athenian Assembly.

17.5.2 Spartan rule

Dorians settled at the site of Sparta around 1000 BCE. During the eighth century BCE, Sparta took control of the Laconian plain and conquered neighbouring Messenia. The Spartans made most Laconians and Messenians slaves, called **helots**, whom they controlled brutally.

Initially, Sparta was ruled by two kings who inherited their position. By about the end of the seventh century BCE the government had become an oligarchy. Most power was in the hands of a few families who controlled the **Ephorate** and dominated the council of elders. These two bodies decided what laws and policies the Spartan citizens in the Assembly of Spartiates would vote on. Citizens could not discuss these matters. They could only shout 'yes' or 'no' to a proposal. Even if they voted 'no', this decision could be overruled.



17.5.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What was the effect of the Spartan conquest on the Messenians?
2. Around what time did Sparta become an oligarchy and what did that mean?

Using historical sources as evidence

3. Examine Source 3.
 - (a) Explain who could be Spartan citizens.
 - (b) Describe powers held in Sparta by each of the following institutions: the Ephorate, the Gerousia and the Assembly.

17.5 Putting it all together

Using historical sources as evidence

1. Using Sources 1 and 3 and other information in this subtopic answer the following questions.
 - (a) Who voted on laws and policies in Athens and in Sparta?
 - (b) In which, Athens or Sparta, did ordinary citizens have the most power?
 - (c) Which groups in Athens and Sparta had none of the rights of citizens?
 - (d) What were the differences between Athenian and Spartan attitudes to political democracy and law-making.
2. Use the internet to find archaeological sources from Athens and Sparta. Develop a hypothesis to suggest why there are many from Athens and so few from Sparta.

Identifying continuity and change

3. Read the Did You Know? in section 17.5.1. Working in groups:
 - (a) identify the differences between the direct democracy of Athens and the representative democracy of modern Australia
 - (b) explain the advantages and disadvantages of each system of democracy.

17.6 Everyday life in Sparta

17.6.1 A strong city-state

After brutally putting down a slave revolt in about 650 BCE Sparta became a military state, and it remained so for the next 300 years. Culture and art were no longer valued, and luxuries were despised. The main role of a Spartan man was to be a brave warrior, while the main role of a Spartan woman was to bear strong children.

SOURCE 1 As the Greek writer Plutarch notes, the main aim of boys' education was to teach them to be fierce, disciplined soldiers.

The boys learned to read and write no more than was necessary. Otherwise their whole education was aimed at developing smart obedience, perseverance under stress and victory in battle. So as they grew older they intensified their physical training, and got into the habit of cropping their hair, going barefoot and exercising naked. From the age of twelve they never wore a tunic, and were given only one cloak a year. Their bodies were rough, and knew nothing of baths or oiling.

Like many settlements in ancient Greece, Sparta was a city-state. This means it was a fortified centre surrounded by a town community and farmlands. The farmlands provided the produce that people needed to survive. Like all city-states, it had its own laws and form of government. The city-state of Sparta became very powerful because it was the only one with a permanent army.

A tough life

Sparta soon dominated the **Peloponnese peninsula**. But life in Sparta was harsh. Ancient Greek writers claimed that weak or sickly male babies were abandoned on a hillside to die of exposure. However, recent archaeological evidence casts some doubt on this story.

Boys left home at the age of seven to start their military training in barracks. Everything was geared to protecting the state — personal needs did not matter.

Spartan women

Spartan women could not become citizens, vote or hold public office. However, they could own land and represent themselves in court. There is evidence that Spartan women came to own about a third of Sparta's

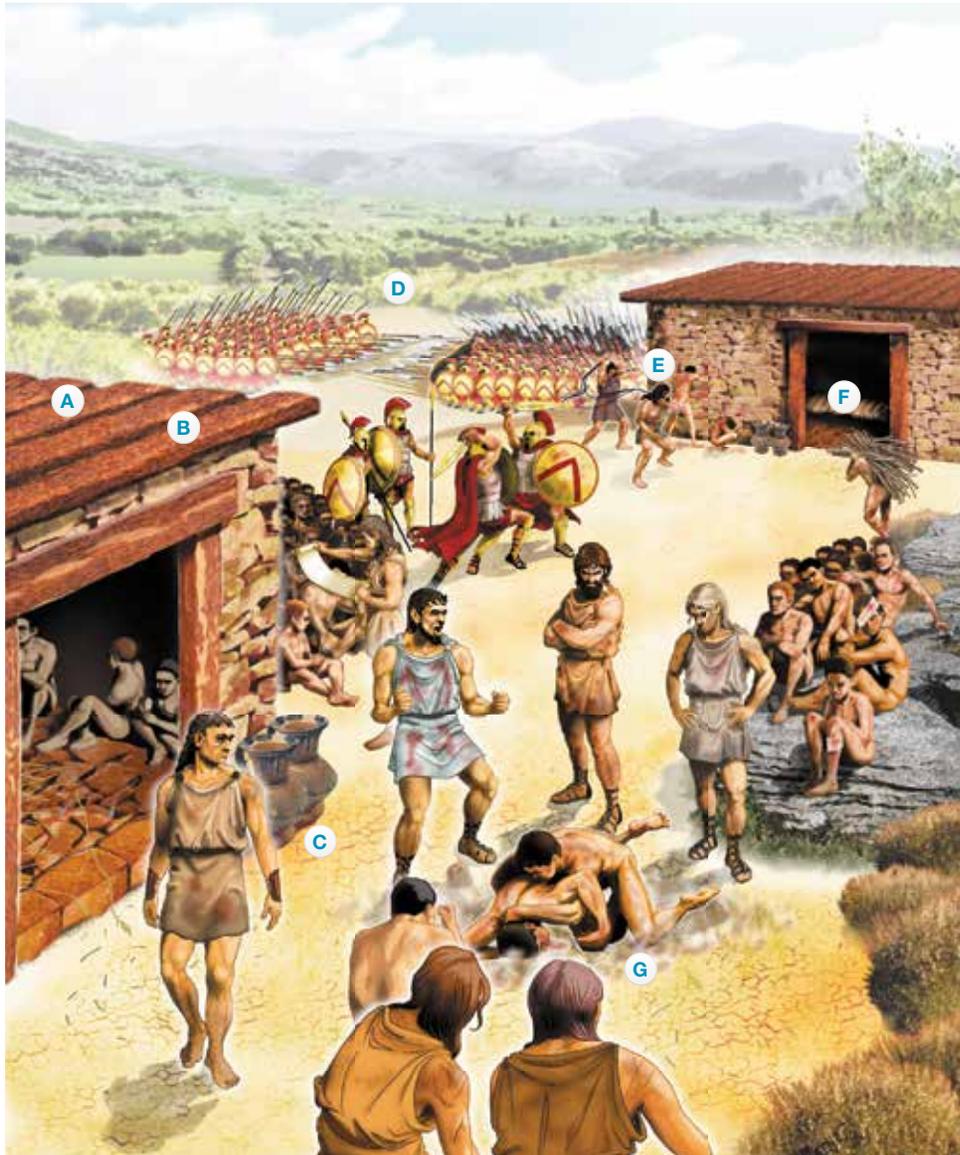
SOURCE 2 Spartan males lived a harsh and disciplined life, much of which was spent in military camps.

A The army barracks and other Spartan settlements had no walls.

B Even after they married, Spartan men still ate in the army barracks as a member of a mess. To become a citizen, a man had to be a member of an army mess.

C Men lived in military camps until they were 30, when they could become a citizen and marry.

D Spartan soldiers grew their hair long and usually wore little clothing. However, when fighting or training, they wore armour and bright red cloaks. When in their phalanx formation, they stood close together, with shields touching and their spears jutting straight out ahead.



E Boys were often flogged to teach them to put up with pain and develop their courage. Being caught stealing was severely punished — though stealing itself was accepted.

F Beds were a bundle of long reeds, cut from the riverbanks, and laid on the floor

G In the military camps, boys and young men exercised, played war games and learned about Sparta's rules of conduct. The boys enjoyed no 'home comforts' and discipline was very harsh.

land and wealth because so many Spartan men were killed in battle. Like boys, they were taught to be brave and outspoken.

Women wore plain clothing, cut their hair short and did not wear perfume, make-up or jewellery. They trained to keep fit, and exercised and danced naked. Their role was to bear healthy children and to be tough for their men.

Such great importance was placed on producing Spartan children that it influenced the way Spartans viewed death and funerary customs. The most honourable death for a Spartan man was to die in battle. Along with men who died in battle, women who died in childbirth were the only Spartans who were permitted to have their names on tombstones.

17.6.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why did Sparta need to develop such a strong army?
2. What was life like for Spartan women?
3. Look up the adjective 'spartan' in a dictionary. Explain why the word has the meaning it does today.

Using historical sources as evidence

4. Read Source 1. Explain how you think the hardships Spartan boys had to endure would have helped them to develop obedience and perseverance.
5. Look carefully at Source 2, and read the labels. Then answer the following questions.
 - (a) What did Spartan boys do to keep fit and increase their mental strength?
 - (b) Would Spartan army camps have been easy targets for an enemy? Explain.
 - (c) Why might the way Spartans lived have reduced the influence of the family? How might this have benefited the state of Sparta?
 - (d) Describe what an approaching phalanx of Spartan soldiers would look like. Why might it frighten their enemies?

17.6.2 The helots and the perioeci

Unlike slaves in other Greek states, the helots were not owned by individuals. They were the property of the Spartan state, which allocated families of helots to farm the land set aside for each Spartan. Because the helots greatly outnumbered them, the Spartans lived in fear of a helot rebellion. It was probably this fear that led the Spartans to cruelly control the helots and to adopt a system that made Sparta such a harsh military state.

The **perioeci** were descended from Dorian tribes who settled in other areas around Sparta. Though perioeci men had to serve in Sparta's army if required, they were otherwise free. They were mainly craftspeople and merchants — occupations forbidden to the elite Spartans.

How did the helots react to enslavement?

Ever since the Spartans conquered the Messenians, reducing them to the status of slaves, it was this slavery that made the Spartan way of life possible. Spartans could only be full-time soldiers because their state provided each Spartan family with sufficient helots to work their land and to provide those families with the produce they needed.

Evidence suggests the Messenian helots never lost the will to regain their freedom. They rebelled against Sparta around 650 BCE and again in 464–459 BCE. It is very likely that the methods used by the Spartans to suppress the helots made the helots even more rebellious. The Spartan Ephorate ran a secret police force called the Krypteia. It recruited young Spartans and sent them out for a year to spy on the helots. They were authorised to kill helots, especially those who appeared to have the kinds of qualities that might fit them to lead a helot rebellion (see Sources 3 and 4).

SOURCE 3 A description of the treatment of helots, by the ancient Greek writer Plutarch (c. 46–120 CE)

The magistrates dispatched privately some of the ablest of the young men into the country, from time to time, armed only with their daggers ... they ... killed all the Helots they could light upon; sometimes they set upon them by day, as they were at work in the fields, and murdered them ...

Aristotle, in particular, adds, that the ephori, [ephors] so soon as they were entered into their office, used to declare war against them [the helots], so that they might be massacred without a breach of religion.

SOURCE 4 A description of the treatment of helots who had fought for Sparta against Athens in 424 BCE, by the ancient Greek writer Thucydides (c. 460–403 BCE)

The Helots were invited by a proclamation to pick out those of their number who claimed to have most distinguished themselves against the enemy, in order that they might receive their freedom; the object being to test them, as it was thought that the first to claim their freedom would be the most high-spirited and the most apt to rebel. As many as two thousand were selected accordingly, who crowned themselves and went around the temples, rejoicing in their new freedom. The Spartans, however, soon afterwards did away with them, and no one ever knew exactly how each one of them perished.

How have historians explained Sparta's treatment of the helots?

Our only ancient sources for Sparta are a few archaeological traces and the writings of several ancient Greeks, including Herodotus and Thucydides. Almost none of our ancient written primary sources were created by Spartans and none by helots. Yet an enormous number of books and articles have been written about ancient Sparta by historians using the little evidence that exists. Sources 5 and 6 are two examples.

SOURCE 5 An account of Spartan motives for suppressing the helots, from Sarah B. Pomeroy, et al., *Ancient Greece. A Political, Social and Cultural History*, 1999

The Second Messenian War [of c. 650 BC] had been a terrifying revelation of the potential risks of the helot system, and the possibility of a repetition haunted the imaginations of Spartans and their enemies. One certain way of avoiding such a catastrophe, abandoning Messenia, was unthinkable ... the Spartans realized that if all potential hoplites could be mobilized and trained to the highest degree of skill possible, Sparta would enjoy an overwhelming military advantage over its helots and other enemies ... In effect they waged a perpetual war against the helots and were consequently always prepared to engage in other acts of aggression when necessary.

SOURCE 6 An account of Sparta recruiting helots as soldiers, from Antony Andrewes, *Greek Society*, 1991

The other main source [of recruits] was the helots. The 700 whom Brasidas took with him to the north [in 425 BC] were still formally slaves; they were only liberated on their return home ... About the same time ... Sparta created a whole new class ... These were helots who were already liberated at the time when they were enrolled. For the next fifty years, they were a very important part in Sparta's military effort ... The training-up of such numbers from a notoriously oppressed and ill-treated class looks like an appalling risk, though no doubt, in case of trouble, the Spartans could count on the *perioikoi* [perioeci] to support them.

17.6.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Who were the perioeci and the helots?
2. In what ways was the position of the helots different to that of slaves in other parts of Greece?
3. Explain how the slavery of the helots made the Spartan way of life possible.

Using historical sources as evidence

4. Read Sources 3 and 4 and analyse them by answering the following questions.
 - (a) What information about Spartan treatment of helots does each source provide?
 - (b) What kind of source is it?
 - (c) Who wrote each source and around when would it have been written?
 - (d) Why do you think each source was written and how useful is it as evidence for this topic?
 - (e) What more would you need to know about the author to judge the source's reliability?
5. Do Sources 3 and 4 provide complementary evidence or conflicting evidence for the Spartans' treatment of the helots? Give the reasons for your answer.
6. Compare and contrast Sources 5 and 6. What conclusion does each of these secondary sources present on Spartan attitudes towards the helots?
7. How do Pomeroy (Source 5) and Andrewes (Source 6) differ in their interpretations of Sparta's treatment of the helots?

17.6 Putting it all together

Using historical sources as evidence

1. Using the sources and other information in this subtopic, explain what life was like for a helot and how the helots might have viewed their situation.

Identifying continuity and change

2. Using the sources and other information in this subtopic, explain how Sparta's enslavement of the helots changed everyday life in Spartan society after 650 BCE.

Analysing cause and effect

3. What can we tell about the effect of Sparta's almost constant involvement in warfare from the fact that the only Spartans allowed tombstones were men who died in battle and women who died in childbirth?

learn on RESOURCES — ONLINE ONLY

 Complete this digital doc: Worksheet 17.4: Analysing a visual source

17.7 Everyday life in Athens

17.7.1 The very different lives of Athenian men and women

Athens was the largest of the Greek poleis. It was very different from Sparta. From the fifth century BCE it was one of the richest and most beautiful cities in the ancient world, famous for its temples, fine public buildings and love of the arts. It had theatres where plays were performed and its citizens had a high regard for learning.

The man was the important figure in Athenian life. He decided everything — when and whom his daughters would marry, and even whether or not new babies would live or die. Most girls were married in their early teens to men twice their age (see Source 1).

SOURCE 1 This painting from a small Greek pottery box shows a bride being escorted to the home of her new husband after a wedding feast at her parents' home.



After marrying, a man spent most of his time away from the house. He might carry out government duties, run a workshop, work out in the gymnasium, meet his friends in the **agora** for a chat or attend dinner parties. In contrast, a woman spent virtually the rest of her life in the home. She was expected to produce children, especially sons. With the help of slaves and older daughters, women ran the household (see Source 2). Marriage feasts were one of the few occasions when women were able to do something other than home duties and to celebrate with their menfolk.

Education

Only boys went to school. Very privileged girls might have a home tutor to teach them to read or perhaps play the lyre. Boys started school — a dawn-to-dusk affair — at around the age of seven.

Their teachers read to them from papyrus scrolls, and the boys learned how to write on a wooden-framed slate (a fine-grained stone that easily splits into sheets) coated with wax. They were also taught reading (including poetry), maths, music and physical fitness.

Housing

Though most Athenian houses had two storeys, they were fairly small. Wealthy Greeks did not usually build impressive mansions, as most used their spare money to fund athletic and religious events. The home of a wealthy Greek family might have a central courtyard, a bathroom and a stone floor, rather than one made from packed earth. Apart from this, there was little difference between a mansion and the homes of poorer people.

Athenian houses were made of sun-dried bricks. All rooms faced inwards and were usually fairly dark, airless and smoky spaces. This was because windows were small and set high, and open fires were often lit indoors. Furniture was sparse, with household items mostly stored on the floor or hung from nails in the wall.

Men and women had separate living areas. The women's area was as far away as possible from the entrance and public areas of the house. It was forbidden to strangers and was often very dark.

SOURCE 2 One of the few regular trips women could make outside the home was to collect water from public fountains near the agora. They carried the water in an **amphora**.



17.7.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe the lifestyles of Athenian men and boys.
2. To what roles were Athenian women and girls confined?

Using historical sources as evidence

3. Examine Source 1. Identify the bride and groom and discuss what evidence this source provides for the wealth and social class of the couple getting married.
4. What evidence does Source 2 provide for the clothing and hairstyles of Athenian women and for their position in Athenian society?

17.7.2 Public life, death and burial

Only men could become citizens. Women generally had no legal or political rights. They could not hold public office or go shopping. They could, however, take part in some religious festivals and rituals.

Men's banquets were an important and common part of daily life as you can see in Source 3. Slaves removed guests' sandals when they arrived and washed their feet. Lying around on low couches, the men enjoyed food such as fish fried in olive oil, boiled vegetables, cheese made from goats' milk, bread, figs, dates and grapes. They ate with their fingers, drinking wine mixed with water.

The fifth century BCE was the peak of the Golden Age of ancient Greece. By this time, Athens was a wealthy city with a stable democracy, strong trade links, a thriving culture and a keen sense of civic pride.

SOURCE 3 After a meal, men relaxed by telling jokes and riddles and playing musical instruments. Sometimes they might be entertained by singers, dancers, musicians or gymnasts.



Death and burial practices

Athenians, like most other Greeks, believed in an underworld, where Hades, the brother of Zeus, reigned over the dead. They believed that a person's *psyche* (spirit) left the body at the very moment of death. To make sure that the *psyche* would find its way to the afterlife, the dead person's mouth and eyes were closed. The body was anointed with oil, wrapped and displayed for two days while women stood by wailing and friends and relatives visited to mourn. On the following day, the body was taken in a procession to the cemetery, which was outside the city gates of Athens, and placed in a tomb.

In the seventh and sixth centuries BCE, aristocratic families erected earth mounds, upright slabs or pillars, or statues and some very elaborate monuments at grave sites. But by the end of the fifth century, Athenians were burying their dead in simpler stone coffins. In both eras, the aim was to ensure that the dead were remembered. They appear to have believed that such remembrance was needed to ensure life after death.

17.7.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe ways in which men were privileged in Athenian public life.
2. How were the Athenian dead prepared for the afterlife?
3. What do Athenian funeral rituals tell us about their beliefs?

Using historical sources as evidence

4. Describe the scene in Source 3 and discuss what Athenian women might have thought about men's banquets.

17.7.3 A city of beauty and bustle

Like most other city-states, Athens had a prominent acropolis at the centre of its cluster of houses and a large agora (or marketplace). It was surrounded by a large area of open country.

The Acropolis

During this time, elegant buildings were erected on the Acropolis in Athens — a large, rocky hill about 150 metres high. The largest of these was the **Parthenon**, which is pictured in Source 4. It was a temple dedicated to the goddess Athena. She was the city's patroness and protector in time of war.

SOURCE 4 Work on the Parthenon started in 447 BCE and took 25 years to complete. Much of the building was destroyed in 1687. It was then being used by the Turks to store gunpowder, which exploded under enemy attack.



The Parthenon was decorated with many beautiful sculptures as well as with carved panels of the gods, battles and festivals. During the early nineteenth century, many of these carved panels were removed, cut into pieces and shipped to Britain by Lord Elgin. He was at that time the British Ambassador to the Turkish Empire, of which Greece had been part for over a thousand years. Today more than half of the surviving panels are in the British Museum. The Greek government is trying to get these 'Parthenon marbles' back.

The Agora

Below the acropolis was the Agora (see Source 5). This large tree-filled square, framed by public buildings, was the place where everything happened. It was the city's centre of government. It was also the place to buy goods such as food, animals, furniture, jewellery, musical instruments and pots. Men went there to shop, learn more about new ideas, watch plays and chat with their friends. Women were rarely seen.

Attica

Most of the population of Athens lived in Attica (the surrounding countryside that was ruled by Athens). Although many were farmers, the generally dry and rocky landscape meant crops such as grain were not always easy to grow. So Athens imported grain from places like Egypt and Sicily. It also imported timber and metals. On the other hand, crops such as olives, figs and grapes grew well. The export of goods such as olive oil and wine made Athens very wealthy.

SOURCE 5 The agora was the political, legal, commercial and social heart of the city in ancient Greece.

A Public buildings surrounding the Agora in Athens included the law courts (*Heliæa*), the mint, the military headquarters (*Strategeion*) and the *Bouleuterion* (meeting place of the Council of 500).

B Plays were first held in the Agora and later in special amphitheatres. They began as religious ceremonies in honour of the Greek god Dionysus. He was the god of wine and merriment.

C Athenian pots were usually decorated with detailed scenes of daily life and with the stories of myths and legends.



D Slaves were bought and sold in the Agora. A highly skilled slave might cost 6000 drachma; a simple wooden couch might cost 20 drachma. A drachma was the main silver coin of the ancient Greeks. Before coins were introduced, goods in ancient Greece were bought and sold by bartering.

E To build columns, ropes and pulleys were used to hoist blocks of stone into position. Metal rods joined each block to the one above and below

F The mass of men provided an audience for philosophers such as Socrates. Works by philosophers such as Plato (Socrates' star pupil) and Aristotle (a follower of Plato) have been translated into English.

17.7.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What was the Acropolis of Athens?
2. To whom was the Parthenon dedicated?
3. How were the Parthenon marbles lost from Greece?
4. Why did men visit the Agora?

Using historical sources as evidence

5. Look closely at Source 4 and use clues from Source 5 to explain how the Parthenon's supporting columns were built.
6. Study Source 5. In two columns make a list of similarities and differences between the activities in the Agora and what would be seen in a modern market.

17.7 Putting it all together

Using historical sources as evidence

1. Work in small groups to design a poster or a museum display for an exhibition on everyday life in ancient Athens. Use sources and other information from this subtopic along with images and information from websites, including museum websites. For each heading select a suitable image and write a paragraph about it. Arrange your display under at least four of the following headings:

- Eating and drinking
- Clothing, hairstyles, makeup and jewellery
- Worshipping
- Entertainment
- Marriage
- Children
- Occupations.

Identifying continuity and change

2. Explain what similarities in the houses of rich and poor Athenians and changes in burial practices might suggest about the impact of democracy in Athens.

17.8 Laws, myths, gods and oracles

17.8.1 Laws, myths and gods

The ancient Greeks lived in about a hundred separate city-states that often fought each other. But they had many things in common that gave them a sense of shared identity. They all spoke dialects of the Greek language. They also shared the same myths, worshipped the same gods and took part in the same festivals to honour these gods.

Greek laws

There is evidence that each Greek city-state had its own laws, although no systematic collection of ancient Greek laws has survived. In some matters like inheritance, the laws of the city-states seem similar. But, even so, there were differences between Athens and Sparta. By the seventh century BCE, many Greek poleis chose men called ‘law-givers’ to make written records of their existing laws or set down new laws.

Athens is the city-state for which we have the most evidence. Athens appointed Draco as its first law-giver around 620 BCE. Around 594 BCE, he was followed by Solon, who created several new laws. Under Solon’s laws, murderers were to be banished but most crimes were punished only by fines. His laws also dealt with such matters as trade and the location and spacing of houses in Athens. Solon’s laws also corrected at last one injustice that had threatened to cause civil war in Athens. In the seventh century BCE, creditors (people who were owed money) had power to enslave those who could not repay their debts. Solon abolished this practice, freed debt-slaves and cancelled their existing debts.

Law courts were established in Athens to try cases and decide on punishments but there were no official judges or lawyers. For most court cases, decisions were made by Athenian citizens, who were chosen by lot.

Sparta’s laws were not written down. However, according to ancient Greek historians, Lycurgus was the legendary law-giver who brought Sparta the ‘Great Rhetra’, the set of laws dictating the entire Spartan system. Most evidence suggests that these laws were probably introduced after 650 BCE. However, it is doubtful that Lycurgus actually existed and much more likely that his story was a myth.

SOURCE 1 Herodotus, *The Histories*, Book I, 66.

How the change to good government came about I will now relate. Lycurgus, a distinguished Spartan, visited the Delphic oracle, and no sooner had he entered the shrine than he was greeted with these words:

*Hither to my rich temple have you come, Lycurgus,
Dear to Zeus and to all gods that dwell in Olympus.
I know not whether to declare you human or divine –
Yet I incline to believe, Lycurgus, that you are a god.*

... [Lycurgus] made fundamental changes in the laws, and took good care that the new ones should not be broken. Later he reorganized the army, introducing the system of messes and the new tactical divisions of squadrons and companies ... By these changes Spartan government was put upon a sound basis, and when Lycurgus died a temple was built in his honour.

Greek myths

In common with people in many societies, the early Greeks had their myths (see Source 2), which were handed down from one generation to the next through epic poems recited by storytellers. From about 800 BCE these stories were written down. Homer's *Odyssey* and *Iliad* are the two best known of these epics. The *Iliad* tells the story of the siege of Troy. The *Odyssey* follows the 10-year homeward journey of Odysseus, hero of Troy, and his encounters with many strange creatures and great dangers. In these mythical stories, the gods behave like people, often taking sides in human conflicts.

SOURCE 2 A relief sculpture from mid-fourth-century BCE Athens depicting two Amazons fighting a Greek warrior. In Greek mythology, the Amazons were a nation of female warriors. They were often depicted in battles with Greeks.



The gods of Mount Olympus

The Greeks believed their lives were controlled by the many gods who lived on Mount Olympus in the north of Greece. These gods were **immortals** but they had all too human weaknesses. The chief god was Zeus. The other gods were his brothers, sisters, sons and daughters. Each was responsible for a different aspect of human life.

- Hera, Zeus's wife, was patroness (protector) of marriage and children.
- Ares was the god of war.
- Artemis was patroness of hunting and wild animals.
- Dionysus was the god of wine and pleasure.
- Athena was the goddess of wisdom.
- Hephaestus was the god of fire.
- Hermes was the messenger of the gods.
- Apollo was the sun god and god of law.
- Aphrodite was goddess of love and beauty.
- Poseidon was god of the sea.
- Pluto was god of the underworld.

These were the most important gods, but there were others, and there were many mythical heroes who were not immortals but had powers beyond those of ordinary people.

DID YOU KNOW?

In Greek **mythology**, the hero Heracles was not a god, but he was so strong that the gods sometimes depended on his strength. When he was still a baby, he strangled poisonous snakes. As a youth, he killed a ferocious lion. As a man he performed legendary feats that included abducting Cerberus, the three-headed hound that guarded the underworld. For a time he also held up the sky, which was normally supported by Atlas. His death came as a result of a trick played on him. He put on a poisoned robe that caused such pain that he threw himself onto a fire. The gods then took him up to dwell with them on Mount Olympus.

SOURCE 3 A **metope** from the Temple of Zeus at Olympia. The scene tells part of the myth of the 12 labours of Heracles (Hercules). It shows Atlas offering Heracles the apples of the Hesperides while Heracles and Athena hold up the sky and the world.



17.8.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. How were most crimes punished under Solon's laws?
2. Which of Solon's laws would have been popular with poor citizens in Athens?

Using historical sources as evidence

3. Identify reasons why most historians would doubt the story in Source 1.
4. Suggest why the scene in Source 2 was a popular theme in ancient Greek art.
5. Identify the three figures in Source 3.

17.8.2 The oracles — messages from the gods

In our own times some people still believe in fortune tellers. Similarly the ancient Greeks believed in oracles. An oracle was a place where people could question the gods about the future. It was also a message from the gods in answer to such a question. The most important oracle was at Delphi (see the map in 17.4 The 'Dark Age' to the Archaic Period). According to myths, Delphi was the 'navel of the world' so the Greeks built a sanctuary there. Any Greek who went to Delphi to consult the oracle had to pay a fee, sacrifice a goat and look for **omens** in its **entrails**. They would then ask questions of a priestess called the Sybil. The priests of Apollo would translate the Sybil's answers, but they were usually vague enough to have many possible meanings.

SOURCE 4 From *The Persian Wars*, by the ancient Greek historian Herodotus

... the Athenians, anxious to consult the oracle, sent their messengers to Delphi ... [They] went back with it to Athens. When, however, upon their arrival they produced it before the people, and inquiry began to be made into its true meaning, many and various were the interpretations which men put on it.

17.8.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What were the two meanings of the term 'oracle'?
2. Explain why the ancient Greeks consulted oracles.

Using historical sources as evidence

3. Read Source 4.
 - (a) Identify reasons why the message from the oracle could have many different meanings.
 - (b) What can you tell from this about the type of answers given to questions put to the oracle at Delphi?
 - (c) Why might such answers have been given?

17.8 Putting it all together

Using historical sources as evidence

1. Use your library or the internet to research a Greek myth. It could be related to the scene in Source 2 or Source 3. Write a short summary of the myth and tell it to the class.

Identifying continuity and change

2. In small groups, discuss similarities and differences between the roles and importance of myths, religion and predictions of the future in ancient Greece and in modern times. You could, for example, compare the role of oracles in ancient Greece with astrologers who write the horoscope columns today.

Determining historical significance

3. Evaluate the role of shared myths and shared gods in contributing to a sense of Greek identity.

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Complete this digital doc: Worksheet 17.6: Myths and meaning

17.9 The Olympic Games

17.9.1 The ancient Olympics

For modern athletes, the most important competition is the Olympic Games, which attracts top competitors from all over the world in a huge range of sports. These sports include running, high jump, swimming, soccer and discus throwing. For any modern athlete, to represent his or her country at the Olympic Games is considered the greatest honour. To win a medal at the Olympic Games is usually the peak of a top athlete's career. The idea for the modern games was taken from ancient Greece, but in many ways the ancient games were very different from those of today.

The ancient Greek city-states had many religious festivals but the most important of them was held every four years at Olympia, in the city-state of Elis, to honour the god Zeus. The Greeks regarded 776 BCE as the year of the first **Olympiad**. By the sixth century BCE the Olympic festival attracted competitors from all over the Greek world. During each Olympiad a truce was declared between any city-states that were in conflict. As the Greeks were scattered over mainland Greece, the islands and colonies, these festivals contributed to a common sense of Greek identity. The Olympic festival continued to be held until 393 CE, when it was abolished by the Christian Roman emperor Theodosius I, who was opposed to all pagan festivals.

SOURCE 1 From *History of the Peloponnesian War*, by the contemporary historian Thucydides

This summer were celebrated the Olympic Games ... The Spartans were refused access to the temple by the Eleans and so prevented from sacrificing and competing in the games. This was because the Spartans had not paid the fine which had been imposed upon them by the Eleans according to the Olympic law. The Elean case was that the Spartans had made an attack ... and had sent **hoplites** of theirs into Lepreum during the period of the Olympic truce.

17.9.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Where did the idea for the modern Olympic Games come from?
2. What date is given to the first Olympiad?
3. What god was honoured at the ancient Olympic festival?

Using historical sources as evidence

4. According to Thucydides in Source 1:
 - (a) Which Greek city-state was refused permission to attend the Olympic Games?
 - (b) What evidence does this source give for reasons why a city-state could be excluded from the ancient Olympics?

17.9.2 The events

The main events in the ancient Olympics were running races. These included the stade (a sprint), the dolichos (a long distance race) and a race in which the competitors ran in leg guards and helmets carrying their shields. Other events included boxing, wrestling and the pankration (see Source 2). The pentathlon was the highlight of the festival. It included discus throwing, long jump, javelin throwing, running and wrestling. When chariot racing was added to the Olympics it became the most spectacular of all events, with up to forty chariots racing and turning at high speeds. The city-states gave many rewards to their athletic heroes but crowns of olive leaves were the only official Olympic prizes.

SOURCE 2 A fifth-century BCE Athenian vase depicting the pankration, a form of wrestling in which the only banned tactics were biting and eye-gouging



SOURCE 3 The entrance to the ancient stadium at Olympia. The arch was added by the Romans.



DID YOU KNOW?

Games were the main part of the ancient Olympic festival, which began with a religious ceremony and lasted five days. For the amusement of the crowds there were also acrobats, plays and sideshows. As the ancient games expanded, new events were added, including poetry and music competitions. Merchants attended the games to sell souvenirs. Athletes competed naked and only men were allowed to take part in the events. At first, women were not even allowed as spectators, although this changed later.

17.9.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Name three events in the ancient Olympics that are not in the modern Olympics.
2. Explain why those three events would not be held in any modern Olympics.

Using historical sources as evidence

3. Study the depiction of the pankration in Source 2. Describe what it and the other events you identified in your answer to Activity 2 might reveal about one purpose of the ancient Olympics.
4. What does Source 3 suggest about how the Romans came to regard the Olympics when they conquered Greece?

17.9 Putting it all together

Using historical sources as evidence

1. Make a list of the differences between the ancient Greek Olympic Games and the modern Olympics. You could organise your notes under the following headings:
 - Locations where the games are held
 - Nationalities and gender of the athletes
 - Events
 - Rewards for winners and place-getters
 - Purpose of the Olympics
 - Periods of time from the beginning to the end of one Olympic Games.
2. Work in groups to find out why any modern country has been excluded from the Olympics or has chosen not to take part in them. You can find information on this issue on the internet. Present your findings to the class.
3. Use Source 2 and your imagination to write and present a sport commentary on the pankration.

Determining historical significance

4. Based on your work in this subtopic, how would you evaluate the historical significance of the ancient Olympics?

17.10 Greeks, Persians and Alexander the Great

17.10.1 The first Persian invasion, 492–490 BCE

The city-states of Greece were often at war with each other, but most of them united when the mighty Persian Empire attacked Greece in 490 BCE and again in 480–479 BCE. Together they saved Greece from being swallowed up by the Persian Empire. In the following century Greece was again invaded, but this time by their northern neighbours the Macedonians, who would soon set out to conquer the known world.

In ancient times Persia was the land we now call Iran. Under Cyrus the Great (559–529 BCE) and his successor, Cambyses, the Persians won a great empire that included Anatolia (modern Turkey), Palestine, Syria and Egypt. In 499 BCE the Greek cities of Anatolia, with help from Athens, revolted against their Persian overlords. The revolt failed and Persia seized the offshore Greek islands.

The Battle of Marathon

To punish Athens for supporting the rebellion, King Darius I of Persia sent a fleet to invade the Greek mainland in 492 BCE, but the fleet was wrecked in a storm. Still Darius demanded that the Greeks submit to him. When Athens and Eretria refused, Darius sent another fleet carrying a large Persian army. His forces captured Eretria in 490 BCE and then sailed for Attica. They landed on the plain of Marathon, 40 kilometres from Athens (see Source 1). There, 10000 Athenians and their Plataean allies defeated 50000 Persians in a surprise attack.

SOURCE 1 Naval and land campaigns of the Persian Wars



Source: Map drawn by Spatial Vision.

17.10.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Check your understanding

1. What is the modern name of Persia?
2. Name the modern countries that belonged to the Persian Empire under Cambyses.
3. What did Athens do in 499 BCE that provoked a Persian invasion?
4. Why did the Persian invasion of Greece fail in 492 BCE?

Using historical sources as evidence

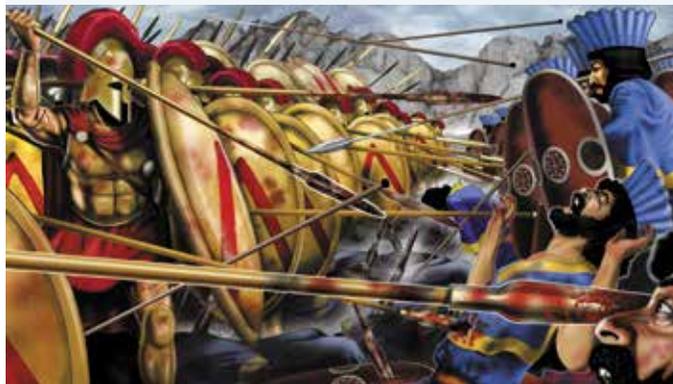
5. Examine Source 1.
 - (a) How close did the Persian force get to Athens in 490 BCE?
 - (b) Who defeated the Persians at Marathon, ending the first Persian invasion attempt?

17.10.2 The second invasion, 480–479 BCE

Darius died in 486 BCE but his son, Xerxes, spent several years organising a still greater invasion of Greece. His preparations included building a floating bridge to carry his army across the narrow strait called the Hellespont that separates Europe from Asia. A huge army of spearmen, archers and cavalry from all over the Persian Empire marched into Greece. It was supported by a great fleet sailing down the coast (see Source 1). To meet the threat, 31 Greek states called off their quarrels and agreed to unite against the Persians.

Athens played the leading naval role in the conflict but Sparta led the Greek armies in major land battles. At Thermopylae in 480 BCE the Spartan king, Leonidas, held a narrow mountain pass against the Persian horde with just 300 Spartans and about 7000 other Greek hoplites. They were eventually defeated and killed, but they crucially delayed Xerxes' advance.

SOURCE 2 A modern artist's impression of Greek and Persian infantry at Thermopylae in 480 BCE



Naval battles

Shortly after the Battle of Thermopylae, at Artemisium, 60 kilometres from Thermopylae, a Greek fleet fought three battles against the much larger Persian fleet. Both sides suffered heavy losses, but the Persians were greatly weakened, having already lost hundreds of ships in two storms.

As the Persian fleet approached Attica, Athens was evacuated and left to be burned by the Persians. Then the Greek navy attacked the Persians at Salamis, where the sea was too narrow for the Great Fleet to be used effectively. This time the Persians were completely defeated.

The final clashes

At Plataea in 479 BCE the Spartans led a Greek army of about 100 000 in destroying a much larger Persian force. Only a fraction of the once mighty invading army survived to return to Persia. The Greek fleet then sailed for the island of Samos off the coast of Anatolia. They landed and defeated the Persian army at Cape Mycale. Although fighting continued for many more years, the Greeks no longer feared Persian invasion.

SOURCE 3 From the description of the Battle of Thermopylae in Herodotus, *The Histories*, Book VII, 227

Of all the Spartans and Thespians who fought so valiantly, the most signal proof of courage was given by the Spartan Dieneces. It is said that before the battle he was told by a native of Trachis that, when the Persians shot their arrows, there were so many of them that they hid the sun. Dieneces, however, quite unmoved by the thought of the strength of the Persian army, merely remarked: 'This is pleasant news that the stranger from Trachis brings us: if the Persians hide the sun, we shall have our battle in the shade.'

17.10.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Who was Xerxes?
2. Describe the preparations Xerxes made for the second Persian invasion of Greece.

Sequencing chronology

- Place the major battles of the second Persian invasion on a timeline with notations to show who won each battle and how they won.

Using historical sources as evidence

- Read Source 3 and analyse and evaluate it using the following questions.
 - Who wrote this source and why might it have been written?
 - As the Spartans were all killed at the battle, how would the writer have obtained this source?
 - How could we know that it is reliable?
- What clues do Sources 2 and 3 provide about the reasons why the Spartans and other Greeks were able to delay the Persian army at Thermopylae?
- Work in pairs to explore the differences between Persian and Greek perspectives on the Persian Wars. One student should explain the causes of the wars from a Persian point of view. The other should give a Greek viewpoint. Then compare them and decide whether either or both views could be right.

17.10.3 Alexander the Great

The Peloponnesian Wars

Cooperation among the Greeks did not last long. During the Peloponnesian Wars (460–445 BCE and 431–404 BCE), Greece was divided into two camps — the states and colonies dominated by Athens and those who allied with Sparta. The second war finally ended when Sparta, with Persian help, forced Athens to surrender. Sparta came to dominate Greece until the Greek city-state of Thebes defeated the Spartans in 371 BCE.

Macedon conquers Greece

After so many years of fighting each other, the Greek city-states were too weak to withstand a new invasion when Philip of Macedon conquered Greece in 338 BCE. Two years later Philip was murdered and his son Alexander (356–323 BCE) became the ruler of Macedon and Greece. When Thebes again revolted, Alexander crushed the city ruthlessly, killing 6000 of its people and enslaving the rest.

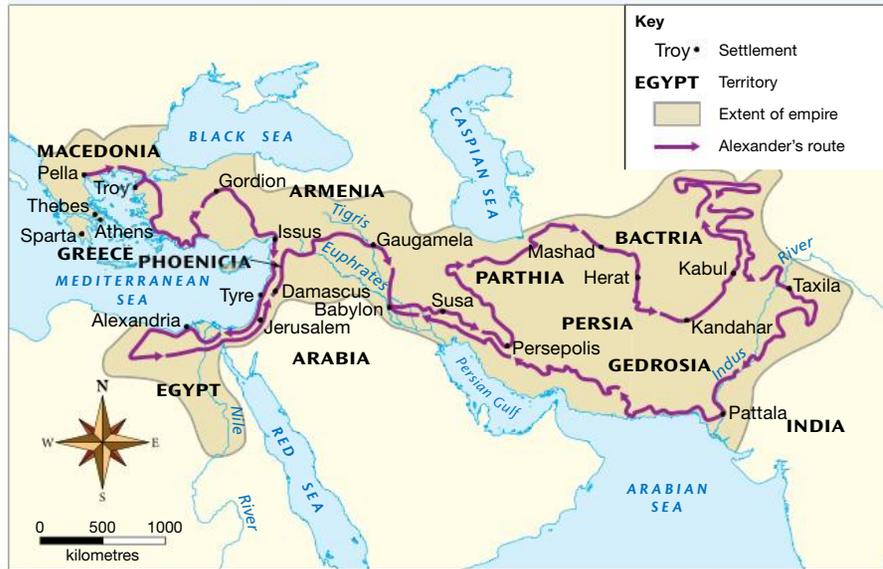
Alexander creates an empire

In 334 BCE Alexander led an army of Greeks and Macedonians eastward to invade the Persian Empire. They defeated King Darius III in battles at Issus and Gaugamela in 333 and 331 BCE (see Source 5).

SOURCE 4 A detail from the Alexander Sarcophagus (stone coffin) showing Alexander on horseback (Sidon, in modern-day Lebanon)



SOURCE 5 The empire of Alexander the Great was established through an 11-year military campaign during which his army marched nearly 34 000 kilometres.



Source: Map drawn by Spatial Vision.

In 330 BCE Alexander conquered Persepolis, the Persian capital, and seized control of the empire under the title 'Great King'. But his armies pressed on. By 326 BCE, Alexander had reached India and defeated the Indian king Porus, whose forces included troops on war elephants. In every land he conquered, Alexander had cities built to strengthen his control. Many were named Alexandria.

Alexander died of fever when he was only 32 years old. His huge empire fractured into three main parts: his homeland of Macedon included all of Greece; Egypt was ruled by one of Alexander's generals, Ptolemy Soter, and his descendants for three centuries; in the east, the Seleucid Empire stretched from Syria to Afghanistan.

The age of the Greek city-states ended with Alexander. But although he adopted many of the customs of the peoples he conquered, he was devoted to Greek culture, which he spread throughout much of the east. Alexander's conquests were one important way in which Greek ideas were spread far beyond Greek shores and passed down through time.

SOURCE 6 Two sides of a silver coin of Alexander the Great, probably made around 324 BCE. The figure on horseback is believed to be Alexander. The figure at left is wearing a Macedonian cloak, Greek armour and a Persian head-dress and carrying a thunderbolt. They are believed to be the only surviving images of Alexander from his lifetime.



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Deepen and check your understanding of this topic with the following resources and auto-marked questions:

- ◉ Persian Wars
- ◉ Peloponnesian Wars
- ◉ Philip of Macedon
- ◉ Alexander the Great

17.10.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Over how many years did the Greek city-states fight each other in the Peloponnesian Wars?
2. How did the results of the Peloponnesian Wars help Philip of Macedon to conquer Greece?
3. Describe how Alexander treated Greek city-states that revolted against his rule.

Sequencing chronology

4. List significant events in Alexander's career in chronological order

17.10 Putting it all together

Using historical sources as evidence

1. Study Sources 4 and 6.
 - (a) Describe the way that Alexander is depicted in these sources.
 - (b) Why do you think he is depicted like this? (Clue: normally only a god would be shown holding a thunderbolt.)
2. Study the map in Source 5 showing Alexander's conquests and compare it with a map of the same region in a modern atlas.
 - (a) List the ancient countries conquered by Alexander.
 - (b) Find the modern names of those countries.

Identifying continuity and change

3. Using the sources and information in this subtopic, evaluate the extent to which Greece remained the same and the extent to which it changed from the beginning of the Persian Wars to the death of Alexander the Great.

Analysing cause and effect

4. Identify one cause of war that was significant in the Persian Wars, Philip of Macedon's conquest of Greece and Alexander's wars to build his empire.

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 Complete this digital doc: Worksheet 17.5: Alexander the Great

17.11 The heritage of ancient Greece

17.11.1 Medicine, mathematics, science and philosophy

Along with the idea of democracy and the Olympic tradition, many ancient Greek ideas have influenced later times, even up to our present age. The heritage of ancient Greece includes developments in science, mathematics, architecture, medicine, philosophy, drama and poetry. Ancient Greek civilisation reached its high point in the fifth century BCE. In the fourth century BCE, Greek culture had spread as far east as India through the conquests of Alexander the Great. After the Romans conquered Greece in 146 BCE, Rome absorbed Greek culture and contributed to the passing down of Greek ideas through the ages.

Medicine

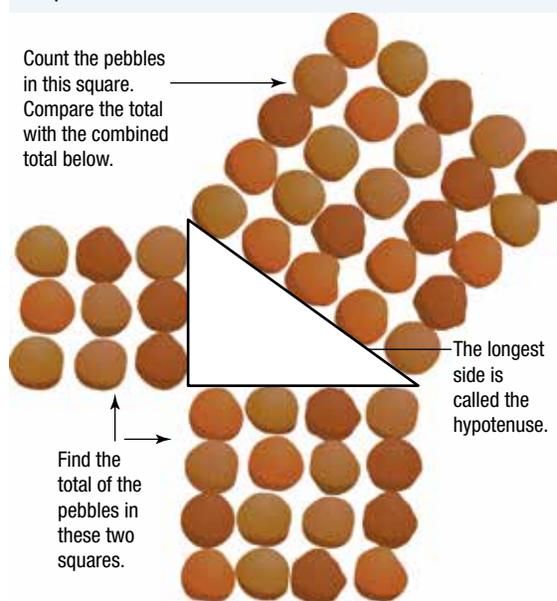
Most ancient Greeks thought that sickness or disability was a punishment from the gods. Hippocrates (c. 460–377 BCE) practised and taught medicine, changing many of its ideas and methods. Among his teachings was the then new idea that sickness was caused by problems in the body, including diet. His set of principles to guide the conduct of medical practitioners, the Hippocratic Oath, is still widely observed today.

Mathematics, science and philosophy

Ancient Greece produced some remarkable thinkers. Anaxagoras, Aristarchus and Eratosthenes developed ideas based on observations in **astronomy**, including the idea that the Earth orbited the sun. Pythagoras (c. 582–500 BCE) arranged pebbles to show the connections between space and numbers; he is remembered today for Pythagoras's Theorem (see Source 1 at right). As well as numbers and geometry, he was also interested in astronomy (he concluded that the Earth was round), musical notes and matter. He believed all things were made up of four elements: earth, air, fire and water. Euclid also developed explanations that are still used in geometry. Thales (c. 624–546 BCE) discovered static electricity. Archimedes, who lived in the third century BCE, discovered important principles in physics.

Another achievement of the Greeks was the development of philosophy by thinkers such as Socrates, Plato and Aristotle. In the fourth century BCE, Aristotle taught that the other planets, the moon and the stars all moved around the Earth. This idea was mistakenly believed throughout Europe for nearly 2000 years after his death.

SOURCE 1 The philosopher and mathematician Pythagoras found that the square of the length of the hypotenuse (the side opposite the right angle) of a triangle was equal to the sum of the squares of the other two sides.



17.11.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What did most ancient Greeks believe to be the cause of sickness?
2. Draw up to columns. In the left column put the following names: Hippocrates, Pythagoras, Aristotle, Euclid, Thales, Archimedes. In the right column briefly describe their achievements or mistakes.

Using historical sources as evidence

3. Study Source 1 and use the pebble method to demonstrate Pythagoras's theorem.

17.11.2 Architecture, drama and poetry

The Greeks developed building styles that are still used today. Many great modern buildings are influenced by ancient Greek styles. For example, the Melbourne Shrine of Remembrance, Geelong Town Hall, Ballarat Railway Station and the Art Gallery of New South Wales all have **porticos** like an ancient Greek temple.

Theatre was very popular in ancient Greece. One of the most famous Greek playwrights is Aristophanes (c. 448–380 BCE). He wrote brilliant comic plays that are still performed today. Few women had the chance to achieve fame in ancient Greek society, but one who did was Sappho from

SOURCE 2 The ruins of the Erechtheion, regarded by many as the most beautiful building on the Acropolis of ancient Athens



the island of Lesbos. Born in about 600 BCE, she became the greatest poet of the ancient Greeks. Some of her poems were preserved on Egyptian papyrus (an early form of paper), but only fragments remain. There are also many ancient Greek sayings that are still used because they remain as relevant today as they were when first written. Among them are the words of the writer of fables Aesop, who lived in the sixth century BCE. He wrote, for example, 'We hang petty thieves and appoint great ones to public office' and 'In union there is strength'.

17.11.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Name two Victorian buildings that have been influenced by ancient Greek styles.
2. Who was Aristophanes?
3. What did Sappho achieve and why was her achievement very unusual in ancient Greek society?

Using historical sources as evidence

4. Study Source 2.
 - (a) Describe the surviving features of the Erechtheion.
 - (b) Why do you think it is regarded as an outstanding example of ancient Greek architecture?

17.11 Putting it all together

Identifying continuity and change

1. To find out more about the legacies of ancient Greece to later ages, work in groups to research one of the following questions.
 - (a) What are the words of the Hippocratic Oath?
 - (b) What is Archimedes' Principle and is it still used today?
 - (c) Where and how were Greek plays performed in ancient times? And today?
 - (d) How did the Greek idea about the elements differ from modern scientific understanding of the elements?
2. Use the internet to find out what international efforts have been undertaken to conserve the remains of buildings like the Parthenon and Erechtheion and to conserve sculptures and other traces of ancient Greek culture.

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 Complete these digital docs: Worksheet 17.3: Acting up in ancient Greece, Worksheet 17.7: Legacy

17.12 SkillBuilder: Analysing and corroborating sources

online only

HOW DO WE ANALYSE AND CORROBORATE ANCIENT GREEK SOURCES?

Ancient Greek sources include pottery, tombs, temples, fortifications, weapons, tools, coins, theatres, written records and artworks. Almost all of our knowledge of ancient Greece comes from such sources.

Go online to access:

- an explanation of the skill (Tell me)
- a step-by-step process to develop the skill, with an example (Show me)
- an activity to allow you to practise the skill (Let me do it)
- questions to test your application of the skill (Applying skills).



17.13 Review

online only

This final subtopic provides a range of opportunities for you to review and respond through:

- (i) revising and checking your historical knowledge
- (ii) demonstrating your ability to apply historical concepts and skills.

Go online to access:

- a key chronology of events relevant to the topic
- a summary of the key knowledge presented in the topic
- a 'Big Questions' activity
- a multiple choice topic test
- short answer or extended writing responses.

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Try out this interactivity: Ancient Greece timeline (int-2937)



Complete these digital docs: Worksheet 17.8: Crossword, Worksheet 17.9: Summing up

17.12 SkillBuilder: Analysing and corroborating sources

17.12.1 Tell me

What are the main ancient Greek sources?

Ancient Greek sources include pottery, tombs, temples, fortifications, weapons, tools, coins, theatres and written records. They also include artworks such as statues and other sculptures in stone and bronze and the paintings that decorated vases and other types of pottery.

Why is it important to analyse and corroborate ancient Greek sources?

Almost all of our knowledge of ancient Greece comes from such sources. Works of art, in particular, tell us much about ancient Greek culture, especially myths and religious ideas. Buildings and sculptures tell us about technology, skills and values. Written records tell us about Greek ideas about politics, myths, history, science and a vast range of other subjects. Not all ancient Greek sources are really primary sources as some were written long after the events they describe.

17.12.2 Show me

How do we analyse and corroborate ancient Greek sources?

When you study an ancient source you need to think carefully about the clues it provides and ask questions about its accuracy, usefulness and reliability. You need to ask questions such as:

1. What is it?
2. Who created it and when was it created?
3. Who or what was it created for?
4. For what aspect of ancient Greek history does it provide useful evidence?
5. Is the evidence it provides accurate and reliable and how can we tell this?
6. What conclusions can we draw from the source about ancient Greek society?

These questions have been applied to Sources 1 and 2.

Ancient writers and many later historians have regarded Spartans as tough soldiers who would die fighting rather than surrender or run from battle. Sources 1 and 2 are relevant to this issue.

1. *What is it?* It is a cup with a design showing Spartan soldiers carrying the body of a comrade killed in battle.
2. *Who created it and when was it created?* We do not know who made it but we know that it was created in Sparta in the sixth century BCE.
3. *Who or what was it created for?* We cannot know whom it was created for. It was made to be a cup but more likely as a decoration than for practical uses.
4. *For what aspect of ancient Greek history does it provide useful evidence?* It indicates that Spartans honoured their men who died in battle by carrying their bodies from the battlefield.
5. *Is the evidence it provides accurate and reliable and how can we tell this?* Without other evidence, we can not tell whether this source is accurate and reliable. However, several ancient Greek sources support this view of the Spartans.
6. *What conclusions can we draw from the source about ancient Greek society?* The Spartans regarded fighting bravely and dying in battle as great virtues.

SOURCE 1 A sixth century BCE Spartan cup showing Spartan soldiers returning from war carrying a slain comrade.



SOURCE 2 Written by the Athenian general and historian Thucydides (c. 460–403) in his book, *History of the Peloponnesian War*, this extract describes the surrender of a force of 120 Spartans in the seventh year of this war between Athens and Sparta.

was ... made, to know if they [the Spartans] would surrender themselves and their arms to the Athenians ... [Hearing] this offer, most of them lowered their shields and waved their hands to show that they accepted it. Hostilities now ceased ... after consulting together they surrendered themselves and their arms ...

Nothing that happened in the war surprised the Hellenes [Greeks] so much as this. It was the opinion that no force or famine could make [Spartans] give up their arms, but that they would fight on ... and die with them in their hands: indeed people could scarcely believe that those who had surrendered were of the same stuff as the fallen.

1. *What is it?* It is an account of the surrender of a force of Spartans during the Peloponnesian War.
2. *Who created it and when was it created?* It was written by Thucydides, an Athenian general and historian, in the fifth century BCE, soon after the events it describes.
3. *Who or what was it created for?* Thucydides wrote a history of the Peloponnesian War, a conflict that divided the Greeks for many years. The extract was part of that history. Its original readers would most likely have been other Athenians.
4. *For what aspect of ancient Greek history does it provide useful evidence?* It tells of an occasion when a Spartan army surrendered to Athenians rather than fighting to the death.
5. *Is the evidence it provides accurate and reliable and how can we tell this?* In judging its accuracy and reliability, we should take into account that the writer was an Athenian general and therefore someone who had fought against the Spartans. Without other evidence, we cannot tell whether this source is accurate and reliable. However, as many other Greeks would have witnessed this event it is unlikely that Thucydides would have distorted the facts.
6. *What conclusions can we draw from the source about ancient Greek society?* We can conclude that, although the Spartans regarded fighting bravely and dying in battle as great virtues, they did not always carry out this ideal. If the source is reliable, we might conclude that Spartans were not always as heroic as many liked to think they were.

17.12.3 Let me do it

Ancient writers and many later historians have regarded Spartan women as being as tough as Spartan men. Sources 3 and 4 are relevant to this issue. Use the six questions to analyse Sources 3 and 4.

SOURCE 3 From Plutarch, *Moralia, III, Sayings of Spartan Women*, 241. Plutarch lived c. 46–120 CE. He was born in Athens but was an admirer of Sparta and was writing many centuries after the events he described.

Another Spartan woman killed her son, who had deserted his post because he was unworthy of Sparta. She declared: 'He was not my offspring . . . for I did not bear one unworthy of Sparta'.

Another, hearing that her son had fallen at his post, said: 'Let the cowards be mourned, I, however, bury you without a tear, my son and Sparta's'.

As a woman was burying her son, a shabby old woman came up to her and said, 'You poor woman, what a misfortune!' 'No, by the two goddesses, what a good fortune,' she replied, 'because I bore him so that he might die for Sparta and that is what happened for me'.

Another woman handed her son his shield, and exhorted him: 'Son, either with this or on this'.*

* In order to run from battle a soldier would have to throw away his heavy shield. A soldier who was killed in battle would be carried home on his shield.

SOURCE 4 A bronze figure of a running girl, 520–500 BCE, believed to have been made in or near Sparta



17.12 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Using historical sources as evidence

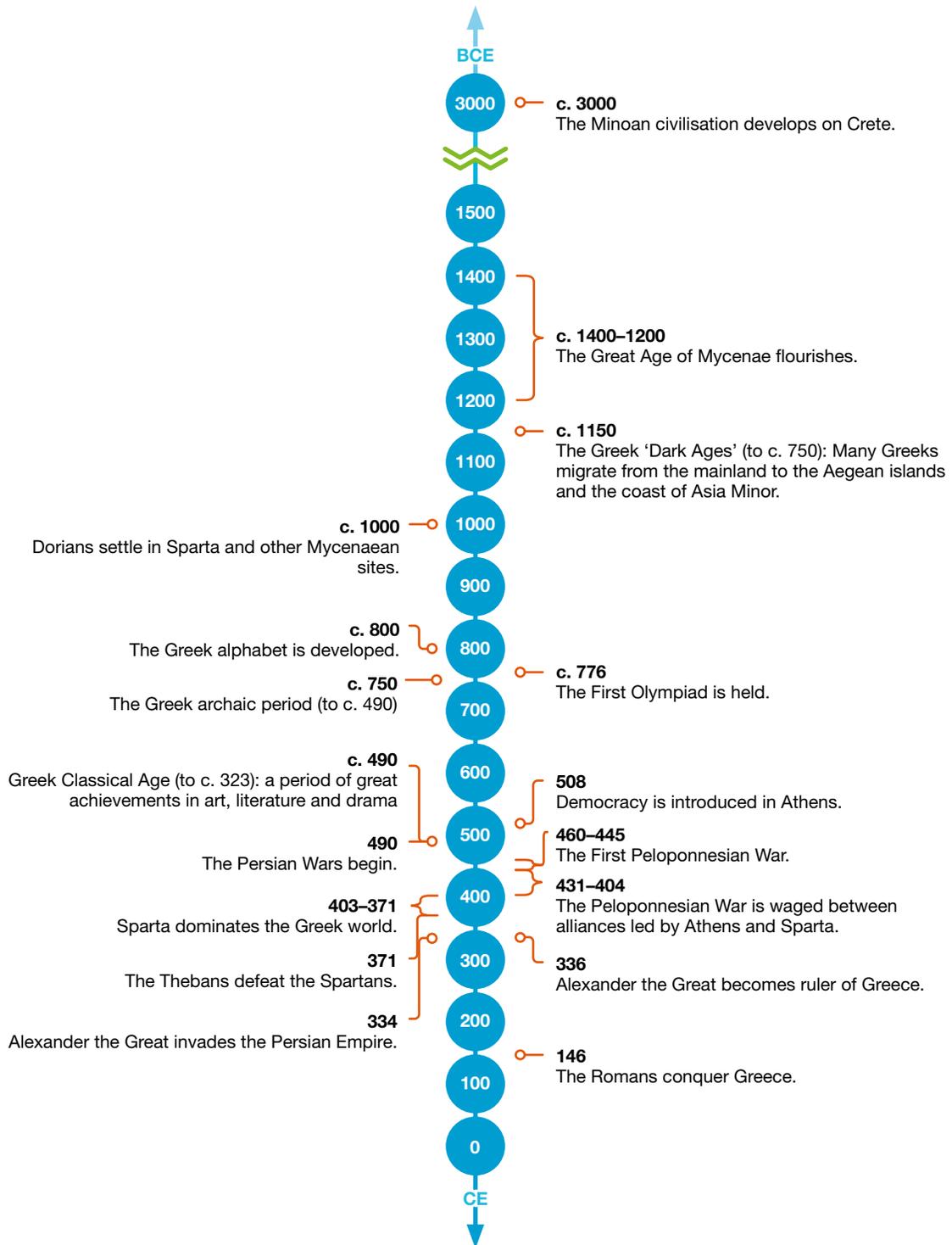
1. Explain how you would differentiate between ancient Greek primary sources and secondary sources about ancient Greece.
2. Why should Source 3, the extract from Plutarch, be classified as secondary source?
3. In this SkillBuilder you have worked with a Spartan cup and a bronze figure (artefacts) and written accounts by two ancient Greek historians. Identify three other types of primary sources that a historian could use for a study of ancient Greece.
4. Explain why it is sometimes difficult to judge the reliability of ancient Greek primary sources.

17.13 Review

In this topic we have explored the world of the ancient Greeks, their city-states and the things they had in common, including myths, religion and culture. We also discovered about ideas that arose in ancient Greece and which continue to influence our lives today.

17.13.1 Review

Chronology: timeline of ancient Greece



Key knowledge: summary

17.2 Examining the evidence

- There is an abundance of archaeological evidence from ancient Greek civilisation.
- Remains include the shells of whole buildings, amphitheatres, statues, relief sculptures and vases painted with scenes from myths and aspects of everyday life.
- The ancient Greeks left many written sources, including histories, poetry and drama.

17.3 The Minoans and Mycenaeans

- Minoan civilisation developed on Crete from around 3000 BCE and was destroyed around 1575 BCE.
- Mycenaean civilisation flourished between 1400 and 1200 BCE.
- The Mycenaeans were legendary conquerors of Troy, as told in the *Iliad*.

17.4 The 'Dark Age' to the Archaic Period

- Geographical features shaped the kind of civilisation that developed in Greece and its patterns of trade.
- Most Mycenaean citadels were abandoned in this period and the art of writing was lost.
- Dorians occupied much of southern Greece.
- Many Greeks migrated from the Greek mainland.

17.5 Government in Athens and Sparta

- The city-states of Athens and Sparta developed very different forms of government.
- Under the Spartan system, power was concentrated in the hands of a few families.
- Athens adopted democracy from 508 BCE.

17.6 Everyday life in Sparta

- From around 650 BCE, Sparta became a harsh military state.
- Spartan enslavement of the Messenians made the Spartan way of life both possible and necessary.
- Spartan women had more power than Athenian women.
- The Messenian helots never abandoned their desire for freedom.

17.7 Everyday life in Athens

- From the fifth century BCE, Athens was a rich and beautiful city with a flourishing culture.
- Men ruled Athenian society. Women were denied education and had very few rights.
- Athenian burial customs reflected those of most of the ancient Greek world.

17.8 Laws, myth, gods and oracles

- Each Greek city-state appears to have had its own laws.
- The myths and gods of ancient Greece were common to all Greek city-states.
- The ancient Greeks believed in oracles, the most important of which was at Delphi, where they believed they could receive messages from the gods.

17.9 The Olympic Games

- The ancient Greek Olympic festival was held every four years to honour the god Zeus.
- The festival contributed to a common sense of Greek identity.
- The festival was very different to the modern Olympic Games.

17.10 Greeks, Persians and Alexander the Great

- When the Persian Empire invaded Greece, many of the Greek city-states united and they were able to inflict crushing defeats on the Persians.
- The Greek city-states were weakened by the Peloponnesian Wars and were conquered by Macedonia in 338 BCE.
- Philip's son, Alexander the Great, became ruler of Macedon and Greece.
- Alexander invaded the Persian Empire and created a vast empire, stretching from India in the east to Egypt in the south-west and Macedonia in the north-west.

17.11 The heritage of ancient Greece

- The heritage of ancient Greece includes the idea of democracy and the Olympic Games.
- Another legacy of ancient Greece were developments in science and the arts.
- Rome absorbed Greek culture and contributed to passing down Greek ideas through the ages.

Key knowledge: multiple-choice topic test

1. Which of the following causes probably contributed to the collapse of the Minoan civilisation?
 - (a) Lack of trade
 - (b) A tsunami and earthquakes
 - (c) Plagues
 - (d) Floods
2. The earliest Mycenaean stories to appear in written sources are which of these?
 - (a) The *Iliad* and *Odyssey*
 - (b) The *Bible*
 - (c) The *Koran*
 - (d) The *Upanishads*
3. Many Greek city-states were isolated from each other due to which of these geographical features?
 - (a) Rivers
 - (b) Deserts
 - (c) Mountains
 - (d) Seas
4. In ancient Athens, ostracism meant which of the following fates?
 - (a) Imprisonment
 - (b) Torture
 - (c) Enslavement
 - (d) Exile
5. Which of the following people in Athens were excluded from the rights of citizens?
 - (a) Farmers and soldiers
 - (b) Poor people
 - (c) Women, metics and slaves
 - (d) Rich people
6. Which of the following resources did the ancient Greeks import?
 - (a) Olive oil and grapes
 - (b) Bronze and timber
 - (c) Wine and beer
 - (d) Pottery
7. Although Spartan women could not be citizens, they could:
 - (a) vote.
 - (b) hold public office.
 - (c) fight in wars.
 - (d) own land.
8. Helots were which of the following?
 - (a) Messenians enslaved by the Spartans
 - (b) Allies of the Athenians
 - (c) Followers of Alexander the Great
 - (d) Peoples of the Persian Empire
9. In Athens, the large temple dedicated to the goddess Athena was called:
 - (a) the Agora.
 - (b) Attica.

- (c) the Parthenon.
 (d) the Erechtheion.
10. An event that was part of the ancient Greek Olympic festival but not part of the modern Olympic Games was:
- (a) long distance running.
 (b) the high jump.
 (c) discuss throwing.
 (d) the pankration.
11. Marathon, Thermopylae and Salamis were the sites of major battles in which of these conflicts?
- (a) The Trojan War
 (b) The Persian Wars
 (c) The Peloponnesian Wars
 (d) The Macedonian conquest of Greece
12. Which of the following ancient Greeks contributed to ideas in medicine?
- (a) Hippocrates
 (b) Socrates
 (c) Sappho
 (d) Aristophanes

17.13.2 Respond

Using historical sources as evidence

1. Write an analysis of this source based on the following questions.
- (a) What are the main details of the painting on the vase?
 (b) What types of skilled craft workers or artists would have created the vase?
 (c) Why would it have been created?
 (d) What evidence does it provide of ancient Greek artistic skills?
 (e) What evidence does it provide of ancient Greek beliefs and values?

Determining historical significance

Alexander the Great is considered to be one of the most significant individuals not just in ancient Greek history but in ancient history generally. Write a half- to one-page assessment of Alexander's significance using the following points as a guide:

- how Alexander maintained his power in Greece
- Alexander's invasion and defeat of the Persian Empire
- the extent of his conquests by the time of his death
- the effect of his rule on the Greek city-states
- the significance of his role in spreading Greek culture.

SOURCE 1 A red-figured stamnos (a type of ancient Greek vase) from about 430–420 BCE. The mythical scene shows Helen being abducted by Theseus.



Responding to the big questions

At the beginning of this topic several big questions were posed. Use the knowledge and understanding you have gained through your study of the subtopics to answer them:

1. How did the environment of ancient Greece influence its civilisation?
2. How were ancient Greek societies organised and ruled?
3. What were the main beliefs, values and cultural achievements of the ancient Greeks?
4. What conflicts took place within Greece and between Greek city-states and other societies?
5. What can ancient sources tell us about life in ancient Greece?
6. What have been the legacies of ancient Greece?

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Try out this interactivity: Ancient Greece timeline (int-2937)



Complete these digital docs: Worksheet 17.8: Crossword, Worksheet 17.9: Summing up

TOPIC 18

Ancient Rome

18.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

18.1.1 Links with our times

In the early twenty-first century we live in a world in which one superpower, the United States of America, has such enormous military power that it can dominate much of the world. The last time one power was so dominant was the age of the Roman Empire. Between the second century BCE and the second century CE, Rome came to control most of the known world. For some, Roman rule brought peace and prosperity; for others it brought slavery and death. Rome was a violent society that spread its power through wars of conquest and entertained its people with cruel public exhibitions. But it was also a society that saw great achievements in science, engineering, politics, law and literature. In the fifth century CE the Roman Empire collapsed, but many of its achievements lived on. Roman ideas have contributed in many ways to our own society. Today, largely because of the remaining traces of its ancient greatness, Rome continues to attract more visitors than almost any city in the modern world.



Big questions

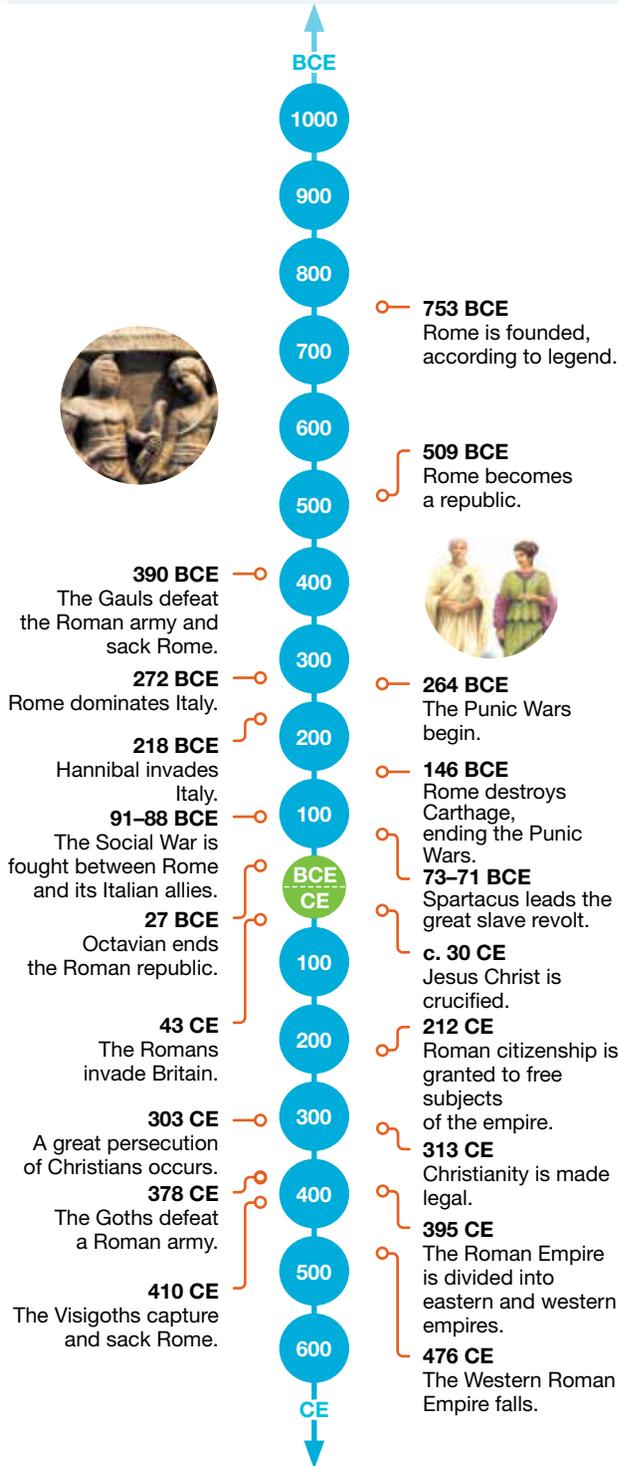
As you work through this topic, look for information that will help you to answer these questions:

1. What can primary sources tell us about life in ancient Rome?
2. What were the main beliefs, values and cultural achievements of the ancient Romans?
3. What were some of the most significant events in the history of ancient Rome?
4. How were ancient Rome and its empire organised and governed?
5. What were the effects of conflicts within Roman society and between Rome and other societies?
6. What have been the legacies of ancient Rome?

Starter questions

1. What movies have you seen that are set in ancient Rome?
2. How was ancient Rome portrayed in those movies?
3. Who were gladiators and why did they sometimes fight to the death?
4. For many years ancient Rome was a republic. What do you think this means?

A timeline of ancient Rome



INQUIRY SEQUENCE

- 18.1** Overview [online only](#)
- 18.2** Examining the evidence [online only](#)
- 18.3** The rise of the Romans [online only](#)
- 18.4** The spreading empire [online only](#)
- 18.5** The Roman army [online only](#)
- 18.6** Citizens and rulers [online only](#)
- 18.7** Spartacus and Nero: two significant individuals [online only](#)
- 18.8** Living in the Roman Empire [online only](#)
- 18.9** Death and the Romans [online only](#)
- 18.10** Roman law and religion [online only](#)
- 18.11** Decline and fall [online only](#)
- 18.12** Heritage of Rome [online only](#)
- 18.13** **SkillBuilder:** Analysing and corroborating sources [online only](#)
- 18.14** Review [online only](#)

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-  **Watch this eLesson:** Ancient Rome (eles-1837)
-  **Complete this digital doc:** Worksheet 18.1: Timeline exercise

18.2 Examining the evidence

18.2.1 How do we know about ancient Rome?

The Romans left many written records of their times. Among ancient Roman writers who are still read today are the historians Seneca (c. 4–65 CE), Tacitus (c. 55–117 CE) and Suetonius (c. 69–140 CE). The former Roman Empire is also rich in archaeological sources. Among the millions of visitors Italy receives each year are many who travel to see traces of ancient Roman civilisation. These traces include columns and arches erected by the Roman emperors, buildings such as the Colosseum and the remains of the ancient Roman Forum.

Pompeii

Many also visit the ruins of Pompeii, which reveal a picture of what life was like for ancient Romans. Pompeii is near the Italian city of Naples. Along with the nearby town of Herculaneum, Pompeii was destroyed when Mount Vesuvius erupted on 24 August, 79 CE. The volcano threw pillars of ash and a soft porous rock called **pumice** into the air. Pompeii, its buildings and people were buried in volcanic ash more than three metres deep. Herculaneum was hit by a blast of superheated gas that killed everyone. The town was then covered in boiling ash, pumice and rocks.

When archaeologists led by Giuseppe Fiorelli excavated Pompeii in the nineteenth century, they unearthed the streets, shops, houses and other structures of the coastal resort town of 15 000 people, along with games, decorations and even graffiti, all of which were as if ‘frozen in time’. They pumped plaster into cavities left by bodies in the hardened ash to create the forms you can see in Sources 1 and 2. Pompeii provides us with detailed evidence of Roman town life because:

- the town was destroyed very quickly and few people escaped
- those lucky enough to escape had no time to take their belongings
- the town was preserved undisturbed under metres of ash for more than 1700 years.

SOURCE 1 Plaster casts of victims of the volcanic eruption that destroyed Pompeii



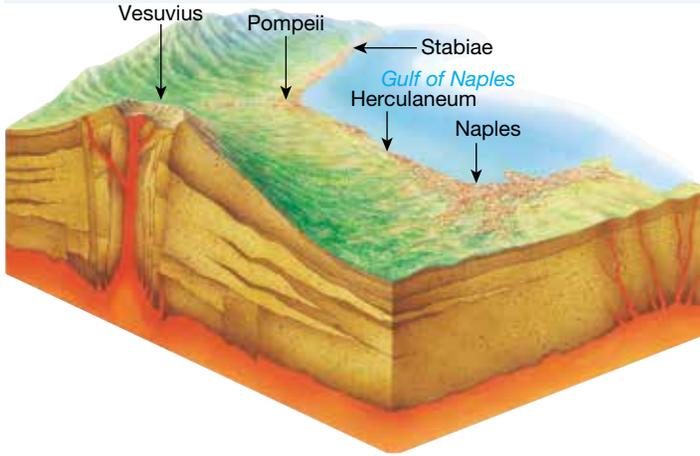
SOURCE 2 Plaster cast of a dog that was killed by the volcanic eruption



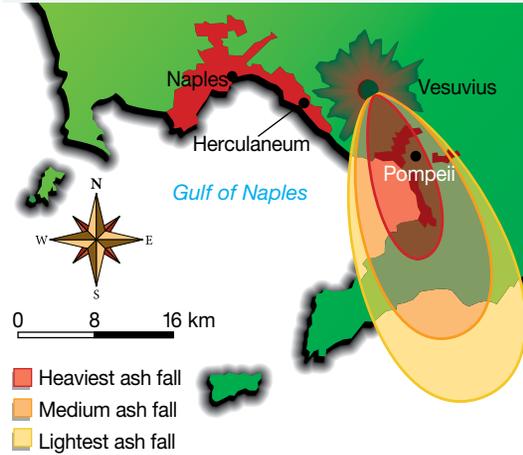
SOURCE 3 From an account by Pliny the Younger, who, as a young man, witnessed the destruction of Pompeii

By now ash, which became hotter and thicker ... was falling on the boats. This was followed by pieces of tufa [porous rock] and stones blackened, burnt and cracked by the fire ... Meanwhile sheets of flame and tall columns of fire were belching forth from several parts of Vesuvius, their flashing and intensity heightened by the darkness of the night ... The buildings were being frequently and violently shaken and seemed as they tottered backwards and forwards to be being moved from their foundations ...

SOURCE 4 Pompeii and Herculaneum were totally destroyed by the eruption of Vesuvius. At first, the volcano spurted a column of ash and pumice high into the air, which fell back like rain. As the energy in the eruption weakened, the column collapsed into a glowing avalanche. Herculaneum, which had escaped the earlier fallout of ash, was covered by about 20 metres of boiling ‘mud’ — a mixture of hot ash, pumice and rocks.



SOURCE 5 The eruption of Mt Vesuvius. The prevailing winds carried most of the fallout from the explosion south, and Pompeii was soon covered by three to four metres of ash and pumice.



18.2 Putting it all together

Using historical sources as evidence

- Look closely at Source 1.
 - Using the information in this subtopic, explain how the archaeologists created these forms.
 - Describe the positions of the bodies.
 - Do you think these people died quickly? Give reasons for your answer.
- Study Source 2. How can you tell that this dog suffered a very different death from the people in Source 1?
- Source 3 is an eyewitness account.
 - What happened to people who tried to escape in boats?
 - How do we know that the eruption of Vesuvius was accompanied by earth tremors?
- List three questions you would ask about each of these three sources if you were using them as evidence for the destruction of Pompeii.
- Explain why Pompeii is considered one of our most valuable sources for understanding everyday life in the Roman Empire.

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 Complete this digital doc: Worksheet 18.5: Reliable sources?

18.3 The rise of the Romans

18.3.1 Rome's origins

Rome has a very long history — from at least 753 BCE, and possibly earlier, to the collapse of the Roman Empire in 476 CE. Historians call the period 509–27 BCE the Roman Republic and the following period the Roman Empire, because Rome was then ruled by emperors. However, Rome had been building an empire long before it was ruled by emperors.

The ancient Romans explained their origins through myths. In the myth of Romulus and Remus, twin boys were raised by a she-wolf. When they grew up they decided to establish a town on the site where the she-wolf found them. In 753 BCE, after killing his brother Remus during an argument, Romulus became the first ruler of a collection of villages on the site of present-day Rome. Over the following century these villages grew into a city, and the wolf became its symbol.

The Romans and their neighbouring tribes were Latins. They lived on the plain of Latium, which had a mild climate, fertile soils and a reliable water supply in the Tiber River. The city is located where the Tiber is easy to cross and close to salt flats (salt was a very important commodity in ancient times). Rome's central location in Italy would make it easy for Roman armies to travel in several directions to combat enemies. During the sixth century BCE, Etruscan kings (from Etruria to the north) ruled Rome brutally. In 509 BCE the Romans rebelled. They expelled their last Etruscan king and developed a system of government unlike that of other city-states: Rome became a **republic**. By this time Rome was the most powerful city-state on the plain of Latium.

SOURCE 1 These items were found in a Latin (possibly Roman) tomb of a military commander who was buried about 475 BCE, soon after Rome became a republic. They include his bronze body armour, helmet, axe and spearheads (held in the National Archaeological Museum of Rome).



DID YOU KNOW?

In the early Roman Republic most political power was held by the heads of a few powerful families. The most powerful position was consul. There were two consuls, who commanded the military and dealt with legal disputes. The republic lasted for almost 500 years.

18.3.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. According to legend, why did the wolf become a symbol of Rome?
2. How did Rome become a republic?
3. What were Rome's geographical advantages?

Using historical sources as evidence

4. Compare Source 1 with images of Greek soldiers in topic 17. Which items in Source 1 indicate that the Latins, including Romans, were influenced by the ancient Greeks?

18.3.2 Rome's growing power

Over the next two centuries Rome expanded its power through war. In 493 BCE Rome made a treaty with the other Latin tribes to subdue the Aequi and Volsci, hill tribes that raided the plain of Latium. In 396 BCE Rome captured the powerful Etruscan city of Veii. But a few years later the Gauls from the north defeated the Roman army and destroyed much of Rome. In time the Romans set about rebuilding their power, and by 272 BCE they had inflicted more defeats on the hill tribes and the Etruscans, suppressed revolts by their former Latin allies, crushed the **Samnites** and taken control of the Greek colonies in the south.

Tactics of power

By 272 BCE Rome had almost 150 000 inhabitants and controlled most of Italy. It had become wealthy through plundering and taxing those it defeated. To control such a vast area, the Romans:

- used conquered peoples against one another
- made alliances with former rivals
- sold defeated enemies into slavery
- allowed conquered cities to keep their own local government, but forced them to supply troops for Rome
- colonised strategically important places with Roman citizens.



SOURCE 3 From a description by the ancient Roman historian Livy of a Roman victory over the Volscians in 385 BCE

The large enemy forces, relying only on their numbers ... were bold only in battle cry, throwing of missiles and the first onrush of the battle; sword-fighting, holding ground, an enemy's face flashing in its fury they could not stand up to. Their front lines were driven in and panic spread to the supporting troops ... then the ranks were broken in many places ... After that, as the first lines collapsed and everyone saw his own turn to be killed was coming to him, they turned and ran. The Romans followed hard on their heels, and so long as they kept their weapons and fled in a packed crowd, it was the infantry's task to keep up the pursuit. But when the enemy were seen to be throwing away their weapons and scattering widely over the land, then came the moment for the cavalry squadrons to be let loose ... and by riding across their path hold the column until the infantry could catch up and finish the enemy off with a regular massacre.

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Deepen and check your understanding of the topic with the following resources and auto-marked questions:

• Republican Rome

18.3.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What caused Rome to be involved in several wars between 493 BCE and 272 BCE?
2. What were the effects of these wars on Rome's Power?

Using historical sources as evidence

3. Use Source 2 to make a list of the peoples the Romans defeated to gain control of Italy.
4. Read Source 3.
 - (a) According to this source, what were the weaknesses of the Volscians?
 - (b) When the Volscians fled, what was the task of the Roman infantry?
 - (c) How was the Roman cavalry used?
 - (d) What hypothesis could you form from this source about Roman attitudes to defeated enemies?
 - (e) Titus Livy (born in 59 BCE) spent more than forty years in Rome while writing his *History of Rome*. Do you think he could be biased? Give reasons for your answer.
 - (f) How might a Roman soldier who had been in this battle have felt about Livy's description?
5. Create a comic strip to demonstrate the Roman tactics described by Livy.
6. Write an account of this battle as it might have been told by a surviving Volscian.

18.3 Putting it all together

Identifying continuity and change

1. Using the sources and other information in this subtopic, identify the ways in which Rome changed between 509 and 272 BCE.

Analysing cause and effect

2. Explain how Rome achieved the changes that occurred between 509 and 272 BCE.

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Complete this digital doc: Worksheet 18.2: Competing interests

18.4 The spreading empire

18.4.1 Building the empire through war

Over the following centuries the Romans continued to expand their empire. By 146 BCE Rome was the strongest power in the area around the Mediterranean Sea. Its empire continued to grow, reaching its greatest extent in the late second century CE.

The Punic Wars

In the First Punic War (264–241 BCE), the Romans defeated Carthage, a powerful North African naval and trading city that had colonies around the Mediterranean. Rome's victory gave it control of Sardinia and Sicily and weakened a trading rival.

The Second Punic War (218–202 BCE) began when the Carthaginian general Hannibal led an invading army, including 40 elephants, over the freezing Alps and down into Italy (see Source 2). In major battles at Trebia, Lake Trasimene and Cannae, Hannibal's force defeated Roman armies and gained allies in Italy. However, the Romans would not give in. On the advice of the general and consul Fabius Maximus, the Romans avoided further formal battles. When Rome launched counterattacks on Carthaginian Spain and North Africa, Hannibal's army had to return to defend their city. The Second Punic War ended with Hannibal's defeat at Zama in 202 BCE.

At the end of the Third Punic War in 146 BCE, following a long siege, the Romans finally captured Carthage. They destroyed the city totally. Every one of its people was killed or sold into slavery.

SOURCE 1 Hannibal's route and major battles in the Second Punic War



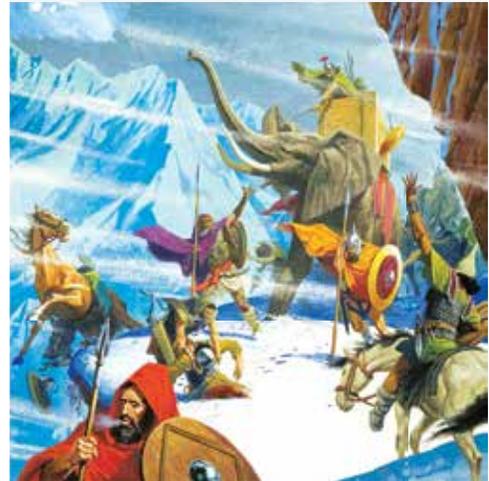
Source: Map drawn by Spatial Vision.

The Social War and the growing empire

In 91 BCE Rome's Italian allies united against it. Their main grievance was that Rome would not allow them to become Roman citizens even though they provided most of the empire's soldiers. This conflict is known as the Social War. The Italian allies lost the war but won the right to be Roman citizens.

By about 30 BCE the Roman Empire had grown to include most lands around the Mediterranean. It was extended far to the north when the Romans invaded Britain in 43 CE. They defeated the British tribes but were unable to defeat the tribes of Scotland. By 96 CE the empire extended to the Rhine and Danube rivers in northern Europe, and to Armenia and Mesopotamia in the east (see the map in section 18.6.3).

SOURCE 2 A modern artist's impression of Hannibal's forces crossing the Alps



myWorldHistoryAtlas

Deepen and check your understanding of the topic with the following resources and auto-marked questions:

🔍 Punic Wars

18.4.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Name the three major battles in which Hannibal defeated the Romans.
2. How did Fabius Maximus outmanoeuvre Hannibal?
3. What caused the Social War?
4. How far north did the Roman Empire extend by 43 CE?

Using historical sources as evidence

5. Use Sources 1 and 2 and an atlas to:
 - (a) list the modern countries through which Hannibal's forces would have reached Italy
 - (b) describe the hazards of Hannibal's route
 - (c) suggest what this strategy might tell us about Hannibal as a military leader.

18.4 Putting it all together

Identifying continuity and change

1. In modern times, how would we describe a power that massacred and enslaved the entire population of a city, as the Romans did the people of Carthage?
2. Hold a class discussion on the following question: Should we judge the actions of people from the ancient past by the moral standards of our own age?

Analysing cause and effect

3. Identify the trade advantages, especially in sea trade, that Rome would have gained as a result of destroying the power of Carthage.

As the area under Roman control grew, a bigger and better organised fighting force was needed. In 396 BCE soldiers began to be paid, marking the start of Rome's professional army.

The Roman army was one of the most disciplined military forces that has ever existed. Men between the ages of 17 and 22 enlisted for around 20 years. They had to be fit.

18.5.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why did the Roman army originally fight only between spring and autumn?
2. What began to change in the Roman army from 396 BCE and why?

Using historical sources as evidence

3. Use Source 1 to do the following.
 - (a) Sketch and label a diagram of a testudo.
 - (b) Explain what was meant to happen when a Roman javelin pierced an enemy's shield.
 - (c) Discuss why the tactics and weapons shown in Source 1 made the Romans formidable enemies.

18.5.2 A Roman soldier's harsh life

Soldiers were not supposed to marry, although many did in secret. As well, their food and equipment had to be paid for from their wages. Extra soldiers, called **auxiliaries**, were provided by countries Rome had conquered.

When not marching or fighting, the soldiers, called legionaries, built camps, roads, walls and **aqueducts**. Sometimes camps were temporary; at other times, they became permanent forts that often developed into towns. They were always laid out the same way. This meant that soldiers knew how to build them and find their way around them.

SOURCE 2 The Roman historian Polybius reports that discipline in the army was harsh, with penalties that included death.

A court martial composed of the tribunes is convened at once to try [a soldier for being careless on patrol duty]. If he is found guilty he is punished by the bastinado. This is inflicted as follows: the tribune takes a cudgel [short, heavy stick] and just touches the condemned man with it, after which all in the camp beat or stone him, in most cases dispatching [killing] him in the camp itself.

Soldiers were often allowed to share the **loot** from a battle. Many were also given land when they retired. Such rewards helped to win support for military leaders who sought political power.

Organisation of the Roman army

Unit	Composition
Century	About 80–100 men
Cohort	Six centuries
Legion	Ten cohorts

DID YOU KNOW?

The harshest punishment in the Roman army was decimation. It means 'removal of a tenth'. If a unit of the army was considered guilty of mutiny or cowardice, its soldiers were divided into groups of ten. Each group drew lots to decide which one would be killed. The remaining nine soldiers then had to kill their unfortunate comrade, usually by clubbing or stoning him.

18.5.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What did Roman soldiers have to pay for out of their wages?
2. How were Roman soldiers employed when not fighting?
3. What benefits could soldiers receive and what was one motive of military leaders who provided such benefits?

Using historical sources as evidence

4. According to Polybius in Source 2, what punishment was given to a Roman soldier who was careless on patrol duty?
5. Why do you think such brutal discipline was used?

18.5 Putting it all together

Using historical sources as evidence

1. Imagine you are a new legionary. Using Sources 1 and 2 as a reference, write a letter to your family describing what you see as the good and bad aspects of life as a Roman soldier.
2. Use the internet to research and create an illustrated report on Roman siege engines and forts.

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 Complete this digital doc: Worksheet 18.3: Big and tough!

18.6 Citizens and rulers

18.6.1 Social divisions

After the Romans had expelled the last Etruscan king (c. 509 BCE), they introduced a system of government called a republic. In theory, all Roman citizens had a say in how the city was to be run. In practice, power was controlled by the rich upper classes. Over the next 500 years, however, more of the people got a say, although women and slaves still had no voice at all.

To qualify as a Roman citizen you had to be 25 or older, a male and freeborn (not born a slave). Whether or not you were classed as a slave depended on the status of your mother: if she was freeborn, so were you. Citizens could vote on the way Rome was ruled. They were also protected by Roman laws.

SOURCE 1 Romans from the first century CE, depicted on an altar held in the National Museum of Rome



Roman citizens were divided into two classes — **patricians** and **plebeians** (see Source 2). Patricians came from the small number of aristocratic families that had founded the Republic and tended to have both wealth and influence. Everyone else was a plebeian. This didn't stop some plebeians becoming very rich, but they rarely won the same influence as patricians.

There were many more plebeians than patricians, though, and in the fourth century the plebeians even went on strike to force the patricians to surrender some of their power!

One thing the plebeians won from this strike was the right to elect 10 men every year as tribunes, or 'protectors of the people'. The tribunes could *veto* (Latin for 'I forbid') what any other politician was trying to do. In theory, this veto was used to protect the interests of the ordinary people.

18.6.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Who could be a Roman citizen?
2. In theory, who had a say in how the Roman Republic was run?
3. In practice, which social class really ran Rome?
4. How did some of the ordinary people gain a share of power in the fourth century BCE?

Using historical sources as evidence

5. To which social class do you think the Romans in Source 1 would have belonged? Give the reasons for your answer.

18.6.2 Ruling the Roman Republic

Every year, Rome would elect more than 50 men to run the city. These men were known as **magistrates**, but they held office for only one year and they always had one or more colleague with the same degree of power. Roman politicians competed to get elected as more and more powerful magistrates. Once a man had held office as a magistrate, he became a member of the **Senate**. (The word *Senate* derives from the Latin *senex*, meaning 'old man'.) In theory, the Senate acted as a council of advisers to the consuls, but in reality they held much direct power. Meetings of the Senate were controlled by the consuls, the most senior magistrates (see Source 2).

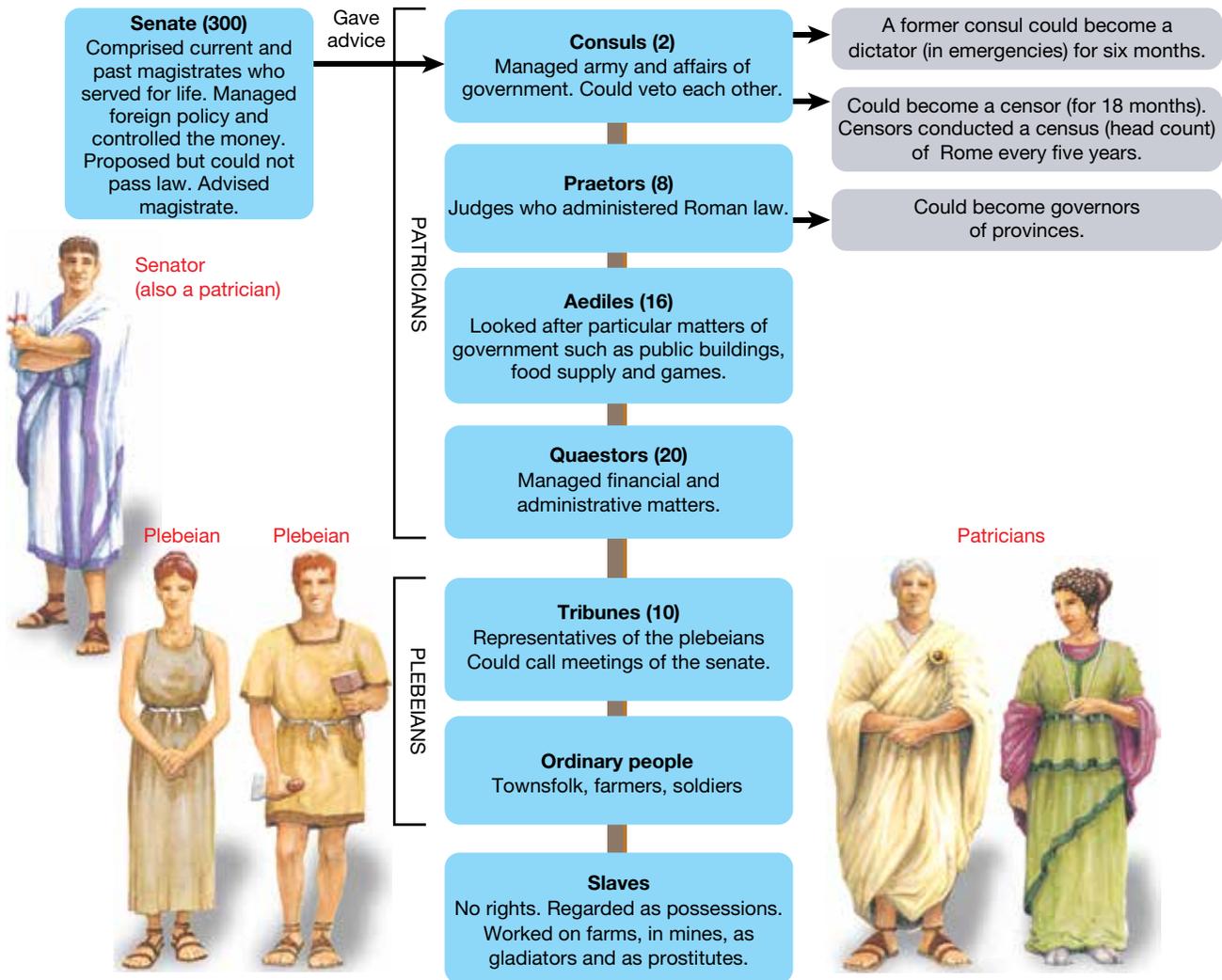
Voting in the Roman Republic

All citizens had the right to express their opinion by voting in one of several assemblies (similar to a modern parliament). These assemblies also elected the magistrates every year. Originally voting was by a show of hands, but eventually this public expression was replaced by a secret ballot. Citizens carved either 'V' (disagree) or 'A' (agree) on a small piece of wax. The pieces were then put in a container to be counted.

Democracy or not?

Although it might seem that the Roman Republic was a democracy, this was not so. When the republic first started, the plebeians, although citizens, had no real say, as their votes did not count as much as those of the patricians. This made the plebeians angry. In time, they set up their own assembly. The patricians were worried by this, as they knew that the plebeians (who had far greater numbers) could revolt and overrun them. So, eventually, the patricians let them elect tribunes to put forward their views. In 366 BCE a tribune became a consul for the first time; consul was the highest rank in the Republic. By 287 BCE all decisions of the plebeians' assembly were seen as lawful. Even so, the plebeians only ever had limited power compared with that of the patricians.

SOURCE 2 Magistrates would try to move up through the ranks as this increased their wealth and power.



DID YOU KNOW?

Every Roman province had to pay taxes to the Roman authorities. In 212 CE Roman citizenship was granted to all free subjects of the empire. The empire's growth meant slavery for many. On the other hand, conquered people often adopted Roman ways, including styles of housing and dress, and many benefited from peace and increased trade. This peace imposed by the conquerors was called the Pax Romana.

18.6.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What was a magistrate in ancient Rome?
2. How did a Roman become a member of the Senate?

Using historical sources as evidence

3. Using Source 2, describe the roles and powers of consuls, praetors, aediles, quaestors and tribunes.

18.6.3 From republic to empire

With increased wealth and opportunity, competition for power among the patricians also intensified, plunging the city into chaos. In 27 BCE the Republic collapsed. So began the age of the emperors (a single ruler, often chosen by the Senate, but ruling much like a king). Although Julius Caesar (100–44 BCE) was not an emperor, his career marks the turning point from republic to empire (see Source 3).

Julius Caesar

Julius Caesar outsmarted his political rivals and proved himself to be a brilliant general. His willingness to share the hardships of war, as well as the loot of battle, made him very popular with his soldiers. Using his loyal troops, Caesar seized power in 49 BCE by attacking the most powerful man in Rome, his great rival (and former friend) Pompey. In the ensuing civil war Caesar won control of Rome, and in 44 BCE he had himself appointed Dictator for Life.

Caesar or rex?

Rex is the Latin word for king. Romans had hated kings since before they had thrown out their Etruscan rulers in 509 BCE. After Caesar's defeat of Pompey and seizure of power, some senators accused him of acting like a king. Perhaps this is why he chose not to take the title of *rex*.

SOURCE 3 Profile of Gaius Julius Caesar (based on the writings of the Roman historian Suetonius)

- Born 100 BCE; died 44 BCE.
Class: patrician
- Well built, tall, fair hair, balding (combed his hair forward), dark brown eyes
- Very fit, but sometimes had epileptic fits
- Ambitious, but fair man who judged men on their fighting record
- Good at sword fighting, horse riding, public speaking, writing
- Often wore a wreath of laurel leaves on his head (as a sign of victory)
- Introduced the Julian Calendar, used for more than 1500 years
- Introduced a number of land, law, tax and social justice reforms



SOURCE 4 Suetonius's description of Caesar's assassination (Suetonius lived about 69–140 CE)

As soon as Caesar took his seat [in the Senate House], the conspirators crowded around him as if to pay their respects. Tillius Cimber ... came up close, pretending to ask a question ... caught hold of [Caesar's] shoulders. 'This is violence!' Caesar cried, and at that moment one of the Casca brothers slipped behind and with a sweep of the dagger stabbed him just below the throat. Caesar grasped Casca's arm and ran it through with his stylus; he was leaping away when another dagger caught him in the breast. Confronted by a ring of drawn daggers, he drew the top of his gown over his face ... Twenty-three dagger thrusts went home as he stood there.

Some of the senators who had survived the **civil war** decided they could not permit Caesar's power grab. They arranged for his murder on 15 March, 44 BCE. Among those involved in stabbing him to death were old and trusted friends such as Marcus Brutus.

DID YOU KNOW?

By contrast, Australia today is a true representative democracy. All its citizens now have the same rights and privileges, no matter what their gender, race or wealth. One of their rights is the right to vote. Australian citizens can have their own opinions and may express them without fear of being punished. Citizens aged over 18 can vote for politicians to represent them in government by marking a ballot paper issued during an election. Elections for Federal Parliament are usually held every three years. Federal Parliament consists of two houses — the House of Representatives and the Senate.

The Roman Empire

After Caesar's assassination, his great-nephew Octavian (later called Augustus) took control of Rome. Eventually, following a period spent eliminating his rivals, he declared himself emperor. As Augustus, he founded a dynasty (family of leaders) that ruled the empire until 68 CE.

The Roman Empire endured until 476 CE under a series of emperors who either were given the title by the Senate or simply seized power.

SOURCE 5 The Roman Empire at its peak. The empire consisted of a number of provinces, each ruled by a governor.



Source: Map drawn by Spatial Vision.

myWorldHistoryAtlas

Deepen and check your understanding of the topic with the following resources and auto-marked questions:

- 🔗 Roman Civil Wars
- 🔗 Roman Empire

18.6.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. When did the Roman Republic collapse?
2. How did Julius Caesar seize power?

Using historical sources as evidence

3. Using Source 3, identify and describe characteristics of Julius Caesar that would have helped his quest for power.
4. According to Suetonius in Source 4, how many Romans must have taken part in the assassination of Caesar?
5. How would you test the reliability of Source 4?

18.6 Putting it all together

Using historical sources as evidence

1. Using the sources and information in this subtopic, what features of Rome's society, political system and growth of its empire could have made it difficult for Rome to remain a republic?

Analysing cause and effect

2. In small groups, discuss whether Caesar's ambition and method of seizing power was the cause of his assassination.

Determining historical significance

3. Evaluate the significance of Julius Caesar in changing the history of Rome.
4. Do you think the concerns of the senators would have been shared by the common people? Why or why not?

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Complete this digital doc: Worksheet 18.4: The Roman republic

18.7 Spartacus and Nero: two significant individuals

18.7.1 Spartacus: leader of the great slave uprising

No two leaders could have been less alike, nor could they have played more different roles in Rome's history, than Spartacus the slave and Nero the emperor. Spartacus was a gladiator who led a massive slave rebellion that spread fear through Rome. Nero has long been regarded as a cruel and wasteful tyrant who became a symbol of the worst aspects of Roman power.

As the Roman Empire grew, so did the number of captives who were sold into slavery. Rome's wealth was built on slavery, and slaves usually had the most miserable lives of all people in its empire. Many slaves

SOURCE 1 A Roman stele (funerary monument) of a freedman (former slave), dressed in a toga, and his freedwoman wife



worked on the estates of rich Romans. Others were servants. For the slightest act of rebellion a slave could be killed by **crucifixion**.

Those who suffered most were miners, prostitutes and gladiators. Mineworkers rarely lived past the age of 21. Prostitutes often died young from abuse or disease. Few gladiators lived for long, as they were trained to fight to the death for the amusement of Roman crowds (see Sources 2 and 3). Unlike many slaves, however, gladiators knew how to fight.

SOURCE 2 From an account of gladiators in combat by the Roman historian Seneca (4–65 CE)

I arrived at the Colosseum in the middle of the day ... No sooner has a man killed his rival than the crowd shout for him to kill another, or be killed. In the end every fighter dies ... why watch their sufferings?

At Capua, south of Rome, in 73 BCE an event took place that started a rebellion that shook the Roman Empire. It began when a group of gladiators overpowered their guards and escaped. Their main leader was a **Thracian** gladiator called Spartacus. Their numbers soon grew to thousands as they freed other slaves and taught them how to fight. They defeated each Roman legion that was sent to crush them, and by the following year the rebel force numbered about 10 000 and was growing fast as it raided Roman towns and freed more slaves. Panic spread through Rome.

The rebels were finally defeated. Two of their groups were wiped out by Roman legions. The main rebel force under Spartacus was at last defeated in a pitched battle in which as many as 60 000 rebels may have died fighting (see Sources 4 and 5). Six thousand were taken prisoner. As an example to others who might consider rebellion, the entire 6000 were crucified along the road from Capua to Rome.

SOURCE 3 A fragment of a relief sculpture depicting two gladiators named Scholasticus and Damascenus. It is from the third century CE. The sign θ indicates that Damascenus died in the fight. Most gladiators' lives ended this way, although a few very successful fighters were able to buy their freedom.



SOURCE 4 From an account of the slave revolt by the Greek historian Plutarch (c. 46–120 CE)

Spartacus ... was a Thracian from the nomadic tribes and not only had a great spirit and great physical strength, but was ... most intelligent and cultured ... Spartacus had grown to be a great and formidable power but ... could not expect to prove superior to the whole power of Rome, and so he began to lead his army towards the Alps ... His men, however, would not listen to him. They were strong in numbers and full of confidence ...

... both consuls were sent out to deal with what was considered a major war and a most difficult one to fight ...

SOURCE 5 From Plutarch's description of the final battles of the revolt

Crassus's troops killed 12 300 men, but he found only two of them who were wounded in the back. All the rest died ... fighting back against the Romans.

... Spartacus ... surrounded by enemies, still stood his ground and died fighting to the last.

DID YOU KNOW?

Slaves had no rights at all until a law of the Emperor Claudius banned the practice of torturing or killing them. In reality, however, this law often failed to protect them. A few educated slaves had fairly comfortable lives and some slaves were granted their freedom or were able to save enough money to buy it, but for most slaves life was harsh.

18.7.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Which group in Roman society benefited most from slavery?
2. What do you think would have been the worst jobs for slaves?
3. Why were the gladiators able to launch a slave revolt?

Using historical sources as evidence

4. Freedmen and freedwomen were former slaves. The toga was a sign of Roman citizenship. How does Source 1 provide evidence that some slaves were able to advance in Roman society?
5. Read Source 2.
 - (a) How can you tell that not all Romans approved of gladiatorial combats?
 - (b) Do you think many Romans would have shared Seneca's perspective? Why do you think this?
6. Using Source 3 as your evidence, how long do you think a gladiator's career would be likely to last?
7. Read Sources 4 and 5. Explain what these sources say about:
 - (a) how big a threat the slave revolt posed to the power of Rome
 - (b) why Spartacus was finally defeated
 - (c) the courage of Spartacus and the other rebels.
8. Imagine you are a slave who has joined Spartacus. Write a letter to your fellow slaves telling them your reasons.

18.7.2 Nero: emperor, party-thrower and murderer

Nero Claudius Caesar Drusus Germanicus was the adopted son of Emperor Claudius. Nero was just 17 when he became emperor in 54 CE after his mother, Agrippina, had Claudius poisoned. At first Nero behaved like a competent and fair ruler but within five years he had murdered his step-brother and his mother and divorced his wife and step-sister Octavia, who he later murdered.

Nero sought popularity by spending vast sums of money raised by taxes on parties and public spectacles. Among the many terrible things attributed to him, Nero had high-ranking senators tortured and killed for treason so that he could confiscate their property to fund his wasteful lifestyle. By 68 CE, Rome's provinces rebelled against him. Fearing execution, Nero committed suicide.

SOURCE 6 An account of Nero's lifestyle by the ancient Roman writer Suetonius (c. 69–140 CE)

He gave an immense variety of entertainments ... parties, chariot races in the Circus, stage plays, a gladiatorial show ... and actually raced four-camel chariots! At the Great Festival, as he called the series of plays devoted to the eternity of the Empire ... all kinds of gifts were scattered to the people ...

Nero practiced every kind of obscenity, and ... finally invented a novel game: he was released from a cage dressed in the skins of wild animals, and attacked the private parts of men and women who stood bound to stakes.

SOURCE 7 An extract from Alexander Canduci, *Triumph and Tragedy: the rise and fall of Rome's immortal emperors*, published in 2010

Nero was a conundrum [riddle]. His creative and artistic side sat uneasily next to his bloodthirsty paranoia [mental illness marked by fear of being persecuted] and ... disregard for others ... In the aftermath of the fire [the Great fire of Rome in 64 CE], rumours spread that Nero was the culprit who had started it. In order to throw suspicion off himself ... Nero ... began a campaign against the Christians ... feeding them to the beasts at the great games, crucifying them and setting them alight.

SOURCE 8 An extract from an article written by Robert Draper 'Rethinking Nero', published in *National Geographic* in 2014

The case against Nero ... would appear to be open and shut. And yet ... his death was followed by outpourings of public grief ... mourners long continued to bring flowers to his tomb ...

The dead do not write their own history. Nero's first two biographers, Suetonius and Tacitus, had ties to the elite Senate and would memorialise his reign with lavish contempt ...

Nero's early reign was golden. He banished Claudius's secret trials, issued pardons, and when asked for his signature on a death warrant, moaned, 'How I wish I had never learned to write!'

SOURCE 9 The site of Rome's Circus Maximus, where, according to Suetonius, Nero drove a chariot in a race



18.7.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. How did Nero become emperor of Rome?
2. What crimes did he commit against his own family?
3. How did he gain popularity?

Using historical sources as evidence

4. For what two sides of Nero's character does Source 6 provide evidence?
5. Does Source 7 accept or support the view of Suetonius?
6. Source 8 questions the accepted view of Nero.
 - (a) How does it cast doubt on the reliability of Suetonius?
 - (b) What does it suggest about how the common people of Rome regarded the changes brought about by Nero?
 - (c) How does this interpretation differ from that of Source 7?
7. Look at Source 9, the site of the Circus Maximus, where Nero took part in a chariot race.
 - (a) Use the internet to discover what it looked like in Nero's time.
 - (b) Working in small groups, write a racing commentary on Nero's chariot race in a style that would have won favour with him.

18.7 Putting it all together

Identifying continuity and change

1. Identify and describe ways in which people's lives were changed by Nero.

Determining historical significance

2. Explain why Spartacus should be regarded as a significant individual in Roman history.

18.8 Living in the Roman Empire

18.8.1 Changing Roman society

Around 90 per cent of people in the Roman Empire were peasants who lived on farms or in villages. Far fewer lived in towns and cities. Wherever they were, the poor lived very differently from wealthy Romans. Some plebeians became wealthy through trade but most were skilled or unskilled workers, shopkeepers or **tenant farmers**. As more slaves were used, increasing numbers of poor citizens became unemployed. By contrast, wealthy Romans usually did no physical work and lived in luxurious villas with baths and even underfloor heating. As the empire grew, so did the gap between the rich and the vast numbers of the poor.

Large Roman towns were well planned, with government buildings and a **forum** where the citizens could gather. The city of Rome had expensive villas for the rich and fine government buildings. The rich feasted at banquets where they ate lying on their sides on couches while being entertained by dancers and musicians. Some made it a habit to overeat then vomit so they could continue to feast.

Meanwhile, the poor survived on bread and porridge and lived in rented slums without kitchens, toilets, heating or running water (see Source 1). Their drinking water came from public fountains and they washed in public baths. To keep the poor from rebelling, the ruling classes provided free grain, public baths and toilets and cruel forms of entertainment. They also encouraged the poor to live in colonies in conquered lands.

SOURCE 1 From a description of housing conditions of the poor by the Roman writer Juvenal, first century CE.

We live in a city shored up with slender props ... for that is how the landlords stop the houses from falling down.

The impact of slavery on social change

The main reason for the existence of large numbers of poor citizens in Roman towns was the vast number of conquered peoples who became slaves. The increased use of slave labour changed Rome from a society based mainly on small farmers to one based more on large agricultural estates owned by the very rich and worked by slaves. Many of the city-dwelling poor Roman citizens were displaced people who moved from the countryside to towns and survived on casual work or on the dole.

18.8.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What occupations were most plebeians engaged in?
2. Why did large numbers of plebeians become unemployed?
3. Draw a mind map to compare the lives of rich and poor in the Roman Empire?

Using historical sources as evidence

4. What evidence does Source 1 provide about the housing of the poor in Rome?

18.8.2 Roman culture

Rome produced a rich culture, but it was probably enjoyed by less than five per cent of the population. These Romans were influenced by the cultures of some of the peoples they conquered, especially the Greeks. From Greece, the Roman armies brought back paintings and statues. Rich Romans used Greek slaves to educate their children and to decorate their homes and public buildings with paintings, sculptures and statues. Many Roman statues of Roman leaders and gods were copies of Greek statues.

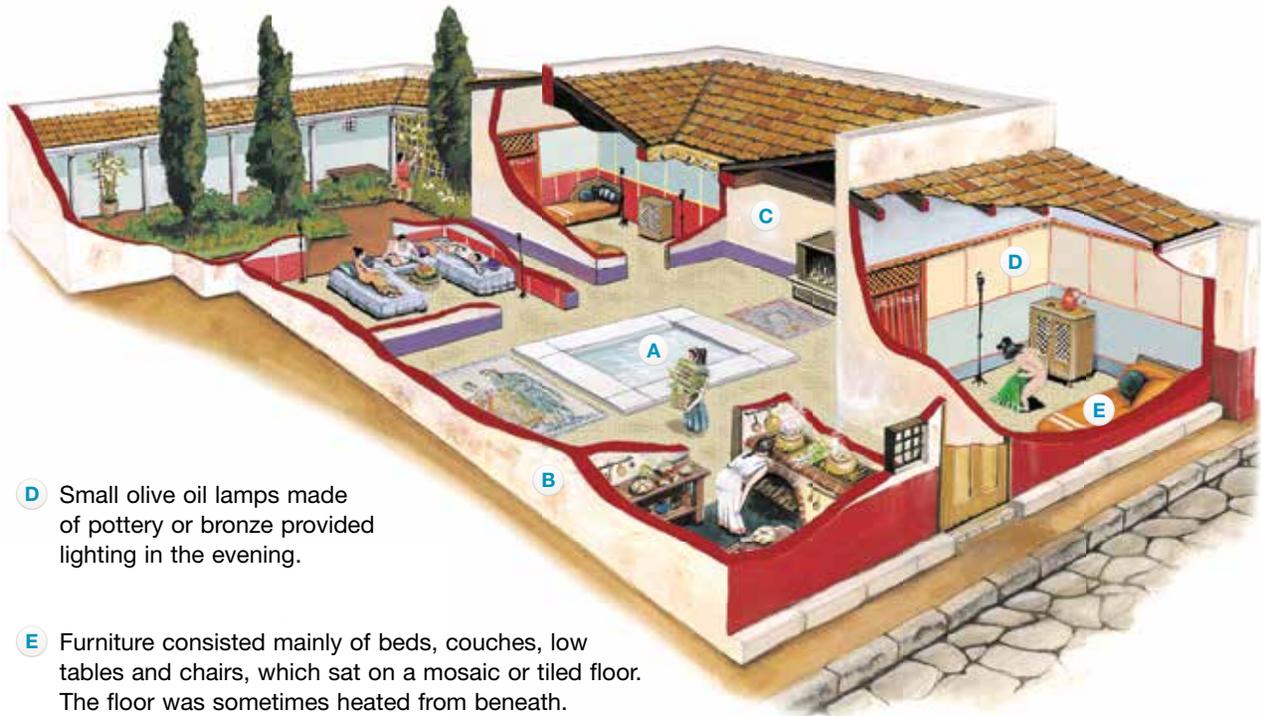
DID YOU KNOW?

Public entertainments included executions, live animal hunts, fights between tormented animals and contests between gladiators and animals. So many lions were captured for wild animal shows that the species disappeared in the Middle East.

The Romans adopted and imitated Greek literature. Homer's *Odyssey* was translated into Latin and plays were performed at festivals. Many of these plays were comedies that ridiculed everyday events. Roman writers produced histories, poetry and books on military tactics, law and medicine. Among the most famous was the poet Virgil. His greatest work was the *Aeneid*, which tells the story of Aeneas, who according to legend fled from the destruction of Troy and founded Rome. Virgil's success showed that some Romans could rise from poor backgrounds. He was the son of a peasant. Horace, another great Roman poet, was the son of an ex-slave. Both were encouraged by Augustus and benefited from the tradition of noble **patronage**.

SOURCE 2 A typical villa of the type occupied by wealthy Romans

- A The atrium, or central courtyard, contained a shallow pool. The pool was filled by rain that entered through an opening in the roof (through which light also entered).
- B The solid high external walls had few or no windows.
- C The lararium, or household shrine, was also usually erected in the atrium.



- D Small olive oil lamps made of pottery or bronze provided lighting in the evening.
- E Furniture consisted mainly of beds, couches, low tables and chairs, which sat on a mosaic or tiled floor. The floor was sometimes heated from beneath.

Virtues

Among the ideas of the ancient Romans, **virtue** was considered very important. Roman writers and philosophers praised such virtues as family values, patriotism and justice. In schools, boys were taught to read, write and use Roman numerals. They also learned **rhetoric** and logical thinking and studied the works of great classical writers.

DID YOU KNOW?

Roman fathers had total power over their families, including the power to kill their children or sell them into slavery. Girls received little schooling other than in household skills. Married women had few rights and could be killed if they committed adultery.

18.8.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe some ways in which privileged Romans were influenced by Greek culture.
2. What virtues were praised by Roman writers and philosophers?
3. What powers did Roman fathers have within their families?
4. How was the education of boys different from that of girls?

Using historical sources as evidence

5. Imagine you are a member of the wealthy Roman family who own the villa depicted in Source 2. Describe how you would furnish and decorate your house and what preparations you would make for your first banquet.

18.8.3 Roman technology

The Romans built some 84 000 kilometres of roads, as well as countless bridges, walls, aqueducts, temples and public buildings, including baths. They had no earthmoving equipment, steel cranes, power tools or computer-aided design, yet the way they built many of these structures was not bettered for nearly 2000 years (see Source 3 on the following page).

As the Roman Empire expanded, it became important to master the skills needed to build it, protect it and connect and service its various parts. Roads, walls and towns had to be built, and towns needed facilities such as water supply, toilets and **public baths**. Much of the work was done by the army. The Romans became so good at engineering and construction that many of their structures are still used today.

18.8.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What facilities were needed in a Roman town?
2. What did the Romans do about the risk of fires?

Using historical sources as evidence

3. Examine Source 3 (on the following page).
 - (a) Describe a Roman public toilet.
 - (b) Explain how aqueducts worked.
 - (c) Explain how public baths were heated.
 - (d) Draw and label a diagram to explain how Roman roads were built.
4. Use the internet to research the construction and features of one famous Roman structure. You could choose, for example, the Pantheon, the Colosseum, the buildings of the Roman Forum or the Baths of Diocletian.

SOURCE 3 The general layout of cities throughout the Roman Empire followed the pattern set for the city of Rome.

A Roman public toilets consisted of stone or concrete benches with holes in them. A channel of running water under the holes removed human waste. A sponge on the end of a stick was used for cleaning.

B Roman roads were usually straight, and often very long. They were usually laid on a bed of rubble, over which was poured a layer of concrete or gravel. Sometimes stone slabs were placed on top. They were slightly higher in the middle so that water and debris could wash off easily.

C The Romans further developed the **Etruscans'** arch to produce, first, the singletunnel vault (many arches joined together, one behind the other), then the cross-vault (two tunnel vaults crossing at right angles) and then the revolutionary dome.

D Aqueducts allowed water to flow down to a settlement by means of gravity. To ensure that the water flow did not stop, they had to be built very precisely.

E The Romans were also able to fire bricks, and to use building tools such as rulers, chisels, squares (to measure angles) and a surveying instrument called a groma. By lining up the two weighted strings on the end of each bar of the groma with landmarks, engineers were able to build roads that were straight and level.



F Domes were used on many public buildings, including some baths. The most spectacular example is the dome on the Pantheon, a temple built to all the gods in around 120 CE. Spanning 43 metres in diameter, it is still the second biggest in the world.

G Building was revolutionised when the Romans found out how to make concrete. It was discovered that when a volcanic dust called pozzolana was mixed with lime and water, it set into a hard material.

H People went to the public baths every day to wash and to socialise. The complexes contained hot and cold pools, saunas, reading rooms, hair salons, dressing rooms, exercise yards and shops. Some of them held thousands of people.

I The water in the public baths was heated by a **hypocaust**. Slaves kept large fires burning in the basements of buildings or outside them. The hot air was fed under the floors and up through a series of tunnels to heat some of the pools.

J Roman cranes were large wooden structures, powered by a big wheel turned by slaves.

DID YOU KNOW?

Roman engineering was so good that many Roman public buildings still stand. They supplied running water and sewerage to the homes of wealthy people who could afford pipes, taps and flushing toilets. Some blocks of flats for the poor, on the other hand, were so badly built that they fell down within a few years. Fires were such a problem in Rome that in AD 6 a fire-fighting force, called the Cohortes Vigilium, was set up.

18.8 Putting it all together

Using historical sources as evidence

1. How would you account for the housing of the poor being so inferior, as described in Source 1, when the Romans had the excellent building skills shown in Sources 2 and 3?
2. Imagine you are one of the plebeians driven from the countryside to the city and with no choice but to live in a slum like those described in Source 1.
 - (a) How would you feel about the social changes that had brought this about?
 - (b) How would you regard those who could live in a villa like that shown in Source 2?

Identifying continuity and change

3. Using the sources and information in this subtopic, explain how the growth of the Roman Empire changed Roman society.

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Complete this digital doc: Worksheet 18.6: Masters of technology

18.9 Death and the Romans

18.9.1 Beliefs and funeral customs

Death and the customs associated with funerals provide an enormous amount of primary source evidence for ancient Roman society and its values and beliefs. Roman cemeteries were located outside the boundaries of cities and the inscriptions and sculptures on tombs and altars along with writings about death reveal a lot of what Romans believed about honouring the dead and about souls and an afterlife.

On Roman ideas about life after death, we have the writings of just a few highly educated Romans and they expressed various different beliefs. However, at least some and possibly many Romans appear to have believed that souls went on living after the death of a body and that they might be judged in the afterlife. Sometimes a coin was placed in or over the dead person's mouth. This custom appears to have been adopted from the Greeks, who believed a coin was needed to pay the ferryman who transported souls of the newly dead across a river that separated the underworld from the world of the living.

Regardless of beliefs about an afterlife, Romans thought that they had a duty to care for their dead ancestors. When a family member died, their closest relative would close the eyes of the deceased and all family members would mourn, calling out the dead person's name. After the deceased person's body was washed and anointed it would be dressed in clothes that reflected their position in Roman society, for example, a deceased male citizen would be dressed in a toga.

SOURCE 1 This stele (upright stone slab) served as the grave marker of a Roman family group of former slaves with a male child.



Funeral processions took place between the deceased's home and the cemetery. Ceremonies were held at both places. They included chanting and a eulogy, which was a formal speech honouring the deceased. Families who could afford it would also sacrifice an animal in the presence of the dead body.

18.9.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe what family members did at home and at the cemetery following a family member's death.
2. What does the custom of placing a coin on or in a dead person's mouth reveal about:
 - (a) the influence of Greek myths on Roman ideas
 - (b) the belief, held by at least some Romans, in an afterlife?

Using historical sources as evidence

3. The child in Source 1 is wearing a toga, a symbol of Roman citizenship. Explain what this tells you about the possibility of moving up in Roman society.

18.9.2 Tombs and commemorations

Throughout most of the period of the Roman Empire, dead bodies were usually cremated and the ashes were kept in urns. But this was later mostly replaced by burial. If they could afford it, people would have the body of a dead family member placed in a sarcophagus (a stone coffin). Wealthy Romans often had very grand tombs that had several chambers for family visits. Poorer Romans had small, simple tombs. In the city of Rome, those who could not afford tombs used the Catacombs. These were large networks of tunnels cut into soft rock below the city.

Following funerals, the dead continued to be commemorated in several ways. An epitaph would be inscribed on the tomb, often recording the deceased's span of life and information about their family relationships, occupations and any public offices they held. Each year, the dead were honoured during the nine-day festival called the Parentalia. In addition, portrait busts of a dead family member were often made of bronze or stone to be displayed in homes of wealthy families.

SOURCE 2 An inscription on this sarcophagus reveals that it was donated by two Roman citizens to their friend. The figures on the sarcophagus are a cobbler (shoemaker) and a spinner (a maker of thread for cloth). It is probable that one of these occupations was that of the deceased and the other was that of the donors.



18.9.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What was a sarcophagus?
2. How different were the tombs and burial places of the rich and the poor?

Using historical sources as evidence

3. Form a hypothesis that might explain the gift of the sarcophagus in Source 2.

18.9 Putting it all together

Using historical sources as evidence

1. In a style that would appeal to their families, write a eulogy for any one of the figures in Source 1 or Source 2.

Identifying continuity and change

2. Use the sources and other information in this subtopic to explain some things about Roman society that we could discover from evidence about funeral customs. Use the following headings: attitudes to the dead, beliefs about an afterlife, occupations, social classes, changes enabling movement between social classes.

18.10 Roman law and religion

18.10.1 Roman law

In the period of over 1200 years between Rome's foundation in 753 BCE and the fall of the Western Roman Empire in 476 CE there were many changes that affected Roman society. None were more important than changes in law and religion.

It is probable that when Rome was ruled by Etruscan kings there were no laws other than a king's decisions. However, the system of government in the Roman Republic created the need for written laws to prevent the patrician class from always dominating matters of law and magistrates from interpreting the law unfairly. According to ancient Roman historians, in 451 BCE ten Roman citizens were given the job of recording the laws that were in practice. These laws were approved and adopted in 450 BCE as the Twelve Tables (see Source 1). These dealt mostly with the rights of citizens because women, children and slaves came under the authority of the male head of the family.

As Rome's society and economy became more complicated, new laws were added as the need arose. Roman law came to cover a huge range of matters that affected everyday life. These included crime and punishment, property, trade, industries, sex, slavery and politics. Although all Roman citizens were supposed to have the same rights under the law, the rich could often use bribery to get an advantage (see Source 2).

SOURCE 1 Three laws from the Twelve Tables

Table IV, law 2: If a father sell his son three times, the son shall be free from his father.

Table V, law 1: Females shall remain in guardianship [under the control of their fathers] even when they have attained their majority [became adults].

Table XI, law 1: Marriages should not take place between plebeians and patricians.

SOURCE 2 From the Roman writer Petronius, who lived in the first century CE

What use are laws when money calls the tunes and people without a gentleman's income have no real rights at all?

Changing laws

Over the many centuries of the Roman Empire, Roman law changed by many means. These included magistrates' decisions, decrees of the Senate, votes in the assembly, decisions of the jurists (a small group who were responsible for giving expert legal opinions) and edicts (orders) of emperors. Emperors increasingly

assumed powers to create completely new laws. For example, in 212 CE, Emperor Caracalla issued an edict giving Roman citizenship to all free people within the Roman Empire. During the age of the emperors, Roman law even became less harsh. New laws gave some protection to women, children and the poor.

18.10.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What were the Twelve Tables?
2. Why did the Roman Republic need written laws?
3. How did the nature of law-making change under the emperors?

Using historical sources as evidence

4. In Source 1, what do Table IV, law 2 and Table V, law 1 reveal about the powers of fathers over their children?
5. Why would the patricians have supported Table XI, law 1?
6. In 445 BCE, a new law allowed marriages between patricians and plebeians. What does this suggest about the growing influence of the plebeians and the ability of Roman law to change?
7. In Source 2, what did Petronius think about the fairness of the Roman legal system?

18.10.2 Roman religion

The Romans had hundreds of gods and goddesses. They usually tolerated the religions of people they conquered as long as those people were willing to pay homage to the Roman emperor. Romans believed that religion was closely related to government and that other religions were a danger only if they threatened Rome's authority. Roman religion did not tell people how to live better lives and there was no fixed belief about an afterlife. It was more concerned with performing rituals in return for protection from misfortune.

Roman state religion

The Roman authorities built temples to the gods, conducted regular rituals to please them, and organised

SOURCE 3 Some Roman gods and goddesses and their Greek equivalents

Jupiter
(Greek equivalent: Zeus)
King of the gods
Symbols: eagle, thunderbolt

Juno
(Greek equivalent: Hera)
Wife of Jupiter
Goddess of women, marriage and childbirth

Mars
(Greek equivalent: Ares)
God of war

Vesta
(Greek equivalent: Hestia)
Goddess of the hearth or fireplace

Venus
(Greek equivalent: Aphrodite)
Goddess of love and beauty

Neptune
(Greek equivalent: Poseidon)
God of the sea

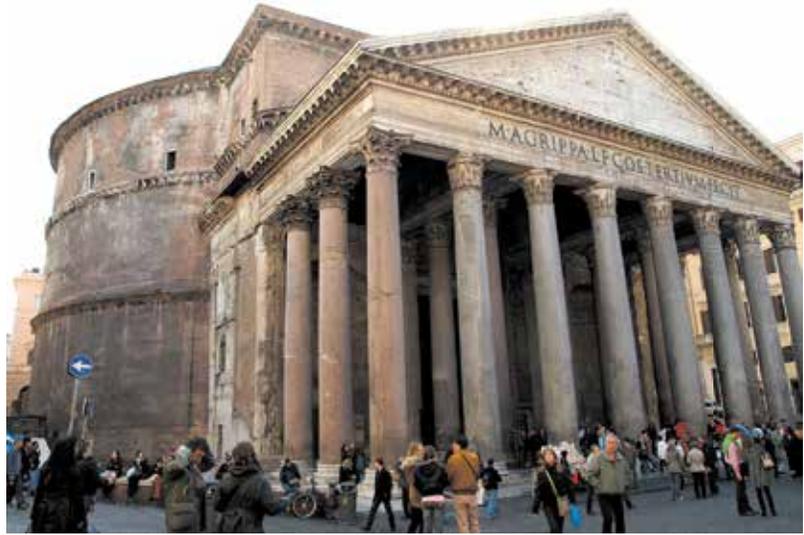
Mercury
(Greek equivalent: Hermes)
Jupiter's messenger
God of trade and thieves

religious festivals with processions, music and animal sacrifices. Roman homes also had shrines at which families sacrificed to their household gods.

Romans believed that it was important to know the will of the gods before political decisions were taken.

They believed that the gods sent signs, or omens; the skill of reading them was called **divination**. Methods of divination included studying the entrails of sacrificed animals, rolling dice, **astrology** and consulting oracles. Some oracles were inscriptions written on tablets. These were shuffled like cards by a child, who then gave one to the person seeking to discover the will of the gods.

SOURCE 4 The Pantheon, the largest Roman temple. It was built between 118 and 128 CE.



Adopted gods

As the empire expanded, Romans adopted more gods from the people they conquered, especially the Greeks. The Greek sea god Poseidon was identified with Neptune, the Roman god of water. The Greek god Zeus was identified with Jupiter, the most important of all Roman gods. Several Egyptian and Persian gods were also adopted. Mithraism, the cult of Mithras, the Persian god of light, held that there was life after death. Mithras was especially popular among Roman soldiers. When the Romans decided to worship Sulis, a goddess of the Celts, they equated her with the Roman goddess Minerva and changed her name to Sulis Minerva.

18.10.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What were the purposes of Roman religious rituals and festivals?
2. How did Roman religion change as the empire expanded?

Using historical sources as evidence

3. Using Source 3, list three Greek gods and/or goddesses and their Roman equivalents.
4. The Pantheon (Source 4) is considered an architectural wonder. What does the construction of such a building suggest about the importance of religion to the Romans?

18.10.3 The spread of Christianity

Christianity arose in Roman Palestine (Judea) in the first century CE. It was based on the teachings of Jesus Christ, a Jew who preached that he was the son of God and that through faith people could receive forgiveness for their sins and gain eternal life. Jewish religious leaders saw Jesus as a threat, so they had him arrested and condemned to death. When Pontius Pilate, the Roman governor, approved the sentence, Jesus was executed by crucifixion.

SOURCE 5 Account by the Roman historian Tacitus (c. 56–117 CE) of the persecution of Christians by the Emperor Nero

Dressed in wild animals' skins [the Christians] were torn to pieces by dogs, or crucified, or made into torches to be ignited after dark. Nero provided his Gardens for the spectacle, and ... mingled with the crowd ... Despite their guilt as Christians, and the ruthless punishment it deserved, the victims were pitied. For it was felt that they were being sacrificed to one man's brutality rather than to the nation's interest.

SOURCE 6 From the Edict of Milan, in which Emperor Constantine granted religious freedom. An edict is a formal command.

... no one whatsoever should be denied freedom to devote himself either to the cult of the Christians or to such religion as he deems best suited for himself ...

Jesus' followers continued to spread his teachings, which offered hope especially to slaves and the poor. Christianity did not encourage rebellion, but the Romans saw it as a threat because Christians refused to worship the emperor, recognising only the Christian god. Several emperors ordered persecutions of the Christians, including mass executions. This persecution ended when, in 313 CE, Emperor Constantine legalised Christianity. It became the state religion of the Roman Empire in 391 CE.

DID YOU KNOW?

Roman priests and priestesses were state officials who performed rituals to maintain the good will of the gods towards the Roman state. The most important priestesses were the Vestal Virgins, who kept the fire burning on the altar of the goddess Vesta. Vestal Virgins could be executed if they were found to have had sexual relationships.

18.10.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Where and when did Christianity begin?
2. Why did Christianity have a special appeal for slaves and the poor?
3. The Romans were tolerant of other religions, so why did they persecute the Christians?

Using historical sources as evidence

4. Using Source 5, describe types of punishments that were dealt out to Christians.
5. How can you tell that Tacitus disapproved of these punishments but also disapproved of Christians?
6. Read the extract from the Edict of Milan in Source 6 and explain why it was a turning point in Roman history.

18.10 Putting it all together

Identifying continuity and change

1. What would you identify as the most significant changes in Roman law and religion over the history of the Roman Empire?
2. How would key groups in Roman society (patricians, plebeians, slaves, Christians and non-Christians) have regarded these changes? For example, how would a Christian in 313 CE have felt upon reading the Edict of Milan?

- When Roman law was changed to make Christianity the state religion of the Roman Empire, persecution of Christians ended but it was replaced by persecution by Christians of those who followed the old Roman religion. What conclusions about continuity and change in religion and law can you draw from this?

Determining historical significance

- Use the internet and your library to find out how Emperor Constantine came to legalise Christianity and why he is considered to be a significant individual in Roman and religious history.

18.11 Decline and fall

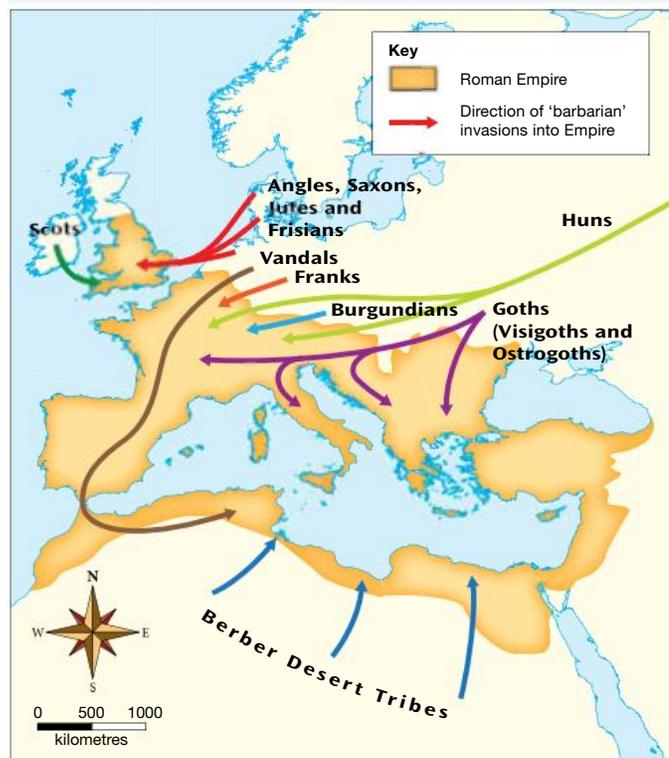
18.11.1 A weakening empire

The Roman Empire began to weaken from about 180 CE as rival Roman army generals fought each other for power. Trade that had enriched the empire began to decline as transport over long distances became more dangerous and tribes of **barbarians** increased their raids into the empire's lands.

In 284 CE Emperor Diocletian, a Roman general who had won power through his soldiers, divided Rome into Eastern and Western empires under two separate emperors. Diocletian believed this would create stronger government, but the problems remained. From 307 to 310 CE civil war raged as six rival emperors competed for power. The victor, Constantine, ordered the building of a new capital, to be called New Rome, on the site of the old Greek city of Byzantium. The city was soon renamed Constantinople (Istanbul in modern Turkey).

In 378 CE the Visigoths defeated Rome's armies. Emperor Theodosius (379–395 CE) agreed to allow them to form a separate state within the Roman Empire, while the Visigoths pledged to defend the empire's frontiers. Theodosius was more successful in reuniting the empire in 394 CE after the Western Empire broke away under a rival emperor. However, following the death of Theodosius the split into Eastern and Western empires became permanent.

SOURCE 1 The weakening of the Western Roman Empire. The arrows show the directions from which different barbarian groups invaded the empire.



Source: Map drawn by Spatial Vision.

18.11.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

- Why did Diocletian divide the Roman Empire?
- What event in 378 CE showed Rome's weakness?

Using historical sources as evidence

3. Study Source 1.

- Who were the peoples who threatened the empire?
- Which part of the empire did each group threaten?

18.11.2 The empire falls

There were vast movements of peoples through Europe in the fifth century CE. Burgundians and other 'barbarian' tribes invaded Gaul, while Angles, Saxons and Jutes from Germany and Denmark attacked Britain and Vandals, another Germanic tribe, invaded Spain. The Roman armies left Britain in 410 to defend the city of Rome, which was sacked by the Visigoths that same year.

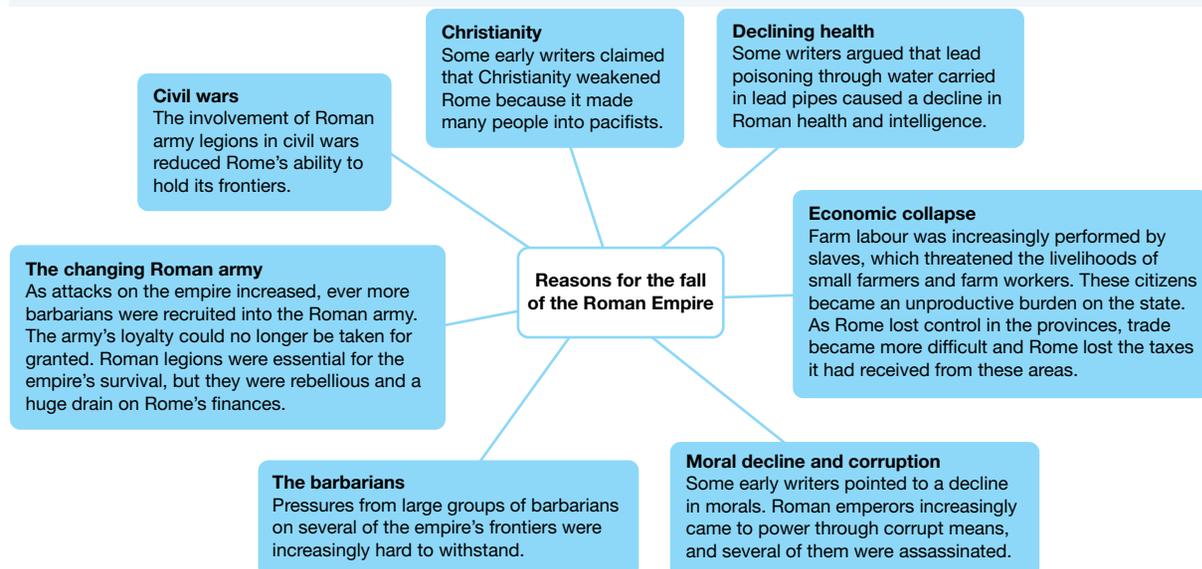
These invasions were not part of any general plan. Several barbarian groups who swept into the Roman Empire were fleeing other hostile tribes. For example, the Ostrogoths from eastern Europe were retreating before the Huns, who had overrun their homelands. This made it possible for Rome to form alliances with some groups against others. In 451 an alliance of Romans, Visigoths and Burgundians defeated the Huns. However, in 455 Rome was pillaged by the Vandals, and in 476 the last Western Roman emperor, Romulus Augustulus, was deposed by Odoacer, a German chief.

SOURCE 2 Detail from a mosaic of the third to fourth century CE found at the Villa dei Casale, Piazza Armerina, Sicily



Historians past and present have suggested several reasons for the fall of the Roman Empire. The following mind map outlines some of them. War and economic collapse stand out as the key reasons.

SOURCE 3 Reasons for the fall of the Roman Empire



18.11.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why did Rome abandon Britain in 410 CE?
2. What made it possible for Rome to form alliances with some barbarian groups against others?

Sequencing chronology

3. Create a timeline of developments that led to the fall of the Western Roman Empire.

Using historical sources as evidence

4. Source 2 depicts traders loading ships. Explain why declining trade would have been both a cause and a result of the weakening of the Roman Empire.
5. Identify reasons in Source 3 that you think would have contributed most to the decline of the Roman Empire.

18.11 Putting it all together

Using historical sources as evidence

1. Conduct research and present a report to the class on one of the barbarian groups that contributed to the fall of the Roman Empire.

Analysing cause and effect

2. Examine Source 3. What reasons do you think would have contributed the most to the fall of the Roman Empire?

18.12 Heritage of Rome

18.12.1 The Eastern Roman Empire and Christianity

As the Western Roman Empire collapsed, it broke up into kingdoms ruled by non-Romans, although many people in these states continued to see themselves as Roman. Europe was entering what have been called the Dark Ages. Wars were frequent, population levels fell and cities almost disappeared, along with long-distance trade and literacy. However, the Eastern Roman Empire lived on for almost another thousand years and Roman legacies survived to influence later ages.

When Odoacer deposed Romulus Augustulus, he had no wish to become emperor. Rather, he recognised the authority of the Eastern Roman emperor in Constantinople. The Eastern Roman Empire maintained Roman law along with its heritage of Greek and Roman culture. It kept Latin as the language of its court. In the sixth century the Eastern emperor Justinian tried to restore the Western Empire. He was successful, but only briefly. As the **medieval** Byzantine Empire, the Eastern Roman Empire lasted until 1453 CE, when Constantinople was overrun by the Ottoman Turks.

Roman Christianity

The adoption of Christianity as the Roman state religion changed the Christian Church more than it changed the Roman Empire. The power of Roman Christianity was now supported by the power of Christian Roman emperors. Until the late fourth century, many Romans continued to hold **pagan**

beliefs, and there were several different sets of beliefs within the Christian Church. Church leaders used the support of emperors to suppress rival interpretations of the Christian gospels, which were declared to be **heresy**. The continuing power of the Roman Christian Church was secured when Clovis, king of the Germanic Franks, gained control of Gaul and converted to Roman Christianity in the 490s. As the Christian Church outlived the Roman Empire, it helped to conserve Roman culture, which continued to be an important influence on ideas in medieval Europe.

SOURCE 1 A mosaic in Hagia Sophia, in Istanbul. This church was built on the orders of the great Eastern Roman emperor Justinian I (527–565 CE). The mosaic shows Emperor Constantine presenting the Virgin Mary with the city of Constantinople and Justinian presenting her with the Church.



SOURCE 2 From Hugh Trevor-Roper, *The Rise of Christian Europe*, 1966

In ... some respects ... the barbarians preserved rather than destroyed the Empire ... The barbarian Christian kings who rule over Italy, France and Spain in the fifth and sixth centuries still regard themselves as Roman ... they still acknowledge themselves subject to the emperor in the East; they still respect Roman traditions, Roman methods.

DID YOU KNOW?

Roman law continued to form the basis of law codes in much of Europe in the Middle Ages and even in modern times. The Roman language, Latin, is the basis of modern Italian, French, Spanish and Portuguese. There are also many Latin words in English.

18.12.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. How did the Eastern Roman Empire maintain Roman civilisation after the fall of the Western Roman Empire?
2. How was the power of the Roman Christian Church maintained?

Using historical source as evidence

3. Describe ways in which Sources 1 and 2 provide evidence of the continuation of Roman culture after the fall of Rome.

18.12.2 Passing on the culture

The classical books of ancient Roman writers influenced later writers. In the **Middle Ages**, Christian monks toiled at copying these books by hand. Many of these ancient writers are still widely read today. As Greek learning had been adopted by the Romans, the ideas of ancient Greece were also passed on. Latin, the language of the Roman Christian Church, became the language of the Church and of scholars in the Middle Ages. Despite the barriers caused by differing national languages, all educated writers and thinkers could communicate in Latin. Even today some sciences use Latin terms. For example, botany uses them to classify plants.

In the fifteenth century the Renaissance brought a revival of interest in Roman ideas, arts and architecture. Roman influences can be seen in many buildings constructed from that time until the twentieth century. In the eighteenth century, ideas and institutions from the ancient Roman republic influenced leaders who adopted new republican forms of government.

SOURCE 3 When the Pantheon was given to the Christians in 608, it was preserved with few changes apart from additions like this Christian altar.



DID YOU KNOW?

In the Roman calendar, the year was divided into 12 months, named after gods, emperors and numbers. The names we use for the months are based on theirs. For example, August is named after the emperor Augustus.

European unity

The Roman Empire was replaced by many different states. However, the idea of some kind of European unity was a legacy of the Romans. Around 800 CE a powerful king called Charlemagne united much of Europe in a huge empire that he tried to base on the Roman model. This empire fell apart soon after his death but in the twentieth century Europe was again unified through the European Community (EC).

18.12.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe the roles in preserving Rome's cultural heritage played by:
 - (a) Christian monks and scholars in the Middle Ages
 - (b) the fifteenth-century Renaissance.

Using historical sources as evidence

2. Look closely at Source 3 and explain how it provides an example of ways in which Rome's heritage has been preserved.

18.12 Putting it all together

Using historical sources as evidence

1. Conduct research to prepare a report on Roman numerals, why they still have some uses and why they are no longer used in mathematics.

Identifying continuity and change

2. Using the sources and information in this subtopic, create a mind map to show what big changes took place with the fall of Rome and what Roman influences continued.

learn on RESOURCES – ONLINE ONLY

 Complete this digital doc: Worksheet 18.7: Legacy

18.13 SkillBuilder: Analysing and corroborating sources

18.13.1 Tell me

What are the main ancient Roman sources?

Ancient Roman sources include temples, amphitheatres, houses, fortifications, roads, aqueducts, weapons, tools, coins and many written records. They also include artworks such as mosaics, paintings, statues and other sculptures in terracotta, stone and bronze.

Why is it important to analyse and corroborate ancient Roman sources?

Almost all our knowledge of ancient Rome comes from such sources. Works of art and writings tell us much about ancient Roman culture. Buildings and sculptures tell us about entertainment, technology, skills, religious ideas and values. Written records tell us about Roman ideas about politics, history, law and a vast range of other subjects. Not all ancient Roman sources are really primary sources as some were written long after the events they describe.

18.13.2 Show me

How do we analyse and corroborate ancient Roman sources?

When you study an ancient source you need to think carefully about the clues it provides and ask questions about its accuracy, usefulness and reliability. You need to ask questions such as:

1. What is it?
2. Who created it and when was it created?
3. Who or what was it created for?
4. For what aspect of ancient Roman history does it provide useful evidence?
5. Is the evidence it provides accurate and reliable and how can we tell this?
6. What conclusions can we draw from the source about ancient Roman society?

As you know, cruel public entertainments, including fights between gladiators, played a very big role in Roman life. Sources 1 and 2 are both relevant to this issue. In the following example, the questions have been applied to Source 1.

SOURCE 1 Written by the Roman Emperor Augustus (Octavian), who ruled from 27 BCE to 14 CE

Three times I gave shows of gladiators under my name . . . Twenty-six times, under my name or that of my sons and grandsons, I gave the people hunts of African wild beasts in the circus, in the open, or in the amphitheatre; in them about 3500 beasts were killed.

1. *What is it?* It is a written account of the number of gladiatorial combats and staged animal hunts paid for by Augustus.
2. *Who created it and when was it created?* The writer was Augustus, who became emperor of Rome in 27 BCE.
3. *Who or what was it created for?* As Augustus founded a dynasty, he was probably boasting to win popularity with other influential Romans.
4. *For what aspect of ancient Roman history does it provide useful evidence?* It provides evidence about issues of public entertainment in Roman society, ways in which Roman politicians and rulers won favour and Rome's treatment of animals and slaves.
5. *Is the evidence it provides accurate and reliable and how can we tell this?* Other sources would be required to verify such details as the number of combats paid for by Augustus. Many other sources confirm that such entertainments were frequent.
6. *What conclusions can we draw from the source about ancient Roman society?* Cruel public entertainments were frequent and popular in ancient Rome and they were often provided by political leaders to win popular support.

In the next example, the questions have been applied to Source 2.

1. *What is it?* It is a terracotta figurine of two gladiators.
2. *Who created it and when was it created?* We do not know who created this figurine. We only know that it was made in the first or second century CE.
3. *Who or what was it created for?* As quite a few gladiator figurines have been found they must have been made to meet a popular demand for decorative souvenirs of the games.
4. *For what aspect of ancient Roman history does it provide useful evidence?* It provides evidence about issues of public entertainment in Roman society and Roman attitudes towards gladiators. It also provides evidence of the different types of gladiators who took part in combats and of their popularity.
5. *Is the evidence it provides accurate and reliable and how can we tell this?* The accuracy and reliability of the source can be verified using similar sources (such as Sources 3 and 4).
6. *What conclusions can we draw from the source about ancient Roman society?* Cruel public entertainments were frequent and popular in ancient Rome but in a strange way gladiators also appear to have been admired in much the same way as modern football stars.

SOURCE 2 A terracotta figurine of two gladiators. The figurine is from the first or second century CE. By this time there were several different categories of gladiators, including the *hoplomoch* (with a circular shield) and the *thraex* (with a small rectangular shield). Several gladiator figurines have been found.



18.13.3 Let me do it

Use the six questions to analyse Sources 3 and 4.

SOURCE 3 A relief sculpture from Turkey, first century CE depicting three gladiators fighting a lion



SOURCE 4 A marble relief sculpture of two female gladiators named Amazon and Achilia. It was found in the ancient Roman city of Halikarnassos (in modern Turkey).



18.13 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Using historical sources as evidence

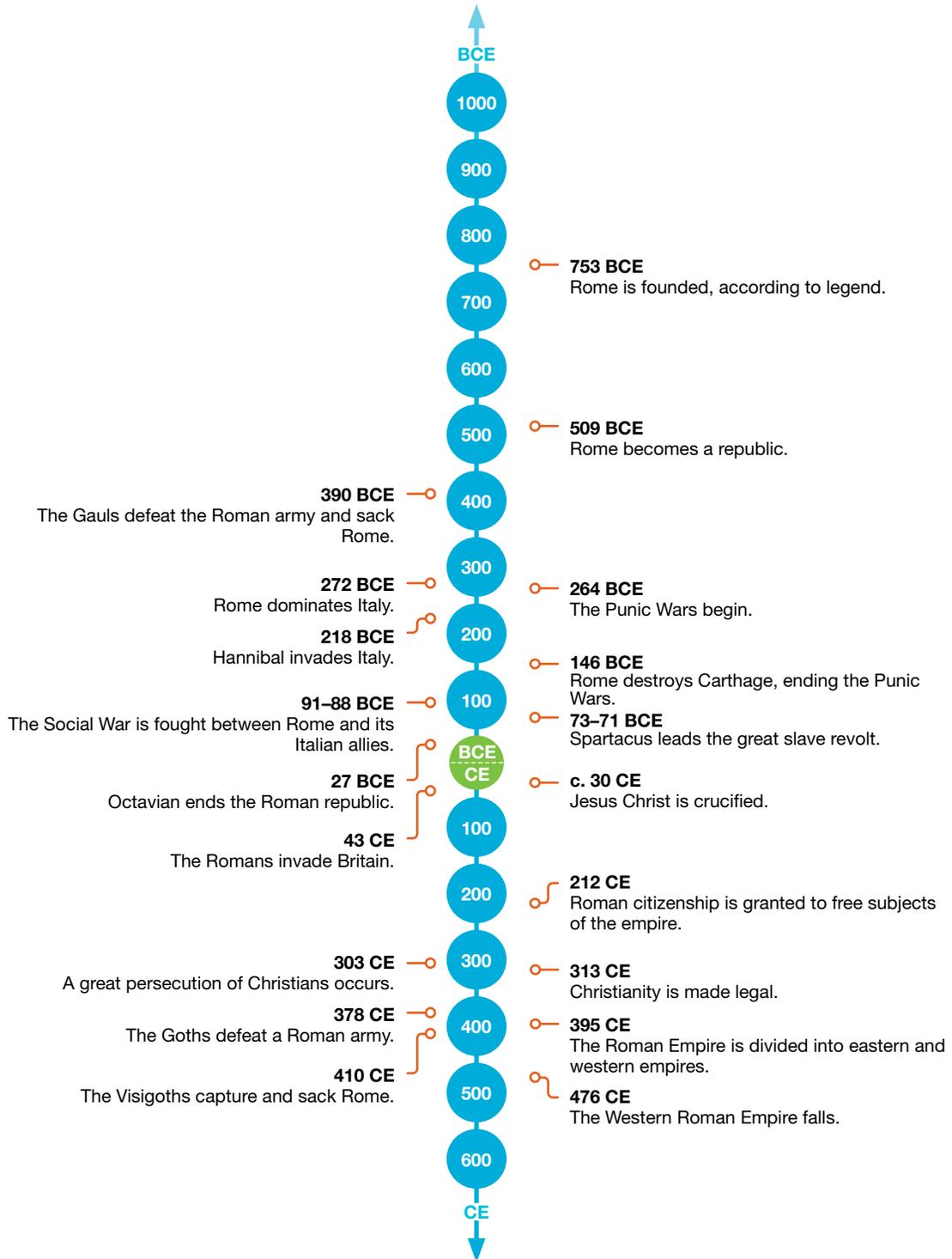
1. Explain how you would differentiate between ancient Roman primary sources and secondary sources.
2. Why is it sometimes difficult to judge the reliability of ancient Roman primary sources?
3. Why would Source 1, the extract from the Roman Emperor Augustus (Octavian), need to be questioned very thoroughly to assess its reliability?
4. In this SkillBuilder you have worked with a written account by a Roman emperor, a figurine and two relief sculptures. Identify four other types of primary sources that a historian could use for a study of ancient Rome.

18.14 Review

In this topic we have explored the history of ancient Rome. We have discovered how Rome grew from a collection of villages to become a mighty empire that dominated the known world for centuries, before declining as a result of internal divisions and pressures from outside.

18.14.1 Review

Chronology: timeline of ancient Rome



Key knowledge: Summary

18.2 Examining the evidence

- Ancient Romans left vast amounts of written evidence.
- Rome is also rich in archaeological evidence, ranging from artworks to entire cities.

18.3 The rise of the Romans

- According to legend Rome was founded in 753 BCE.
- In 509 BCE, the Romans rebelled against their Etruscan kings and founded a republic.
- Over the next two centuries, Rome expanded its power through alliances, wars, exploiting those it defeated and colonising strategically important places.

18.4 The spreading empire

- Through the Punic Wars between 264 and 146 BCE, Rome eliminated a major rival and became the strongest power in the Mediterranean region.
- By 96 CE, Rome had extended its empire into northern Europe and to the Black Sea.

18.5 The Roman army

- From 396 BCE, the Roman army became a professional fighting force.
- Roman army discipline was harsh.
- Rewards given to legionaries helped to win support for military leaders who sought political power.

18.6 Citizens and rulers

- Roman citizens were divided into patricians and plebeians.
- Julius Caesar used his loyal troops to seize power in 49 BCE but he was assassinated by a group of Roman senators.
- Caesar's great-nephew, Octavian, took control of Rome, ending the republic in 27 BCE.

18.7 Spartacus and Nero: two significant individuals

- Spartacus, a gladiator, led a slave revolt in 73 BCE. The rebels defeated several Roman legions before they were defeated in a huge battle.
- Nero became Roman Emperor in 54 CE. His brutal rule ended with his suicide in 68 CE.

18.8 Living in the Roman Empire

- Widespread use of slave labour changed Roman society.
- There were vast differences between the lives of rich and poor Romans.
- Greek culture influenced the lives of the more privileged Romans.
- Roman technology created many impressive structures that are still standing today.

18.9 Death and the Romans

- Customs associated with funerals provide a huge amount of evidence for ancient Roman beliefs and values.
- Care for dead ancestors was considered a duty and the dead were honoured in many ways.

18.10 Roman law and religion

- Roman law dealt mainly with the rights of men as citizens.
- Women, children and slaves were considered to be under the authority of the male head of a family.
- After the republic ended, laws were increasingly made through decrees of emperors.
- Romans had hundreds of gods and goddesses.
- Christianity went from being the source of persecution to become the state religion of the empire in 391 CE.

18.11 Decline and fall

- From around 180 CE, the empire began to weaken.
- Civil wars and barbarian invasions eventually led to the collapse of the Western Roman Empire.
- Historians have suggested many different reasons for Rome's fall.

18.12 Heritage of Rome

- The Eastern Roman Empire lived on for almost another thousand years.
- The Roman Christian Church helped to preserve Roman culture.
- The idea of European unity is one of many legacies of ancient Rome.

Key knowledge: multiple-choice topic test

1. Who were Rome's enemies in the Punic Wars?
 - (a) Etruscans
 - (b) Gauls
 - (c) Visigoths
 - (d) Carthaginians
2. How was Pompeii destroyed in 79 CE?
 - (a) Invasion
 - (b) Volcanic eruption
 - (c) Tsunami
 - (d) Disease
3. Tactics employed by the Romans to control their empire included:
 - (a) allowing conquered peoples to run the empire.
 - (b) giving gifts to those they conquered.
 - (c) using conquered peoples against one another.
 - (d) killing everyone they defeated.
4. In Roman society, patricians were:
 - (a) rich people.
 - (b) the poor.
 - (c) slaves.
 - (d) aristocrats.
5. What was the period from 509 BCE to 27 BCE known as?
 - (a) Roman Republic
 - (b) Roman Kingdom
 - (c) Roman Empire
 - (d) People's Republic of Rome
6. The Roman invasion of Britain took place in which of these years?
 - (a) 390 BCE
 - (b) 146 BCE
 - (c) 43CE
 - (d) 378 CE
7. People in Roman towns were supplied with which of these?
 - (a) Water, public toilets and public baths
 - (b) Free housing
 - (c) Banquets
 - (d) Transport
8. Spartacus was which of the following?
 - (a) A former Roman general
 - (b) A gladiator
 - (c) A Christian
 - (d) A Visigoth

9. The main reason why the Romans persecuted Christians was:
 - (a) Christians refused to worship the Roman emperors.
 - (b) Romans were intolerant of other religions.
 - (c) Romans already had too many gods.
 - (d) Christians stirred up rebellions.
10. Christianity was made legal under which of these Roman emperors?
 - (a) Augustus
 - (b) Nero
 - (c) Diocletian
 - (d) Constantine
11. Roman funeral ceremonies often included:
 - (a) eating and heavy drinking.
 - (b) prayers and hymns.
 - (c) chanting and a eulogy.
 - (d) a singalong.
12. 'Barbarian' groups that invaded Roman Britain included which of these?
 - (a) Huns
 - (b) Saxons
 - (c) Goths
 - (d) Franks

18.14.2 Respond

Using historical sources as evidence

1. Describe the features of the building in Source 1.
2. Why would such public facilities have been very important to the poor citizens of Rome?
3. What would have motivated Roman politicians and rulers to build such facilities?
4. Explain how this building is a useful source of evidence for Roman society.
5. Form a hypothesis about Roman building skills based on the fact that this building is still standing in Rome.

SOURCE 1 The Baths of Diocletian, in Rome



Identifying continuity and change

6. Working in small groups, use the internet and your library to research and write an illustrated guidebook for someone travelling from the outer reaches of the Roman Empire to Rome in the second century CE. You will also find information in modern travel guides for Rome, because Roman history is one of the main reasons that people visit the city. Your guidebook should include the following:
- *A map* of the city centre as it was in ancient times
 - *History*: a one-page outline of Rome's history up to the second century CE
 - *What to see*: a short guide to interesting sights — for example the Forum, the baths and the Colosseum
 - *Entertainment*: where a visitor might go for an afternoon's spectacle
 - *Religion*: what a visitor would need to know to avoid causing offence
 - *Currency, language and accommodation*. Remember that your guidebook is for ancient, not modern, visitors to Rome.

Responding to the big questions

At the beginning of this topic several big questions were posed. Use the knowledge and understanding you have gained through your study of the subtopics to answer them:

1. What can primary sources tell us about life in ancient Rome?
2. What were the main beliefs, values and cultural achievements of the ancient Romans?
3. What were some of the most significant events in the history of ancient Rome?
4. How were ancient Rome and its empire organised and governed?
5. What were the effects of conflicts within Roman society and between Rome and other societies?
6. What have been the legacies of ancient Rome?

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Try out this interactivity: Ancient Rome timeline (int-2938)



Complete these digital docs: Worksheet 18.8: Crossword, Worksheet 18.9: Summing up

TOPIC 19

Ancient India

19.1 Overview

Numerous **videos** and **inter-activities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

19.1.1 Links with our times

With more than a billion people, India has the world's second largest population. India's economy is growing rapidly and will soon

become the world's third largest. Yet while some Indians have become wealthy, there is still terrible poverty. Around half of Indian children do not have enough to eat.

India has also become an important trading partner for Australia. Large numbers of Indians have migrated to Australia, and many Indian students study at Australian colleges and universities.

When we speak of ancient India, we refer to the Indian subcontinent. Along with modern India, the subcontinent includes Pakistan, Bangladesh, Sri Lanka, Nepal and Bhutan. In ancient times these modern states did not exist. Great civilisations emerged on the Indian subcontinent, and some of their customs have survived to the present day.



Big questions

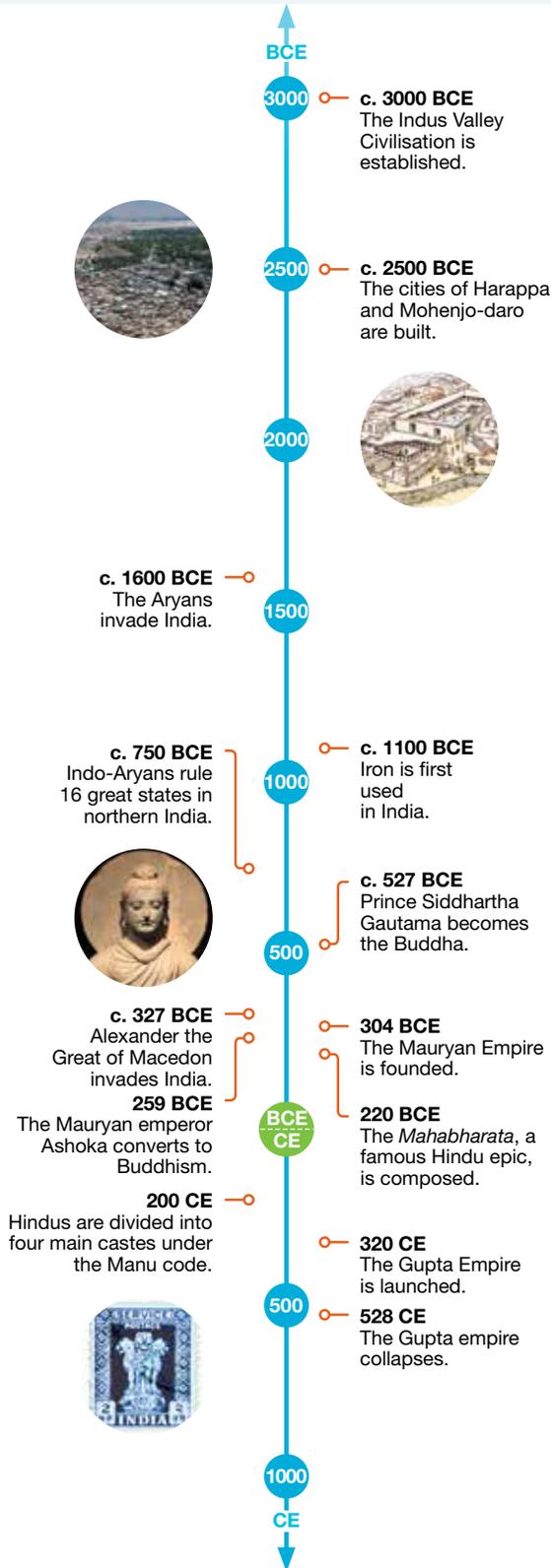
As you work through this topic, look for information that will help you to answer these questions:

1. Who were some of the most significant people in ancient India?
2. How did the geography of ancient India influence its civilisations?
3. How were ancient Indian societies organised and governed?
4. What were the main characteristics of Indian culture and religion?
5. How do written and archaeological sources help us understand ancient India?
6. Why did ancient Indian civilisations rise and fall?
7. What is the significance of the heritage of ancient India?

Starter questions

1. Why is India considered a land of contrasts?
2. How big is India compared to Australia?
3. Do you think all parts of India are the same?
4. What aspect of Indian culture would you like to learn about?
5. Why is modern India important to Australia?

A timeline of ancient India



INQUIRY SEQUENCE

- | | |
|---|-----------------------------|
| 19.1 Overview | online only |
| 19.2 Examining the evidence | online only |
| 19.3 The geography of India | online only |
| 19.4 Lost cities of the Indus Valley | online only |
| 19.5 Contacts and conflicts: India and the ancient world | online only |
| 19.6 The Mauryan Empire: India's first unified state | online only |
| 19.7 Ashoka the Great | online only |
| 19.8 The religions of ancient India | online only |
| 19.9 SkillBuilder: Analysing different perspectives | online only |
| 19.10 Review | online only |

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-  Watch this eLesson: Ancient India (eles-1839)
-  Complete this digital doc: Worksheet 19.1: Timeline exercise

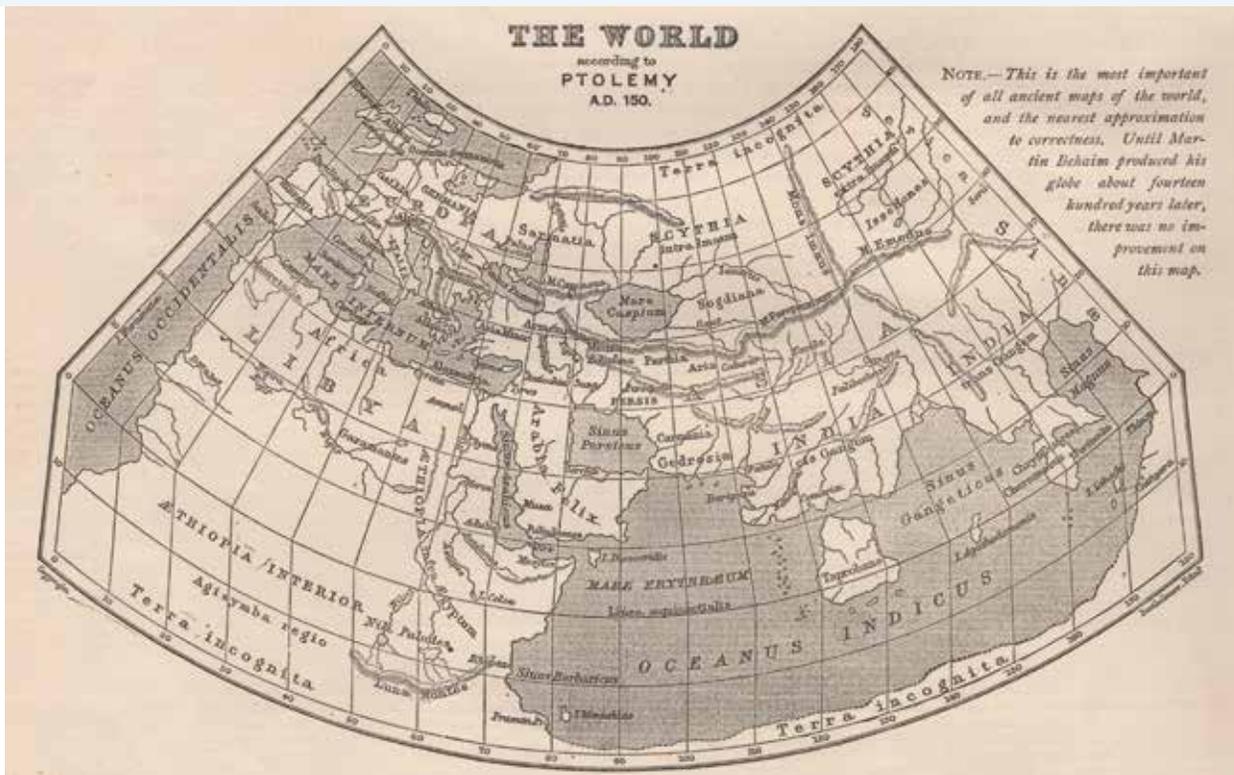
19.2 Examining the evidence

19.2.1 How do we know about ancient India?

Ancient India has a rich history spread over more than three and half thousand years. Over this time, many different civilisations have cast their influence over the subcontinent. The oldest of these, the Indus Valley Civilisation, originated in what is now known as Pakistan. Archaeologists know far more about later ancient Indian civilisations than they do about the Indus Valley. This is largely due to the fact that the first Indus Valley ruins were only discovered by archaeologists in 1921. Until this time, the remnants of this incredible culture lay hidden for thousands of years.

It is extremely difficult to find artefacts, records and information about many ancient civilisations. The main forms of information about ancient civilisations come from pottery, engraved stone artefacts and the walls of ancient structures. Some civilisations such as those from Rome, Greece, Egypt and China have left behind a considerable legacy of large-scale artefacts. The records we have from others civilisations, like the Indus Valley, have been more difficult to find. The Indus Valley Civilisation became known when archaeologists began to unearth two of its cities in 1921. Before this time no-one knew that these were the ruins of a very ancient civilisation. Most of what we now know about Indus Valley Civilisation has come from the excavation of three important sites: Harappa, Mohenjo-Daro and Lothal. These ancient cities will be examined later in this topic.

SOURCE 1 A version of the Greek mathematician Ptolemy's map of the world, which he drew about 150 CE



Evidence from other civilisations

We also have evidence of connections between ancient India and other civilisations. King Darius I of Persia is believed to have sent Greek explorer Scylax of Caryanda on a voyage to the East. On this voyage, Scylax travelled down the Ganges until it emptied into the Indian Ocean. Later, Alexander the Great conquered the Persian Empire in 334 BCE and then set his sights on India. Although his conquests were short-lived, they were significant enough to influence Buddhist art in northern India. Before Greek exploration, the Buddha was never depicted in human form. It is thought that the Greek focus on natural and realistic art influenced Indian artists to create **anthropomorphic** depictions of Buddha (see Source 3).

SOURCE 2 From *The Histories* by the Greek historian Herodotus, written about 440 BCE

[The Indians of the north-west] go out to fetch gold — for in this region there is a sandy desert ... the sand has a rich content of gold ... There is found in this desert a kind of ant of great size — bigger than a fox, but not so big as a dog ... [These] Indians plan their timetable so as to actually get their hands on the gold during the hottest part of the day, when the heat will have driven the ants underground ... When the Indians [on their camels] reach the place where the gold is, they fill the bags they have brought with them with sand, and start for home again as fast as they can go; for the ants (if we may believe the Persians' story) smell them and at once give chase; nothing in the world can touch these ants for speed, so not one of the Indians would get home alive if they did not make sure of a good start while the ants were mustering their forces.

SOURCE 3 Humanesque depiction of Buddha from Gandhara



19.2 Putting it all together

Using historical sources as evidence

1. Engravings from religious buildings provide much of the archaeological evidence we have from ancient India. List three strengths and three weaknesses of this form of evidence.
2. Read Source 2.
 - (a) List the observations Herodotus makes about India and its culture.
 - (b) Evaluate the accuracy of these observations.
3. Describe the depiction of the Buddha as shown in Source 3. Explain how this depiction differs from those seen in India before contact with the Greeks.

Identifying continuity and change

4. Compare Source 1 to a modern map of India. Identify and describe the key differences.
5. Identify one reason why the differences between Ptolemy's map and a modern map might exist.
6. Name three key cities of the Indus Valley Civilisation. Suggest why these cities are no longer as important to India as they once were.

Determining historical significance

7. It is easier for archaeologists to learn more about ancient Egypt than ancient India. Do you agree or disagree with this statement? Justify your response.

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 Complete this digital doc: Worksheet 19.2: You be the archaeologist

19.3 The geography of India

19.3.1 Region and climate

The modern nation of India is the seventh largest country in the world. This in itself is impressive. However, if you add other modern nations that were once a part of greater India — Pakistan, Bangladesh and the island state of Sri Lanka — then the Indian land mass is bigger still. It is so big that the region is often called the Indian subcontinent. A subcontinent is a very large land mass attached to a **continent**. In the case of the Indian subcontinent, the land mass is attached to Asia.

The Indian subcontinent is made up of three geographical regions: the Indian Himalayan Region, the Indo-Gangetic Plain and the Deccan Plateau.

The Indian Himalayan Region is part of the Himalayan mountain range. These mountains are the highest in the world and provide the snow that feeds into three of the subcontinent's major rivers — the Ganges, the Brahmaputra and the Indus. As it reaches the Bay of Bengal, the Ganges forms a delta that is 350 kilometres wide.

The Indo-Gangetic Plain is a flat, well-watered area. It is the most fertile and densely populated region of the subcontinent. Its western section is drier, merging into the Thar Desert.

The Deccan Plateau in the south is rocky and barren. Farmers here use the rivers to water their crops. Unlike the rivers of northern India, these southern rivers depend on **monsoon** rains to fill their banks.

Given its vast size and varied terrain, the Indian subcontinent has a wide range of weather patterns. The seasonal monsoons also influence its climate. There are six seasons each year: summer, autumn, winter, spring, summer monsoon and winter monsoon. In the Himalayan north, winters may be freezing and, in some areas, summers are cool. In the central and southern areas of the subcontinent, the tropical climate produces temperatures ranging from warm to hot, with some inland areas reaching as much as 50°C in summer.

India's geographical features had a strong influence on the location of its ancient civilisations. They developed mainly along river valleys that provided reliable water supplies, fertile soils for growing crops and access to the sea for trading. Such conditions were also seen in some of the world's great early civilisations, including ancient Iraq and Egypt.

SOURCE 1 A map of the Indian subcontinent



Source: Spatial Vision

19.3.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What is a subcontinent?
2. List the nations that make up the Indian subcontinent.
3. Name the three regions of the Indian subcontinent.
4. Name the three main rivers of the Indian subcontinent.
5. Which region tends to be cool to cold, and which regions tend to be warm to hot?
6. Explain how the rivers of the Indian subcontinent might have helped to develop a civilisation based on farming.

Using historical sources as evidence

7. Look closely at Source 1. Calculate the distance of the Indian subcontinent from east to west and from north to south.
8. Given the size of the Indian subcontinent and the variety in terrain and climate, do you think it possible that its population could share the same language and culture? Explain.

19.3 Putting it all together

Identifying continuity and change

1. Add the following features to a blank map of India (you may need to do some additional research to locate the areas mentioned):
 - (a) major geographical features (rivers, mountain ranges, plateaus, deserts)
 - (b) main areas of food production
 - (c) major cities
 - (d) two areas of high population density and two areas of low population density.

Determining historical significance

2. Describe the role that rivers have played in India's early history.
3. What other geographic features have influenced the development of ancient India civilisations?

19.4 Lost cities of the Indus Valley

19.4.1 The Indus Valley Civilisation

People have lived in the Indian subcontinent since the Old Stone Age. Some rock paintings found there date as far back as 50 000 BCE. The Neolithic Revolution, when people began to settle in farming communities, began about 7000 BCE. The first towns and cities in the subcontinent arose around 3000 BCE. They flourished for around 1400 years before their mysterious decline. For thousands of years all that was known was that people had once lived in the cities, but only the brick ruins remained. What sort of buildings they had been, who built them and what became of them — all of this was unknown.

As in Egypt and Mesopotamia, the first Indian cities were built in a fertile river valley, with good soils and a reliable water supply for growing crops. This was the valley of the Indus River and its tributaries. So this first civilisation, arising at much the same time as those in Egypt and Sumer (in Mesopotamia), has become known as the Indus Valley Civilisation. It is also sometimes called the Harappan Civilisation because Harappa was the first of its cities to be excavated.

SOURCE 1 The main archaeological sites of the Indus Valley Civilisation



Source: Spatial Vision

SOURCE 2 An Indus Valley stamp-seal, excavated at Mohenjo-daro (see Source 1). Seals were designed to leave an impression when pressed into wet clay. The imprint would be fixed to bundles of merchandise as merchants' marks.



The cities of the Indus Valley thrived. Farmers worked the fields surrounding the cities and officials organised the sale and distribution of agricultural produce. They had governments and used writing. Artisans created ornaments and tools, while traders plied their goods in boats up and down the river and its tributaries and even across the sea to Mesopotamia. Artefacts from Mesopotamia have been found in the Indus Valley. This means there were probably trade links between these civilisations.

SOURCE 3 An Indus Valley seal and its impression. Seals such as these have been found at the Mesopotamian city of Ur and other sites in that region. Similarly, seals from Mesopotamian cities have been found at Indus Valley locations such as the port city of Lothal. Animals found on the seals include rhinoceros, elephants, unicorns and bulls.



SOURCE 4 The Indus Valley Civilisation and Mesopotamia



Source: Spatial Vision

19.4.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Check your understanding

1. About how long ago did cities first emerge in the Indus Valley?
2. What geographical feature did the Indus Valley Civilisation share with ancient Egypt and Sumer (in Mesopotamia)?

Using historical sources as evidence

3. Look at Source 1.
 - (a) Why do you think the cities and other settlements (shown by dots) are mostly located along the Indus River and its tributaries?
 - (b) Why would Lothal be a suitable place for a port to serve these cities?
4. Consider Sources 2 and 3.
 - (a) Describe the similarities and differences between these two seals.
 - (b) Give two reasons for including both animals and writing on the seals.
 - (c) What conclusions can you draw about contacts between the civilisations of Mesopotamia and the Indus Valley?
5. Using the scale in Source 4, calculate how far people would have had to travel by sea and river to trade goods between the Indus Valley and Sumer.

19.4.2 Living in the lost cities

Our knowledge of the structure and function of cities during the Indus Valley Civilisation comes from several important archaeological sites. These cities have been well preserved and contain the remains of buildings and other pieces of important infrastructure. The largest Indus Valley sites that have been excavated are the cities of Harappa and Mohenjo-daro. Four hundred kilometres apart, both cities were based on a **grid system**, much like many modern cities. Each city was divided into 12 main blocks and had strong outer walls.

Many buildings were made of kiln-fired bricks similar, even in size, to the kinds of bricks used in many modern houses. Historians assume they used kiln-fired bricks because the Indus Valley had a wetter climate in those times. Such bricks were harder to make than mud bricks, dried only by the sun, but they were more durable in a wet environment. There is evidence that mud bricks were also used, but only the kiln-fired bricks have survived.

Most of the people of the Indus Valley would have been farmers. Cities could grow only where agriculture could produce a surplus to feed people who were not engaged in farming. So we know the farmers must have produced such a surplus. Excavations have given us some ideas about other kinds of work. Finds include seals, gold jewellery, combs, bronze statues and pottery. Such items would have been made by artisans in the cities and transported and traded by merchants.

Features of Mohenjo-daro

The grid system is clearly visible in the modern artist's impression of Mohenjo-daro shown in Source 5. There are two levels to the city. The first level is called the Higher Town or the 'citadel'. Although it looks like a citadel, or fortress, the Higher Town is actually a mound topped by a huge **granary** and communal baths.

The granary was positioned high above the floodplain and was immense. The inhabitants of Mohenjo-daro depended on this building and its vast stores of grain such as wheat and barley. The granary needed to be on high ground, beyond the reach of floodwaters. Ox-carts laden with produce would have been stationed in the recesses as workers raised produce to the platforms above. The surviving walls reveal a row of ventilation ducts. These allowed air to circulate inside to prevent the produce from going mouldy. The roof of the granary was probably constructed of timber and has long since rotted away.

A brick-lined, sunken structure is thought to have been an enormous bath. Traces of bitumen have been found in the bath, suggesting that it was sealed to prevent leakage. While we cannot know the purpose of the bath for certain, we can use contemporary knowledge of Indian customs to make an informed assumption. Ritual bathing is a common aspect of several Indian religions. We can also infer that as the bath has stairs and ledges the Great Bath was used for similar purposes.

The second level of Mohenjo-daro is the Lower Town. Here were the houses of the citizens. Like the buildings of the Higher Town, they are made of kiln-fired bricks. Larger houses often had courtyards. The windows faced inward and were high above ground level, ensuring privacy. A broad street, up to 10 metres wide, runs through the Lower Town, with narrower streets running off it.

SOURCE 5 A modern artist's impression of Mohenjo-daro. In the centre is the Great Bath and granary in the Higher Town.



SOURCE 6 The Great Bath of Mohenjo-daro



SOURCE 7 Structure believed to be a toilet at Mohenjo-daro



SOURCE 8 Large covered drain at Mohenjo-daro — tall enough for a person to walk through



SOURCE 9 A well at Mohenjo-daro



Harappa

Harappa has similar features to Mohenjo-daro. Their populations were also similar: Harappa's is estimated at 35 000 people and Mohenjo-daro's at 30 000. There is no evidence that a central government ruled the whole valley and used one of the cities as its capital.

There were many wells in Mohenjo-daro. These provided the population with fresh water for drinking and washing. They were constructed of special wedge-shaped bricks. Some bricks had a groove in them to make it easier to send down a bucket on a rope: the groove prevented the rope from slipping sideways and spilling the water. Mud brick often covered the walls of the wells. Most wells were built inside dwellings. However, wells have also been found adjoining the city streets.

For one of the world's first cities, Mohenjo-daro was remarkably **hygienic**. Many of the houses unearthed in the city had baths. Structures resembling toilets have also been unearthed. Many houses had drainage outlets onto the street, where gutters carried away waste water. Sometimes terracotta pipes were used. Chute systems were also used to expel water. Often a notched brick was placed at the end of the chute so solid waste could be trapped, preventing rubbish from accumulating in the street. Drains below the city streets were enclosed channels big enough for a person to walk through. This made it possible for workers to unblock the drainage system if the need arose.

19.4.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What two structures dominate the Higher Town at Mohenjo-daro?
2. What substance was used to prevent water leaking out of the Great Bath?
3. What sort of buildings were in the Lower Town of Mohenjo-daro?
4. Explain why the drains under the city streets were so big.
5. What was the purpose of wells at Mohenjo-daro?

Using historical sources as evidence

6. Look at Source 5.
 - (a) In a short paragraph, describe the layout of Mohenjo-daro as seen in this source.
 - (b) Why do you think the people of Mohenjo-daro would have needed such a huge granary for their produce?
 - (c) What does such a large single granary tell us about the way society would have been organised at Mohenjo-daro?
 - (d) From where would they have brought the produce to store in the granary?
7. Why do some historians suggest that the Great Bath shown in Source 6 was intended for bathing as part of some religious ritual?
8. Describe the features of the structures shown in Sources 7, 8 and 9 that could have led archaeologists to conclude that these are toilets, drains and wells.

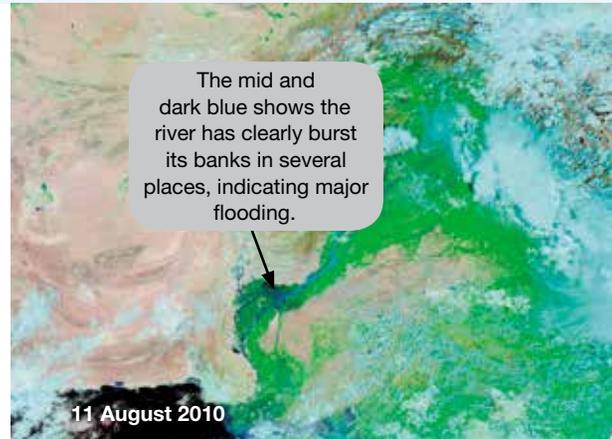
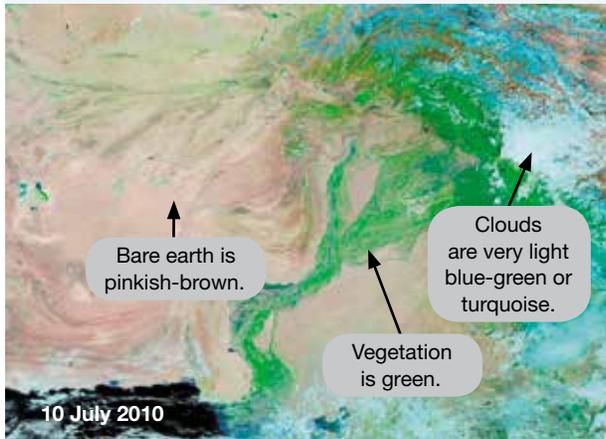
19.4.3 The end of a civilisation

The end of the Indus Valley Civilisation is another mystery. However, historians and archaeologists have at least formed some solid hypotheses about the last days of Harappa and Mohenjo-daro.

Originally it was thought that the Aryan invasion (see subtopic 19.5) led to the fall of the Indus Valley Civilisation. Few scholars now accept this theory. Firstly, the Indus cities had already been abandoned by the time of the Aryan invasion. Secondly, there is no evidence of warfare in or around the cities. There are none of the weapons, chariots, armour or remains of men and horses that would have been scattered across battlefields. Some skeletons found in Harappa that show signs of violent death were once thought to be the victims of Aryan invaders. The problems with this theory are that these victims do not occupy strata levels that coincide with the last days of the city itself.

The Indus River flows through an earthquake-prone region and has changed its course many times. Excavations reveal that in the last years of Mohenjo-daro there was a series of floods and that repairs were carried out in their wake. One earthquake blocked the Indus River downstream from Mohenjo-daro, resulting in the creation of a huge lake. This increased the flooding problems for the city. There is evidence that Mohenjo-daro was rebuilt at least seven times as a result of heavy flooding in the Indus River basin. Most recently, the disastrous floods of 2010 (see Source 10) threatened the site, although fortunately the floodwaters did not reach it. (These floods affected 20 million people; at one point as much as one-fifth of the modern country of Pakistan was underwater.)

SOURCE 10 NASA images from space showing the flooding of the Indus River in 2010. The top image shows the Indus River Valley on 10 July, just before the floods. The bottom image shows the valley on 11 August, at the height of the floods. These images combine infra-red and visible light to give us a clearer picture of the difference between water and dry land.



SOURCE 11 From Robert R. Raikes, 'The End of the Ancient Cities of the Indus', *American Anthropologist*, 1964

Uplift, almost certainly accompanied by more or less violent earthquake shocks, would not only have caused destruction of cities and settlements but would have disrupted the system of river and coastwise communications on which the commercial life of the culture must have largely depended. Damage to the cities and settlements in the Indus Valley would have been due rather to flooding than to the shocks ... a point would have been reached when it would no longer have been considered worth the trouble and expense of rebuilding ...

A gradual end?

Most historians now believe that the cities *were* gradually abandoned when it ceased to be practical to live in them, but that their culture lived on. Even today there are pottery styles in the Indus Valley similar to those of the ancient Indus Valley Civilisation. The ox-carts still in use, and the mud brick platforms around houses, would have been familiar to anyone from those ancient communities. So the Indus Valley Civilisation may not have come to an end after all. Perhaps its culture simply blended into, and became a part of, the rich array of cultures that now span the Indian subcontinent.

SOURCE 12 From Chris J. D. Kostman, 'The **Demise of Utopia**', *Journal of the Association of Graduates in Near Eastern Studies*, 1995

A careful review of the literature suggests that although the Harappans did experience great natural disasters and a dramatic [shift] in their urban process, they never declined or fell at all: the Harappan **legacy** continues to this day.

19.4.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. List two reasons why it is unlikely that the Aryans destroyed the Indus Valley Civilisation.
2. What two natural disasters affected the cities of the Indus Valley Civilisation?

3. What may have finally led to the cities being abandoned?
4. Where might the people have gone after abandoning their cities?
5. Outline the evidence that suggests the Indus Valley Civilisation was not warlike.

Using historical sources as evidence

6. How does the evidence of Source 10 support the idea that the Indus River can cause problems with flooding?
7. Why does the author of Source 11 say 'it would no longer have been considered worth the trouble and expense of rebuilding'?
8. The author in Source 12 mentions 'Harappans'. Who were the Harappans? (You will find out by revisiting earlier parts of the topic.)
9. According to Source 12, what became of the Harappans?

19.4 Putting it all together

Using historical sources as evidence

1. Compare the photo of the excavated Great Bath at Mohenjo-daro in Source 6 to the artist's impression of the same location in Source 5. Compile a list of the similarities and differences.
2. Review all images of archaeological sites in this learning module. Explain why it is difficult for archaeologists to determine the exact purposes of particular structures and buildings.
3. Compare the satellite images in Source 10 to the map in Source 1.
 - (a) Which ancient Indian city was flooded in August 2010?
 - (b) What could modern Indian governments do to protect this and other important archaeological sites from the dangers of flooding?

Identifying continuity and change

4. Explain how the cities of Harappa, Mohenjo-daro and Lothal were so well preserved.

Analysing cause and effect

5. Identify the reasons for the flourishing of human civilisation in the Indus Valley.
6. Compile a table that summarises the factors which contributed to the end of the Indus Valley Civilisation.

Determining historical significance

7. Rank the factors identified in question 6 in terms of their importance. Which factor was the most significant contribution to the decline of the Indus Valley Civilisation?

19.5 Contacts and conflicts: India and the ancient world

19.5.1 Trade during the Indus Valley Civilisation

From as early as 3000 BCE, members of the Indus Valley Civilisation had begun trading with the outside world. Home to unique and exotics items such as precious stones, hardwoods and spices, international trade developed quickly in the Indus Valley. Once word of India's riches had spread the region soon attracted explorers and traders from around the ancient world. However, India's abundance of resources also caught the attention of individuals with less peaceful intentions, such as Alexander the Great. Evidence of this contact and conflict has been uncovered in several locations around Europe and Asia. In ancient Mesopotamia **Indus seals** have been discovered, at the city Lothal we see one of the world's earliest ports and India features prominently in early Roman maps. In this subtopic, we will learn about ancient Indian civilisations and their contact and conflict with the outside world.

The lost cities of Harappa and Mohenjo-daro have provided us with incredible insight into the Indus Valley Civilisation. As we have seen previously, the archaeological remains of these sites reveal much about the social, religious and political features of the Indus Valley. Countless examples of Indus Valley Civilisation jewellery, pottery, everyday items and seals have been discovered at Harappa and Mohenjo-daro. These highly sought-after goods would have been traded with other civilisations across Asia and Europe. This begs the question of how this trade actually occurred. The answer can be found in the ancient port city of Lothal (see Sources 1 and 2).

Excavated from 1955 to 1960, Lothal is one of the oldest docks in the world. Goods from Harappa and other Indus cities were transported to the port at Lothal. Small compared to modern examples, the port was large enough to house boats capable of international journeys. Exiting the port via the ancient Sabarmati River, these boats then made their way down the Gulf of Khambhat and across the Arabian Sea. The Indus Valley traders may have then met with their Mesopotamia counterparts in what we now call Iran. The strongest evidence of this activity comes in the form of seals. A small block engraved with pictures and writing, seals were used to stamp pottery and other items. The fact that Harappan seals (see Source 3) have been found in places previously occupied by the Mesopotamians strongly suggests that trade occurred between these two civilisations. It is also interesting to note that activity at Lothal continued many years after the decline of Harappa and Mohenjo-daro.

SOURCE 1 A map showing the location of important cities of the Indus Valley Civilisation



Source: Spatial Vision

SOURCE 2 A photograph of the ancient dock at Lothal



SOURCE 3 Harappan pottery stamp seal (left) and modern impression (right): unicorn and incense burner



19.5.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe the route taken by traders leaving Lothal.
2. Explain what types of goods were traded from India.
3. Seals can be found on artefacts from many different civilisations across the ancient world. Explain the purpose of this practice.

Using historical sources as evidence

4. What evidence is there to suggest that trade occurred between the Indus Valley Civilisation and Mesopotamia?
5. Describe the seal shown in Source 3. Explain what you think is represented on the seal.
6. Look closely at the location of Lothal on the map in Source 1.
 - (a) Considering that it was a port town, what is strange about its location?
 - (b) Given the nature of the location of Lothal, suggest why this may not have been a problem during the time the port was in operation.

19.5.2 The Vedic Civilisation

The next civilisation to develop in India was named after a collection of sacred writings — mostly hymns, prayers and poems. These writings, called the *Vedas*, form the oldest books of the Hindu religion. They were written in **Sanskrit**, the language of this civilisation. The most important of these books, the *Rig-Veda*, was composed around 1000 BCE. The Vedic (sometimes called Aryan) culture came from western Asia. Some groups of Aryans moved westward into Europe. Others entered the Indian subcontinent around 1600 BCE.

The Aryans were warlike **nomads**. With horses and chariots they stormed across the Indus River Valley and the floodplain of the Ganges River. They had no interest in building cities such as those of the Indus Valley Civilisation before them. They were not united as a nation but rather were made up of numerous tribes, each ruled by a chief or *raja*. Often they fought among themselves.

With civil conflict common, the Aryans eventually divided their territory into 16 *mahajanapadas* or 'city-states'. Soon after this, a series of Persian leaders including Cyrus the Great and Darius I, invaded Northern India and the Indus Valley. With its strong and well-organised armies, the Persian occupation of India continued until that empire was defeated by the famed Macedonian ruler, Alexander the Great. Believing the Greek theory that the known world ended in India, Alexander invaded northern India and then swept through the subcontinent towards the Middle East. Although Alexander's Indian campaign was swift and ultimately successful, it also included one of his most costly battles: the Battle of Hydaspes.

SOURCE 4 Alexander's Macedonian and Greek army encountering an Indian army under the Hindu king Porus at the battle of the Hydaspes River



19.5.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What is another name for the Vedic Civilisation?
2. List ways in which the Vedic Civilisation was different from the Indus Valley Civilisation.

Using historical sources as evidence

3. Look closely at Source 4.
 - (a) Describe some of the weapons and the means of battle engagement.
 - (b) Why may the battle of Hydaspes have been so costly for Alexander the Great?

19.5.3 The Mauryan Empire

The Mauryan Empire is believed to have created the first unified Indian state. In 321 BCE a leader called Chandragupta Maurya set out to create an empire across the subcontinent. It is believed that he was inspired by the exploits of the **Macedonian** conqueror Alexander the Great. Alexander had tried to conquer India only a few years before. When he withdrew from western India, Alexander left a **power vacuum** in the region. Chandragupta took advantage of it.

Ashoka and Buddhism

The Mauryan Empire offered India stable government and a regulated economy. It was also during the time of the Mauryans that a system of writing was reintroduced. However, the texts that were popular in Mauryan times were not the traditional Hindu religious writings normally associated with this group. Instead, they were Buddhist. It was the ambitious and highly successful ruler Ashoka who was responsible for this change.

Ashoka was the grandson of the founder of the Mauryan Empire, Chandragupta Maurya, and he ruled when the Empire was at its peak. With a reputation as a fierce warrior, Ashoka expanded his family's empire until it covered most of the Indian subcontinent including modern-day Afghanistan and Bangladesh. However, the years of bloodshed took their toll on Ashoka and as a result he began to see the world differently. In 259 BCE, Ashoka converted to Buddhism, which was a relatively unknown religion at the time. He gave up his violent and warlike ways, embracing peace in accord with his new-found beliefs. He even sent Buddhist missionaries to other regions and assisted the spread of Buddhism in Asia. So the first known writings since the fall of the Indus Valley Civilisation were Buddhist religious texts.

The Mauryan Empire declined after Ashoka, and finally fell apart when its last ruler was assassinated. A turbulent period directly followed the fall of the Mauryan Empire. The ancient Greek and then Roman empires attempted to assert their control over the subcontinent.

First, it was the Indo-Greek rulers who invaded India. In nearly 200 years of rule, over 30 kings struggled to keep control over the region. Despite the tumultuous political events, Greek culture had significant effects on Indian life. In fact, as previously mentioned, it was the influence of Greek art that was responsible for the first representation of Buddha in human form.

The Roman Empire also had a strong connection to ancient India, particularly in the last stages of its rule. Trade between Rome and India was frequent and strong evidence of this relationship exists today. The Greco-Roman document the *Periplus of the Erythraean Sea* is a record of trade routes and partnerships that existed between Rome, North Africa and the Indian subcontinent (see Source 5). Archaeological evidence also exists at the southern India site of Arikamedu. Excavations at this site have revealed many Roman artefacts including unique Roman pottery, coinage, wine jugs, glass and stone beads, and other pieces of jewellery. Evidence suggests that these important relationships continued well into the reign of the Guptas — the so-called 'Golden Age' of India.

SOURCE 5 Seventeenth-century representation of the Periplus of the Erythraean Sea



SOURCE 6 An Indian silver coin (c. first century BCE) depicting the local ruler wearing a Roman-type helmet with bristles



SOURCE 7 Buddhist bas-relief in the Ajanta Caves, created during the Gupta dynasty



19.5.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Who was the first ruler of the Mauryan Empire?
2. What elements of society did the Mauryans offer the Indian people which they had not yet experienced?
3. Explain why Ashoka adopted the Buddhist faith.
4. Identify the foreign forces that attempted to control India after the fall of the Mauryan Empire.

Using historical sources as evidence

5. Create a timeline of the Mauryan Empire using the dates and events mentioned in this section.
6. What do Sources 5 and 6 suggested about Indian contact with the Roman Empire?
7. Using the library and the internet, research the Ajanta Caves (see Source 7). Explain what you have learned about them in your research.

19.5 Putting it all together

Using historical sources as evidence

1. Using the library and the internet, explore the battle shown in Source 4 and its outcome. This was the first time the Macedonian and Greek army had encountered elephants in battle. Find out how useful elephants were in situations like this. Also find out whether Alexander's army was impressed enough by the Indians' use of elephants to include them in their own armed forces.
2. Use Google Maps to locate the cities of Lothal and Arikamedu.
 - (a) Identify which port city would have been the most active.
 - (b) Explain your answer to part (a).

Identifying continuity and change

3. Create a table that summarises the accomplishments of the Vedic and Mauryan empires.

Analysing cause and effect

4. Explain the relationship (cause and effect) between the following events, people and/or beliefs.
 - (a) The writing of the Vedas
 - (b) The defeat of Alexander the Great
 - (c) Ashoka's brutal experiences of war
 - (d) The assassination of the last Mauryan ruler

Determining historical significance

5. Using the table created in question 3, evaluate the accomplishments of the Vedic and Mauryan empires. Which empire do you believe had the most significant impact on the development of Indian culture and beliefs? Provide historical evidence to support your arguments.
6. Evaluate the impact of foreign countries on ancient Indian society. Which other empire(s) had the greatest influence on the development of Indian culture, beliefs and traditions? Provide historical evidence to support your arguments.

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Complete these digital docs: Worksheet 19.3: Alexander in India, Worksheet 19.4: Indian battle giants

19.6 The Mauryan Empire: India's first unified state

19.6.1 Chandragupta Maurya and Kautilya

The Mauryan Empire, sometimes called the Mauryan dynasty, ruled over the Indian subcontinent from about 323 BCE to 185 BCE. The Mauryan emperors conquered a region reaching from Bangladesh in the east to Afghanistan in the west. This was the first state to stretch over most of the Indian subcontinent.

The dynasty was founded by Chandragupta Maurya. Little is known of his early life. However, we do know that he overthrew the last ruler of the preceding dynasty, the Nanda, with the aid of a former Nanda minister, Kautilya. It appears Kautilya helped Chandragupta raise an army against his former leader.

Kautilya is also credited with compiling a set of rules on running a government, called *The Arthashastra*. Some of these rules appear ruthless and cruel. For example, the punishment for murder was not just death but torture too. If you injured someone in a drunken brawl you would have your hand cut off. However, *The Arthashastra* also laid the basis for responsible administration. For example, Kautilya advised the ruler to meet every petitioner who entered his court, and not leave them to talk only to his officials. This, Kautilya said, would avoid confusion and discontent that might lead to rebellion, and would ensure satisfaction with the ruler's government.

SOURCE 1 Mauryan silver **medallion** from the second century BCE. It shows riders on an elephant, under a decorative umbrella. It is likely that they are part of a royal procession. Elephants have been used in India for both transport and heavy labour for thousands of years up to the present day. However, Mauryan emperors employed elephants in their armed forces as well. Ashoka is reputed to have had several thousand war elephants. They were used to destroy enemy fortifications and villages, as well as to trample infantry. Source 4 in subtopic 19.5 shows war elephants in action against Alexander the Great's army.



Kautilya's rules laid the basis for a powerful unified government across the subcontinent. The Mauryan Empire was divided into districts run by administrators whose duty it was to report to the emperor. It was their job to ensure law and order, provide troops for the army and collect taxes. The central government kept a network of spies to ensure that these district officers followed directions properly. In this way India became a single state under central rule. The state regulated the economy and introduced a standardised system of weights and measures.

The observations of Megasthenes

The efficiency of the Mauryan Empire under Chandragupta is described in the only written primary source apart from *The Arthashastra*. This is an account by a Greek ambassador, Megasthenes, from the Seleucid Empire. We know that Megasthenes visited the court of Chandragupta as a representative of the first Seleucid emperor, Seleucus Nikator, one of Alexander the Great's generals. The empire founded by Seleucus ruled over much of the old Persian Empire from 313 to 65 BCE. In Source 2, Megasthenes describes the wonders of Chandragupta's capital city, Pataliputra. According to Megasthenes, it was a vast and splendid city ringed with a high wooden wall and 570 towers.

SOURCE 2 From an ancient Greek account of a report by a Greek ambassador, Megasthenes, who had visited the Mauryan capital, Pataliputra, on a mission from the Seleucid Empire

Megasthenes informs us that this city [Pataliputra] stretched in the inhabited quarters to an extreme length on each side of eighty **stadia**, and that its breadth was fifteen stadia, and that a ditch encompassed it all round, which was six hundred feet in breadth and thirty **cubits** in depth, and that the wall was crowned with 570 towers and had four-and-sixty gates. The same writer tells us further this remarkable fact about India, that all the Indians are free, and not one of them is a slave.

SOURCE 3 **Bas-relief** from the Great Stupa of Sanchi. It shows what appears to be a festive scene from a Mauryan city.



The account Megasthenes wrote about India, called Indika, has been lost. What have survived are small infrequent references to it in the works of other Greek writers. Added together, these have helped us to build up a picture of India under Chandragupta Maurya.

Chandragupta extended the Mauryan Empire across the northern half of the subcontinent, expanding westwards into lands held by the Seleucid Empire. In 324 BCE he pushed Seleucid garrisons out of the Indus Valley. Seleucus Nikator tried to regain this region but was defeated in battle in 305 BCE. After Chandragupta's death his son Bindusara continued to extend Mauryan power. He conquered 16 kingdoms. But the ruler under whom the empire would grow to its furthest extent was the next emperor, Ashoka.

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Deepen and check your understanding of the topic with the following resources and auto-marked questions:

📍 Mauryan Empire

19.6.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Create a timeline and insert on it the events mentioned in this subtopic.
2. Who was the leader credited with creating the first unified Indian state?

Using historical sources as evidence

3. Describe what you believe is happening in Source 3. How does this source help us understand what life was like in the Mauryan Empire?
4. To what extent does Source 3 support Megasthenes' description of a Mauryan city in Source 2?

19.6 Putting it all together

Using historical sources as evidence

1. How do we know from Sources 1 and 3 that during the Mauryan Empire Indians relied heavily on the elephant? How was the elephant helpful to them?

Identifying continuity and change

2. Which empire did Chandragupta drive out of the Indus Valley, thus expanding the Mauryan Empire?
3. Identify and explain the administrative changes undertaken by Kautilya.

Analysing cause and effect

4. How do you believe the changes identified in question 3 allowed the Mauryans to control India?

Determining historical significance

5. It was Kautilya not Chandragupta who was responsible for the success of the early Mauryan Empire. Do you agree or disagree with this statement? Justify your response.

19.7 Ashoka the Great

19.7.1 The warrior repents

Chandragupta's grandson Ashoka was remarkable not only by the standards of ancient India. The famous and respected English writer H. G. Wells, in his book *A Short History of the World*, claimed that Ashoka was 'the greatest ruler in world history'! Often referred to as 'Ashoka the Great', in this subtopic we will see exactly why this ruler was so 'great' and why he was seen as such an important individual.

Like his predecessors Chandragupta and Bindusara, Ashoka was a warrior king. He was already a successful general under his father, putting down several rebellions. After their father's death Ashoka vied with his brothers for the throne, a struggle that Ashoka eventually won. Legend claims that Ashoka may have even killed his brothers during this conflict.

Over the next eight years Ashoka conducted wars of conquest that extended the Mauryan Empire to its furthest limits. His final military campaign was in Kalinga, a kingdom on the north-east coast of India. During this bitter campaign tens of thousands were slaughtered and the cities of Kalinga sacked.

SOURCE 1 A stamp issued on 15 August 1949, the second anniversary of modern India's independence. It shows lions on top of a pillar erected by Ashoka at Sarnath in northern India.



SOURCE 2 Another of Ashoka's pillars, this one with a single lion on top, at Kolhua. Behind it is a Buddhist stupa.

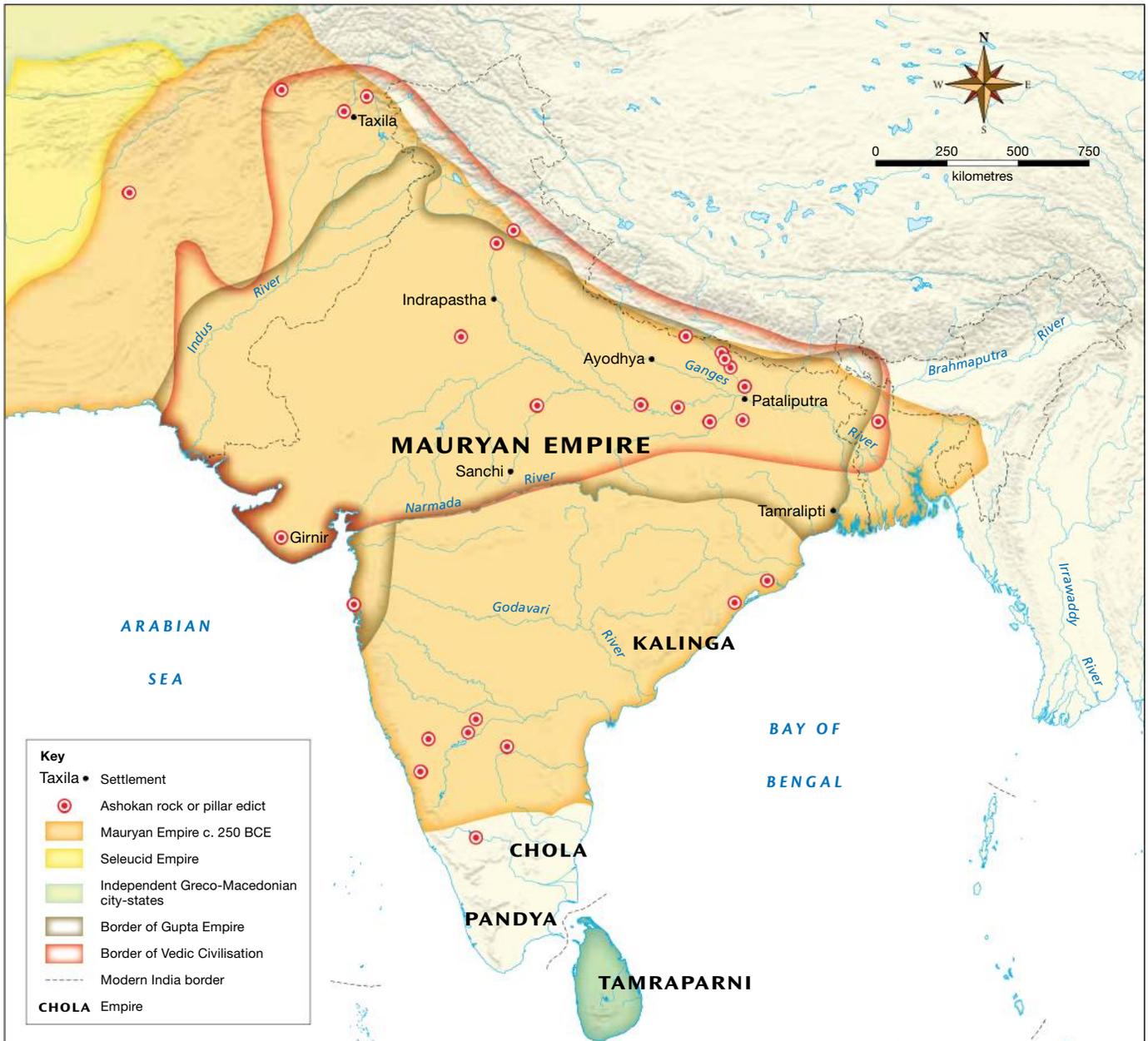


Then something truly amazing and profound happened to Ashoka. It is said that when Ashoka visited the battlefields and ruined homes of the Kalingans, the sight of so much death and suffering sickened him, and he vowed never to wage war again. Although he had probably already regarded himself as a Buddhist, he now underwent a complete transformation and devoted his life to Buddhist principles. Ashoka vowed to look after his people in the same way that a father looks after his children. To this end, he promised he would extend his empire no further through war. Instead, Ashoka sent missionaries to persuade people to live according to the moral principles of the Buddhist faith.

The edicts of Ashoka

Much of what we know about Ashoka's rule we learn from **edicts** inscribed on pillars and rocks that were erected throughout the empire. According to the edicts, Ashoka provided medical care for people and animals alike, and planted shade and fruit trees to be enjoyed by all. Sacrifices were banned, as was hunting, a sport that Ashoka himself had loved in his youth. The burning of forests for agriculture was banned, because this could harm animals that sheltered there. Ashoka also promoted a vegetarian diet to reflect his care and regard for the animal world. Many of the harsh punishments decreed by Chandragupta's chief minister, Kautilya, such as torture and the death penalty, were abolished. Parents, teachers, priests, servants and those practising religions other than Buddhism — all were to be equally respected.

SOURCE 3 Map of India showing the furthest extent of the Mauryan Empire, as achieved by Ashoka. Also shown are the sites where Ashoka erected his rock or pillar edicts.



The edicts of Ashoka can be seen as demonstrations of *dharma* (or *dhamma*) — the moral teachings upon which Buddhism is based. Essentially, dharma recognised the individual’s duties and obligations to both other people and animals, and to nature.

Following Ashoka’s death in 232 BCE, his son succeeded in bringing Buddhism to Sri Lanka, but such achievements failed to halt the rapid decline of the Mauryan Empire. Nonetheless, the Mauryan Empire had provided India with a model for a unified state and represented a high point in its history.

SOURCE 4 From the pillar edicts of Ashoka

Dhamma is good, but what constitutes Dhamma? [It includes] little evil, much good, kindness, generosity, truthfulness and purity. I have given the gift of sight in various ways. To two-footed and four-footed beings, to birds and aquatic animals, I have given various things including the gift of life. And many other good deeds have been done by me.

People see only their good deeds saying, 'I have done this good deed.' But they do not see their evil deeds saying, 'I have done this evil deed' or 'This is called evil.' But this [tendency] is difficult to see. One should think like this: 'It is these things that lead to evil, to violence, to cruelty, anger, pride and jealousy. Let me not ruin myself with these things.' And further, one should think: 'This leads to happiness in this world and the next.'

19.7.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What was Ashoka's relationship to Chandragupta?
2. How did Ashoka change after witnessing the appalling suffering brought about by war with Kalinga?
3. Where were the edicts of Ashoka inscribed?
4. What is dhamma?

Using historical sources as evidence

5. Examine Source 1. Why do you think modern India's government, on the second anniversary after independence, issued a stamp with one of Ashoka's pillars on it?
6. Why do you think Ashoka inscribed his edicts on monuments, as seen in Sources 1 and 2?

19.7 Putting it all together

Using historical sources as evidence

1. Explain how Source 3 supports the idea that Ashoka was trying to get his message across to all Indians through his edicts.
2. Discuss how Ashoka's edicts, as shown in Source 4, differ from the ideas of Chandragupta's chief minister, Kautilya, described in subtopic 19.6. How do you think Ashoka's subjects would have felt about these changes?

Identifying continuity and change

3. Describe how the Mauryan Empire grew under Ashoka's rule.

Analysing cause and effect

4. Describe the effects a life of battle had on Ashoka.
5. How did Ashoka's reign influence religious observance in ancient India?

Determining historical significance

6. Now you have read about Ashoka, what do you think inspired H. G. Wells to describe him as 'the greatest ruler in world history'?

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Complete this digital doc: Worksheet 19.5: Who's who in ancient India

19.8 The religions of ancient India

19.8.1 Hinduism and the natural world

As we have learned earlier, India's unique geographic characteristics enabled the expansion of human civilisations in the area. The plentiful waters of the Ganges, Brahmaputra and Indus rivers became the life-blood of the Indian people. Enriching the surrounding lands, these rivers allowed people to farm and cities to grow. The importance of the natural world can be seen in the evolution of Indian religions, with environmental themes particularly apparent in Hinduism, Buddhism and Jainism. In the following sections, we will investigate some of India's oldest religions and discover the ways in which they represent, symbolise and seek to protect the natural world.

The oldest of the world's major religions, Hinduism is followed by almost 80 per cent of modern Indians. Hinduism is full of symbols, references and customs that relate to the natural world. In fact, the very name India is derived from the word Hindu, which comes from the Sanskrit word *sindh*, meaning 'river'. Ancient Hindu texts, including the Vedas and the Mahabharata, frequently mention the divine presence in nature. They describe how Hindu gods such as Krishna often took the form of features in the natural world. As such, animals and the environments in which they lived had to be worshipped and protected. These texts also taught that humans had a duty to live in harmony with the natural world. This duty is often referred to as dharma. A word used across many different Indian religions, dharma can be described as a person's responsibility to follow religious and cultural teachings and laws.

SOURCE 1 An excerpt from the Sanskrit verse *Srimad Bhagavata Mahapurna (2.2.41)*

Ether, air, fire, water, earth, planets, all creatures, directions, trees and plants, rivers and seas — they all are organs of God's body. Remembering this, a devotee respects all species.

Hinduism explained

Hinduism is both a pantheistic and polytheistic religion. The first term describes religions that see the entire universe as being divine. Pantheists do not believe in a single god-like being but rather see god in all aspects of the natural world. This means that Hindus are also polytheists as they worship the natural world through a variety of divine beings. Another key Hindu belief is reincarnation, through which a person's spirit or soul is reborn in another body after death. Hindus believe that after many cycles of death and rebirth the individual may achieve joy and freedom through eventual unity with a universal spirit, called Brahman.

Hindus also believe that a person's current life will determine what form the next life will take. If you perform religious duties and live a moral life, you may be born to a higher class in the next life. But a sinful life would mean being born into some lower life, perhaps as a poor person, a slave or an animal. Hinduism holds that every living thing contains a part of the universal spirit and is therefore sacred. For this reason, vegetarianism is widely practised. Cows are particularly honoured and protected.

SOURCE 2 During the Ganesha Festival in August, Hindus place statues of the elephant god, Ganesh, in their homes and in decorated tents to receive his blessing. On the eleventh day, the statues are taken to a river or the sea and immersed in water.



SOURCE 3 Hindus bathing in the Ganges River during a major religious festival in northern India. They believe that the water of the Ganges purifies the soul and washes away sin.



SOURCE 4 A *sadhu*, or Hindu holy man, at the Ardh Kumbh Mela, the world's largest religious festival. Millions of Hindus attend this festival, held twice a year at the meeting place of the Ganges and two other rivers.



19.8.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What percentage of modern Indians identify as Hindus?
2. Explain dharma and how it relates to the natural world.
3. Explain what is meant by a 'divine presence in nature'.
4. List examples of three monotheistic and three polytheistic religions.
5. Explain the concept of reincarnation.

Using historical sources as evidence

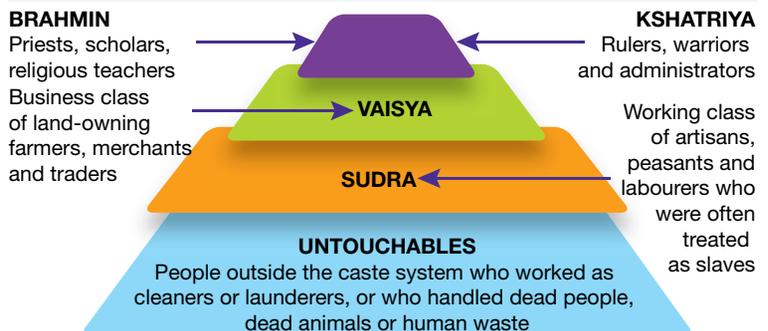
6. Consider the sources included in this section. From what you have learned in this topic, why do you think water plays a key role in these Hindu festivals?
7. What do you believe the phrase 'they are all organs of God's body' refers to?

19.8.2 The caste system

As in all ancient societies, civilisation brought increased inequality with privileged classes oppressing less privileged classes. In India, class differences were reinforced by religious ideas as the Indo-Aryan conquerors set about creating oppressed classes out of the peoples they conquered.

From *Vedic* times, Hinduism divided society into classes called castes. The caste system (see Source 5) was a means of social control — of keeping people in the social classes into which they were born. From around 200 CE, four main castes were described under the Manu code. These castes were the Brahman or priestly class, warriors and landowners, farmers and craftsmen, and Untouchables or outcasts. These main castes developed further into a complex system of hundreds of castes, each with its own rules, occupations and restrictions. A contested verse of the *Purusha Sukta* states that the castes originated from different parts of giant deity, Purusha. It claims that the Brahmin came from its mouth, the

SOURCE 5 This social pyramid represents the main castes and social classes of ancient India by about the time of the Mauryan Empire. Children were born into a caste. It was almost impossible to move between castes, especially as Sudra and Untouchable children were denied any formal education. Buddhism rejected the caste system.



Untouchables or outcasts. These main castes developed further into a complex system of hundreds of castes, each with its own rules, occupations and restrictions. A contested verse of the *Purusha Sukta* states that the castes originated from different parts of giant deity, Purusha. It claims that the Brahmin came from its mouth, the

kshatriya from its arms, the vaisya from its thighs and sudra from its feet. The dalit or untouchables were not mentioned in the verse. However, in recent years, historians and commentators have doubted whether the verse was actually written during the Vedic period. In modern times there have been attempts to change this social system.

19.8.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. During which period of ancient Indian history was the caste system introduced?
2. Identify and explain the key reason for the introduction of the caste system.
3. Which two groups occupied the top caste of the system?
4. Why was the lowest ranked group known as the Untouchables?

Using historical sources as evidence

5. Create a visual representation of the caste system (as shown in Source 5). You can either copy the format shown in this source or create a new image.
6. Why would someone have written the *Purusha Sukta* after the Vedic period? What purpose might the author have had?

19.8.3 Buddhism and the natural world

A deeply spiritual religion, Buddhism originated in India and then spread throughout Asia and beyond (see Source 6). Buddhism also sees humankind as part of a sacred natural world. Buddhism advocates contentment. The Buddha taught that humans must understand nature in order to satisfy their needs without harming the natural world. Whenever humans became corrupted by unrestricted greed, both humanity and the natural world suffered. Buddhists see the natural world as being filled with interconnections. Buddhism also teaches that humans must achieve a balance between themselves and the environments in which they live. An important element of Buddhism has always been the belief that people can be reincarnated as animals. In Buddhist thought, this provided another reason for a gentle relationship with nature, and sympathy and respect for all living creatures.

Buddhism explained

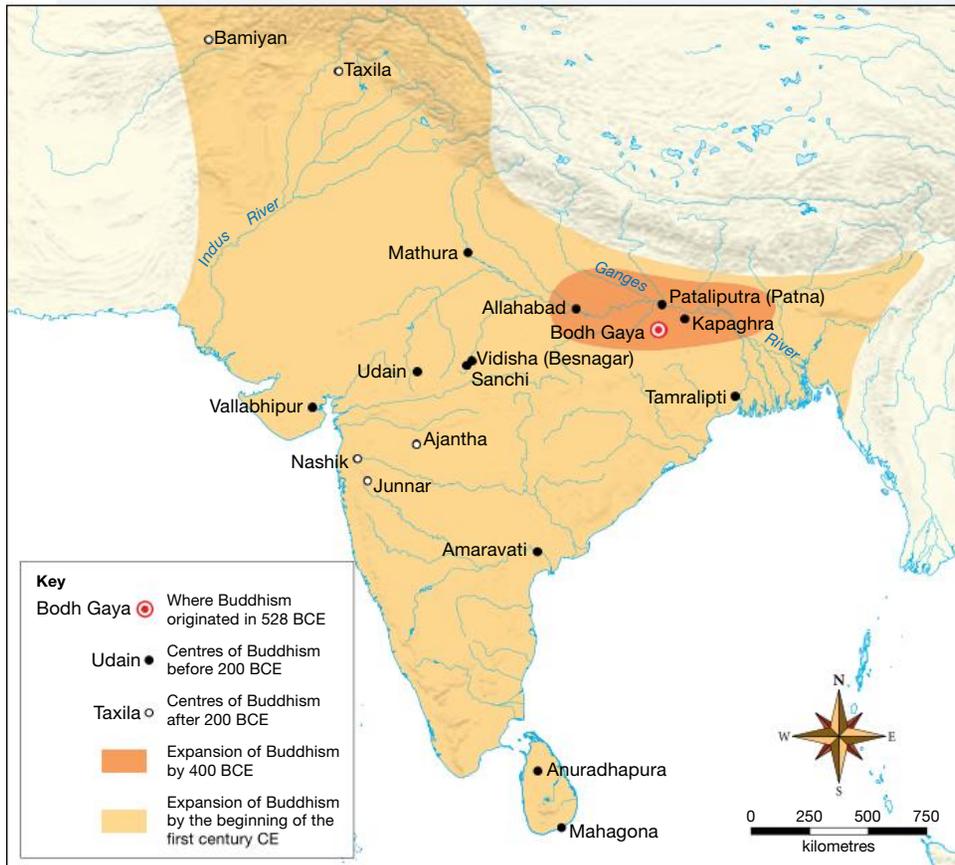
Buddhism was founded by a Hindu prince named Siddhartha Gautama in the sixth century BCE. After observing the suffering of people in his kingdom, Siddhartha decided to give up his worldly riches and seek deeper truths about life. It is said he lived as a hermit for seven years, and then set out to teach people what he called the Four Noble Truths. It is at this time that people began calling him the Buddha, which means ‘the Enlightened One’.

The Four Noble truths are as follows:

- All people, regardless of wealth, suffer pain.
- People suffer pain so long as they remain locked in the cycle of the soul’s reincarnation — through birth, death and rebirth.
- Pain is caused by the desire, or craving, for things.
- To overcome desire, a person must follow the Eightfold Path.

The Eightfold Path is concerned with the seeking of wisdom, resisting and freeing the mind from wrongdoing, serving one’s neighbours, and ‘right concentration’ or meditation. The goal is to rid oneself of desire. By following this path, the Buddha taught, one could achieve *nirvana*, a state of spiritual peace and

SOURCE 6 Map showing the spread of Buddhism within India up to the first century CE



SOURCE 7 Statue of the Buddha from Gandhara region in northern Pakistan, first century CE



joy, free from worldly desires and attachments, suffering and individual consciousness. The soul ceases to exist as it comes into harmony with the universe.

Buddhism spread throughout ancient India, but by the twelfth century CE it had lost much of its influence. Today there are about five million Buddhists in India. But Buddhism also spread throughout much of Asia, including China, Japan, Tibet, Korea and South-East Asia. Today its influence is more marked in these countries than in India.

19.8.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Who was Siddhartha Gautama?
2. According to Buddhist belief, what happens to the soul when it reaches nirvana?
3. Name three modern countries where Buddhism is one of the major religions.
4. Explain what is meant by the Eightfold Path.

Using historical sources as evidence

5. According to Source 6, in which part of India were most centres of Buddhism by about 200 BCE?
6. What do you notice about the representation of the Buddha shown in Source 7?

19.8.4 Jainism and the natural world

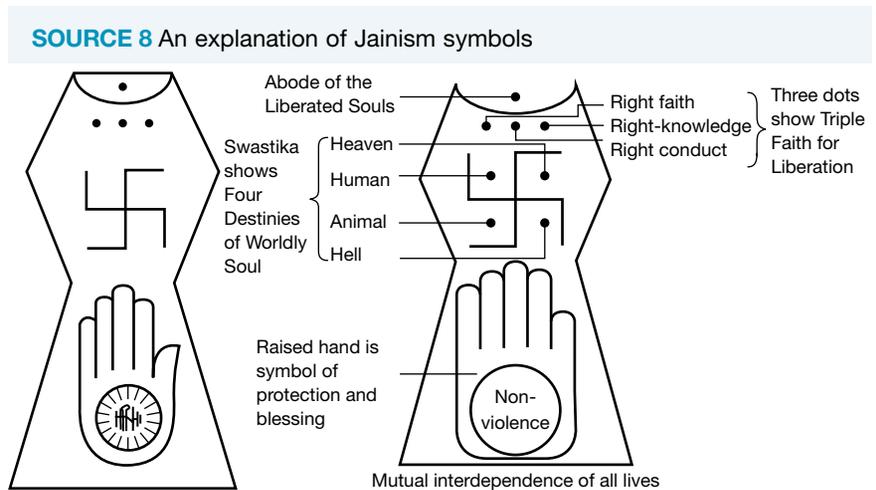
Another of ancient India's three religions, Jainism is often mistakenly seen as a branch of Hinduism and Buddhism. Although the three religions do share common values and ideas, Jainism should be viewed as a separate belief system. One of the most important principles in Jainism is *ahimsa*, or non-violence. Jains believe that violence against any living thing is wrong and must be avoided at all costs. They believe that living a non-violent life will bring you closer to holiness. For this reason, Jains commonly practice vegetarianism and adopt lifestyles that reduce their environmental impact. Strict Jains will even sweep the ground in front of them to avoid killing insects. This custom demonstrates just how important the natural world is in Jainism.

Jainism explained

Ahimsa is not the only important aspect of Jainism. In fact, it is only one of the five major vows that all Jains must take. By fulfilling these vows, Jains believe that all people have the opportunity to become gods. The Five Vows of Jainism are:

- ahimsa — non-violence
- satya — truthfulness
- asteya — non-stealing
- brahmacharya — celibacy/chastity
- aparigraha — non-attachment.

By living their lives according to these vows, Jains attempt to seek liberation from the cycle of reincarnation in which they also believe. Once a person attains liberation, their soul becomes immortal and stays in an ever-lasting state of bliss. In modern times, Jainism remains a relatively minor religion in India. It was popularised in the Western world by the famous Indian political leader, Mahatma Gandhi. Though not a Jain by birth, Gandhi's non-violent methods of protest closely follow the teachings of Jainism.



19.8.4 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Explain the concept of ahimsa.
2. Why do many Jains practice vegetarianism?
3. What are the Five Vows of Jainism?
4. Choose one of Five Vows of Jainism and explain it in further detail (you may need to conduct further research to answer this question).
5. What do Jains believe happens to the soul after a person attains liberation from the cycle of reincarnation?

Using historical sources as evidence

6. Use Source 8 to complete the following table.

Symbol	Element of Jainism	Meaning

19.8.5 Rites of passage in ancient India

Life-cycle events are a large part of many religions. In Catholicism, a newborn baby's baptism is a significant religious event, as is a *bar* or *bat mitzvah* to a young Jewish boy or girl. In ancient India, life-cycle events were known as *samskara*. A term with different meanings, in this instance *samskara* refers to a moment in the lives of Hindus, Buddhists and Jains. Source 9 outlines the most important *samskara* in Hinduism.

SOURCE 9 The most important *samskara* in Hinduism

Samskara	Description
Garbhadhana	A ritual that signified the intent to conceive a child
Pumsavana	A ritual to increase the chances of conception
Simanatonayana	'Parting of the hair' ceremony; completed to ensure the safe delivery of a baby
Jatakarman	A ritual to celebrate the birth of a baby
Namakarana	A baby-naming ceremony usually performed on the tenth to twelfth day after its birth
Nishkramana	A ritual during which a baby is formally introduced to the world for the first time; the timing usually corresponds to sunrise or sunset
Annaprashana	A ritual during which a baby will eat solid food for the first time
Chudakarana	The ritual of a child's first haircut (usually involves shaving the head, especially for boys)
Karnavedha	An ear-piercing ceremony that in modern times is more common for girls than boys
Vidyarambha	A ritual to celebrate the beginning of a child's education
Upanayana	A rite of passage during which a child receives a sacred thread, usually from a teacher
Praishartha	A ritual that marks the beginning of the study of sacred texts including the Hindu Vedas
Keshanta and Ritusuddhi	Rituals that mark a young man's first shave (the former) and a young woman's first menstruation cycle (the latter)
Samavartana	A ritual to celebrate graduation from the education system
Vivaha	The range of rituals in a marriage ceremony
Antyeshti	Funeral rites, often including cremation

There are many reasons why ancient Indians took part in these rituals, and continue to do so today. The most simple of these reasons is that the various *samskara* allowed people to demonstrate their commitment to what they believe. Take the ritual of *upanayana*, for example. Conducted between a *guru* (teacher) and a student, this ritual is conducted by only the upper three castes of Indian society. The ceremony marks the beginning of a student's educational journey. Yet more importantly, it also signifies a young person's acceptance as a full member of their community. During the

SOURCE 10 A modern example of the *upanayana* ritual



ceremony, a sacred thread is tied across the student's chest. While it may need to be replaced over the years, this thread is worn for the remainder of the bearer's life — a constant reminder of their connection to their beliefs.

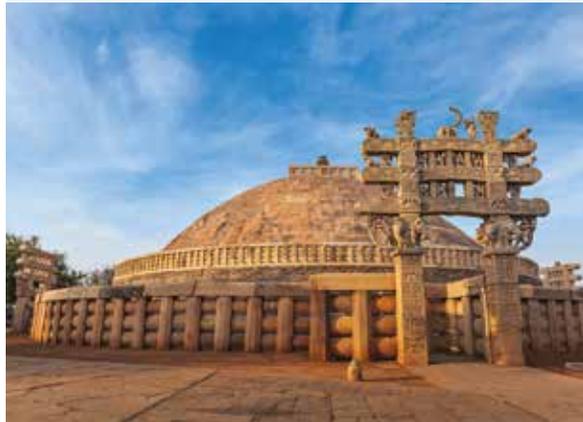
Death and funerary customs

The concept of death in ancient Indian belief systems is extremely interesting. With the belief in incarnation strong in many Indian religions, death is seen as a transition from one life into another. For Hindus, the funerary ceremony, or *antyeshti*, signifies the separation of the soul from the body. For this reason, adults are usually cremated with their ashes scattered either in a sacred river such as the Ganges or a place of importance to the

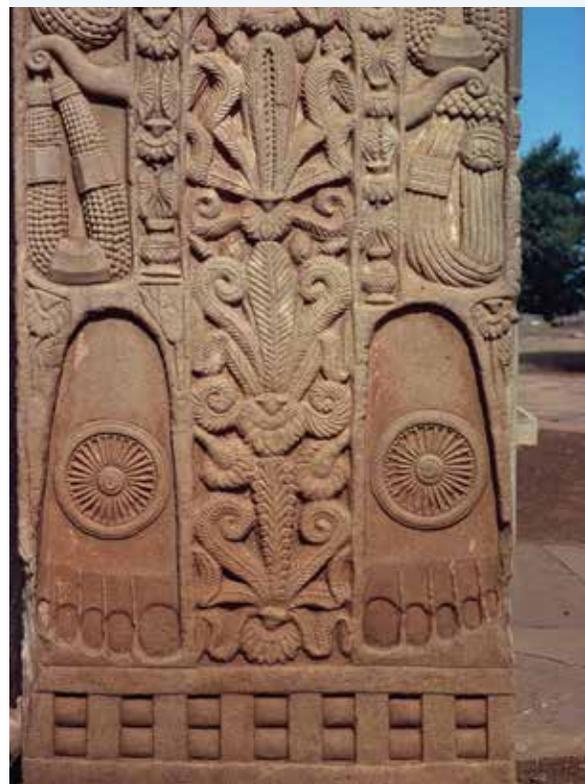
deceased. The funeral occurs in that days that follow the death and is usually presided over by the oldest son of the grieving family. An interesting, but rare, custom in Indian funerals is the use of professional mourners. People referred to as *rudaali* are employed by the grieving family to attend the funeral. Rudaali are only employed by members of the upper castes who, because of their status, are not allowed to publicly show their emotions. Due to this social restriction, the role of the rudaali is to mourn on their behalf.

Cremation was also practiced by Buddhists in ancient India. Buddhist monks would chant with the grieving family while the body was set alight. Their prayers were thought to help the soul of the deceased leave the body and transition into its next incarnation. Another Buddhist funerary custom was the construction of *stupa*. Found at monasteries and religious centres, stupas usually took the form of a hemispherical structure. The shape of the stupa represents the original burial mounds of the Buddha. While the central mound was usually left plain and undecorated, the surrounding walls and arches were covered with elaborate engravings. On early Indian stupas, the Buddha himself was never depicted in human form. Instead, the Buddha was represented through symbols such as the footprints shown in Source 12. Within the structure, the relics of great Buddhist scholars and monks were stored. Small ceramic, stone or metal stupas were also used to house the ashes of the deceased. It was (and still is) common for these smaller stupas to become the focus of family shrines.

SOURCE 11 The Great Stupa at Sanchi and a small personal stupa



SOURCE 12 Engraved stupa walls at the Great Stupa of Sanchi, showing footprints of the Buddha with a wheel — the Ashoka Chakra — embedded in them



19.8.5 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Provide a broad definition of samskara.
2. Why do people participate in the various rituals explained in this section?
3. Explain why death is such an important event in Indian society.
4. Who were rudaali and what was their role?
5. What does the shape of a stupa represent?

Using historical sources as evidence

6. After reading the table in Source 9, list the three rituals that you found most interesting. Explain your choices.
7. Examine Source 12. What object is located within the Buddha's footprints? What is the significance of this object? (You may need to do some research to answer the last part of this question.)

19.8 Putting it all together

Using historical sources as evidence

1. Compare representations of Hindu gods (such as Ganesha in Source 2) with representations of the Buddha (shown in Source 7). What are the major differences between these two religious figures?

Identifying continuity and change

2. To what extent is the caste system still functioning in India today?
3. The customs of ancient India share nothing in common with modern Indian society. Discuss this statement, using examples to support your arguments.

Analysing cause and effect

4. Death is an important event in Indian society. Explain what each of India's three major religions believe happens to the soul after death.

Determining historical significance

5. The major religions of India are closely linked through shared beliefs and customs. Evaluate the accuracy of this statement with examples.
6. Discuss the ways in which connections to the natural world are present within Indian religions.

19.9 SkillBuilder: Analysing different perspectives

19.9.1 Tell me

What are different perspectives and why do they occur?

A perspective is a point of view, which is formed from someone's values, beliefs, attitudes and experiences. In a study of a period of history, perspectives on the period or an event can be gathered from primary sources, especially eyewitness accounts such as those found in a diary, as well as official sources such as records produced by those in power. Sources give different perspectives because not everyone sees an event or problem from the same point of view. Some sources are biased (one-sided or prejudiced) or are based on insufficient understanding or information to be reliable. Each source will reflect the perspective of its creator and their target audience and purpose.

To uncover the truth on any issue we have to be aware that what someone says or writes about it may be one-sided or incorrect. It may even be an attempt to deceive. This is as important when trying to make up our mind on current issues as it is when trying to understand the past. For example, when buying a product, you don't necessarily believe what advertisements say about it. An advertiser will wish to show a product

in its best light, that is, present only positive aspects of it so that a consumer will buy it. In the same way, a ruler may only want positive records of their rule to be made or displayed to ensure there is no dissent from those they rule or that their legacy is protected. Sometimes, the perspectives of those not part of the ruling group may be silenced — their absence from the public record also tells a historian something about that period. Historians must often research extensively to find perspectives of a range of people about events from the past in order to build up a balanced picture of the event or time period. Since secondary sources rely on interpretations of primary sources these are based on the perspectives or bias of the creator of the secondary source. This may add another layer of perspective on top of the perspective of the creator of the primary source.

19.9.2 Show me

How to analyse different perspectives in primary and secondary sources

When you read an interpretation of a historical event or development, you need to ask:

1. What is the subject or main idea of the source?
2. When was the source created?
3. Who created the source?
4. Why was it written?
5. Is the source based on reliable information?
6. Is the source supported or contradicted by the evidence of other sources?

In the following example, the six questions have been applied to Source 1, an ancient Greek account of the Indus Valley Civilisation.

SOURCE 1 From *Geography*, a book by the Greek historian and geographer Strabo (c. 63 BCE–24 CE). Strabo's book was an encyclopaedia of geographical knowledge of his time. Here he was recounting observations made by an earlier historian, Aristobulus, who accompanied Alexander the Great to India around 327 BCE. Aristobulus's book has been lost.

[Aristobulus] says that when he was sent upon a certain mission he saw a country of more than a thousand cities, together with villages, that had been deserted because the Indus had abandoned its proper bed, and had turned aside into the other bed on the left that was much deeper, and flowed with precipitous descent like a **cataract**, so that the Indus no longer watered by its overflows the abandoned country on the right, since that country was now above the level, not only of the new stream, but also of its overflows.

1. *What is the subject or main idea of the source?* The subject is the abandoned cities of the Indus River Valley. According to the writer, the cities were abandoned because the river changed its course so that it no longer provided water at a level suitable for use by the people of those cities.
2. *When was the source created?* The source was created between c. 63 BCE and 24 BCE.
3. *Who created the source?* Strabo is using information he obtained by reading Aristobulus, who was in India around 327 BC.
4. *Why was the source written?* Aristobulus wrote an account of what he observed during his journey to India. Strabo used Aristobulus as a source for his own book.
5. *Is the source based on reliable information?* We know that Aristobulus could not have seen 'more than a thousand cities' because there is archaeological evidence of only a few cities. If he exaggerated this, he may be wrong about other things.
6. *Is the source supported or contradicted by the evidence of other sources?* Aristobulus's statements about the river changing course are supported by archaeological evidence (see section 19.4.3). This change had a different effect in Mohenjo-daro from that described by Aristobulus, but his description could be accurate for other Indus Valley towns and cities.

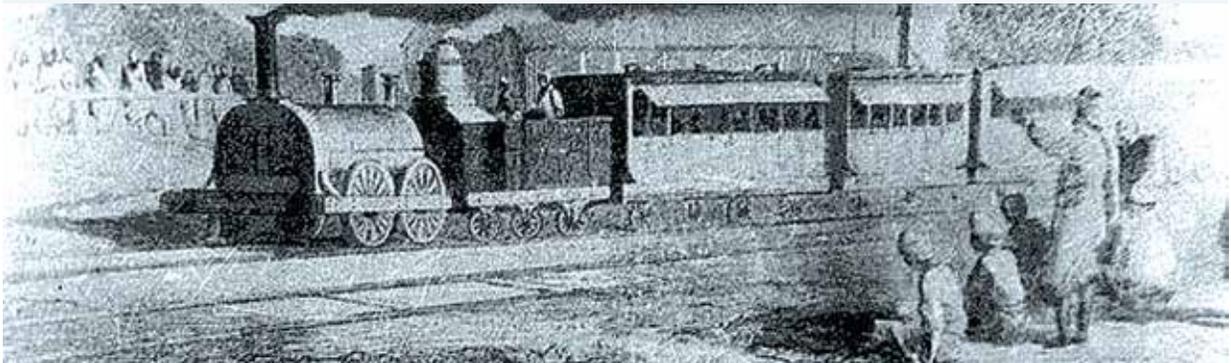
19.9.3 Let me do it

Sources 2 and 3 will help you understand some of the difficulties people faced in interpreting the ruins of Indus Valley cities. Now use the six questions to see if you can recognise and analyse the different perspectives in Sources 4 and 5 on the following page.

SOURCE 2 A Buddhist stupa on top of the Higher Town of the city of Mohenjo-daro. The stupa and the nearby monastery were constructed around 200 CE from bricks taken from the surrounding abandoned buildings. The stupa is itself now a ruin. Anyone who was untrained in archaeology might have had difficulty in recognising that the stupa belonged to a different age from the earlier ruins.



SOURCE 3 The first locomotive on the East India Railway. In the 1850s the British began to use crushed bricks taken from the ruins of Harappa as ballast under the tracks and sleepers for the rail line.



SOURCE 4 From the account of Charles Masson, a British army deserter who in 1826 stumbled on the ruins of what later would be called the Indus River Valley city of Harappa

I found ... in front of the village [of Harappa] a ruinous brick castle. Behind us was a large circular mound ... and to the west was an irregular rocky height, crowned with the remains of buildings, in fragments of walls, with **niches**, after the eastern manner ... The walls and towers of the castle are remarkably high, though, from having been long deserted, they exhibit in some parts the ravages of time and decay. Between it and our camp extended a deep trench ... overgrown with grasses and plants ... Tradition affirms the existence here of a city ... [It] was destroyed by a particular visitation of **Providence**, brought down by the **lust** and crimes of the **sovereign**.

SOURCE 5 Archaeologist John Marshall, recollecting his colleague R. D. Banerji's discovery of Mohenjo-daro in 1922. From John Marshall, *Mohenjo-daro and the Indus River Civilization*, [1931] 2004

... [I]t was not until 1922, when Mr R. D. Banerji started to dig there [in Mohenjo-daro], that the prehistoric character of its remains was revealed. This was not greatly to be wondered at; for the only structures then visible were the Buddhist Stupa and Monastery ... and these were built exclusively of brick taken from the older ruins, so that it was not unnatural to infer that the rest of the site was referable to approximately the same age as the Buddhist monuments [around 200 CE]. Indeed ... Mr Banerji himself ... had no idea of finding anything prehistoric. His primary object was to lay bare the Buddhist remains, and it was while engaged on this task that he came by chance on several seals which he recognized at once as belonging to the same class as the remarkable seals inscribed with legends in an undecipherable script which had long been known to us from the ruin of Harappa ... The few structural remains of that civilization which he had unearthed were built of bricks identical with those used in the Buddhist Stupa and Monastery, and bore so close a resemblance to the latter that even now it is not always easy to discriminate between them. Nevertheless, Mr Banerji **divined**, and rightly divined, that these earlier remains must have **antedated** the Buddhist structures, which were only a foot or two [30–60 cm] above them, by some two or three thousand years. That was no small achievement!

19.8 Putting it all together

Using historical sources as evidence

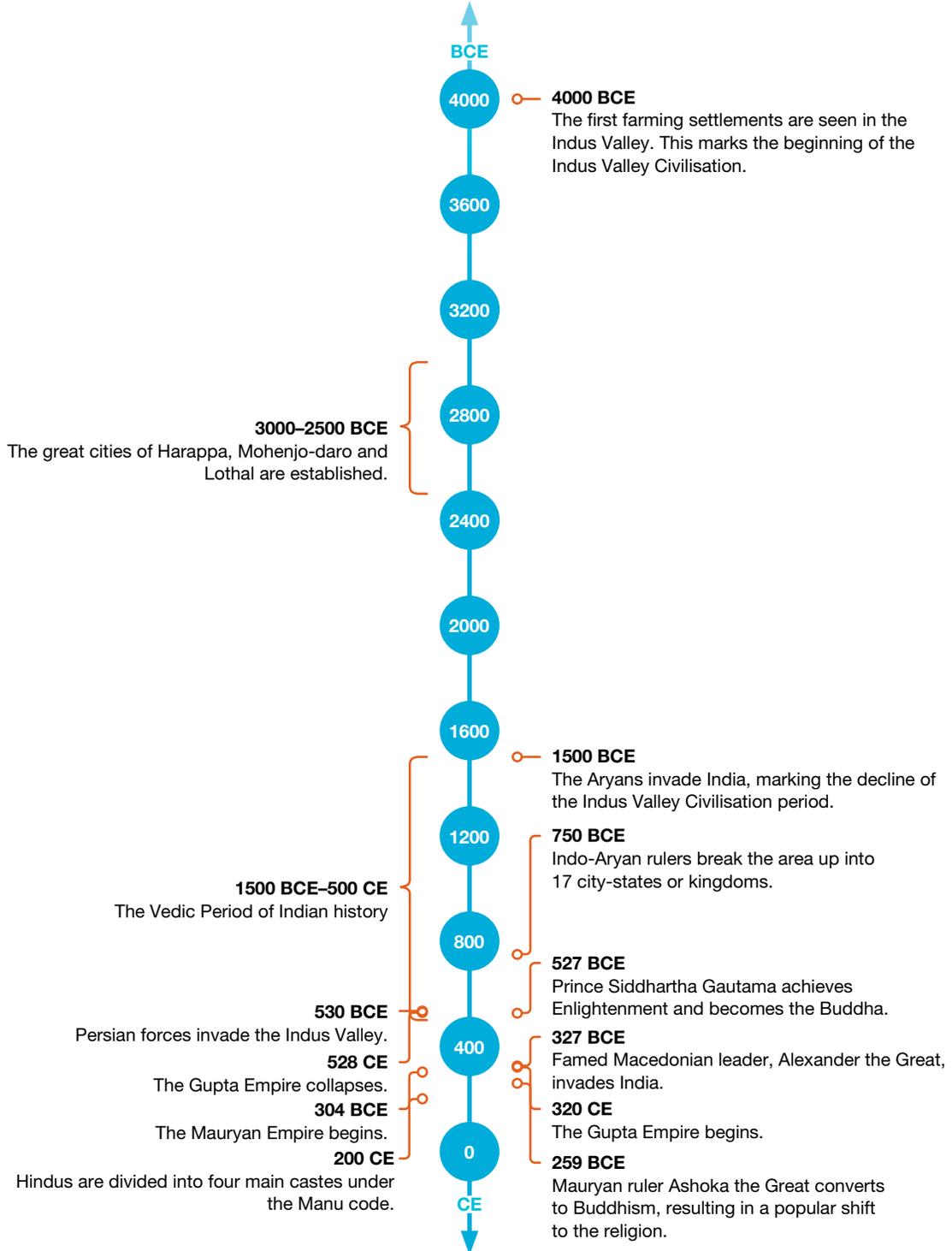
1. Explain why primary source evidence from ancient India often provides different perspectives.
2. Why would Source 4, the extract from the account of Charles Masson, need to be questioned very thoroughly?
3. Explain how multiple primary sources can be used to increase the accuracy of a historical investigation.
4. How do historians decide which is the most reliable source of evidence when choosing between two very different perspectives?
5. Suggest which kind of primary sources from the Indus Valley Civilisation provide the most information about ancient culture and traditions.

19.10 Review

In this topic we have focused on the earliest and most mysterious of ancient India's civilisations: the Indus Valley Civilisation. We have also seen how several other civilisations emerged in India in ancient times and have looked at the way religious traditions that developed in India have had a lasting influence in the world today.

19.10.1 Review

Chronology: timeline of ancient India



Key knowledge: summary

19.2 Examining the evidence

- To discover information about ancient India, archaeologists and historians must use a range of techniques and methods.

- Primary sources provide historians with information directly from a period of history. As such, they remain the most valued of historical sources.
- Secondary sources or interpretations of direct evidence can also be used to provide a more complete understanding of past events, beliefs and individuals.

19.3 The geography of India

- The unique physical factors found within the Indus Valley were crucial to the development of early Indian civilisations.
- The great Himalayan rivers of the Ganges, Brahmaputra and the Indus, provided the area with a reliable supply of fresh water.
- The rivers also left the surrounding soil rich with sediment eroded from the famous mountain ranges that lay to India's north.
- The supply of fresh water from the rivers and the rich sediment allowed early Indian farmers to establish permanent settlements in the Indus Valley. From these settlements, the Indus Valley Civilisation arose.

19.4 Lost cities of the Indus Valley

- Archaeological excavations and important sites have revealed much about India's past. In particular, the sites of Harappa, Mohenjo-daro and Lothal have yielded pottery, jewellery, engraved walls and religious structures, ports and even entire street plans.
- Given the importance of early Indian archaeological sites, it is crucial that the relevant authorities strive to conserve and protect them.
- Increased urban development, increased numbers of tourist visitors and even global climate change are all real threats to the survival of Harappa, Mohenjo-daro, Lothal and other key archaeological sites.

19.5 Contacts and conflicts: India and the ancient world

- Early Indian society was significantly influenced by its frequent battles against invaders from a range of other nations.
- Trade between Europe and the East became more common and knowledge of the unique goods and resources India had been blessed with became more widely known.
- Increased knowledge of India's unique resources made the area a target for the powerful armies of Greece, Persia and Macedonia.
- Contact and conflicts left cultural and religious impacts on ancient Indian society.

19.6 The Mauryan Empire: India's first unified state

- Before the period of the Mauryan Empire, Ancient India was ruled by separate tribal families and civil conflict was common and fierce.
- The Mauryan Empire was the first dynastic power in India and brought relative peace to the area through their unified government.
- This period of history witnessed significant developments in law-making and other government regulations.

19.7 Ashoka the Great

- Several key individuals influenced the developed ancient Indian society. One of those individuals was Ashoka the Great, a ruler from the Mauryan Empire.
- Ashoka was a famed warrior who led his forces fiercely, extending the boundaries of his empire. However, years of bloody battles took a spiritual toll on Ashoka and he began to see the error of his previous strategies.
- Ashoka's inner turmoil eventually led him to convert to Buddhism; this change significantly increased the practice of Buddhism and is one reason why the religion is so popular in India today.

19.8 The religions of ancient India

- Indian society became highly controlled and regulated with the introduction of the caste system.
- A rigid social hierarchy, the caste system made it virtually impossible for people to move between the castes into which they were born into.
- Introduced by Hindus, the caste system was rejected by followers of Buddhism.
- The caste system is still in place in modern India to some extent.
- Indian society was and still is steeped in religion and tradition.
- Several key belief systems developed in ancient India.
- Each of these belief systems participated in similar, yet varied, daily customs and rituals. In particular, death funerary customs were of importance to all Indian religions. With belief in reincarnation and an afterlife common in Indian religions, it was crucial that death was handled in the right way.
- Elements of these funerary practices can still be seen in Indian society today.

Key knowledge: multiple-choice topic test

1. When did the first permanent settlements of the Indus Valley Civilisation arise?
 - (a) About 4000 BCE
 - (b) About 3000 BCE
 - (c) About 2000 BCE
 - (d) About 1000 BCE
2. What natural resource was crucial to the development of the Indus Valley Civilisation?
 - (a) Gold
 - (b) Silver
 - (c) Water
 - (d) Trees
3. Why don't we know the names of any of the Indus Valley rulers?
 - (a) Because written language was not used at the time.
 - (b) Because there were too many different leaders.
 - (c) Because there were no leaders of the Indus Valley Civilisation.
 - (d) Because we do not have enough archaeological evidence of these leaders.
4. Which ancient Indian city housed a port that enabled international trade?
 - (a) Harappa
 - (b) Mohenjo-daro
 - (c) Lothal
 - (d) Sanchi
5. What is the greatest threat to the archaeological sites from ancient India?
 - (a) Rapid urbanisation
 - (b) Increased tourist numbers
 - (c) Increased flooding events
 - (d) All of the above
6. What was unique about the rule of Ashoka the Great?
 - (a) He abandoned his reign at the peak of its powers.
 - (b) He converted India from Hinduism to Buddhism.
 - (c) He united the warring states of India.
 - (d) He was assassinated by his own brother.
7. What were the Vedas?
 - (a) A group of religious texts
 - (b) A group of foreign invaders

- (c) A group of Hindu rituals
 - (d) A group of young Buddhist scholars
8. Which group is at the bottom of the caste system?
- (a) Brahmin
 - (b) Vaishya
 - (c) Sudra
 - (d) Dalit (Untouchables)
9. One method Jains take to achieve liberation is which of the following?
- (a) The Eightfold Path
 - (b) Enlightenment
 - (c) Nirvana
 - (d) The Five Vows

19.10.2 Respond

Using historical sources as evidence

1. Identify the symbol shown in the middle of the modern Indian flag (see Source 1). What does it represent and from which religion did it originate?
2. Using the sources shown throughout this topic, create a map that shows the establishment and expansion of ancient Indian civilisations. Include the invasion launched by other countries.

SOURCE 1 The flag of modern India



Analysing cause and effect

3. Explain the ways in which religion influenced early Indian civilisations.
4. How did trade with the outside world affect the development of early Indian civilisations?
5. Why is it difficult to make conclusive statements about much of ancient Indian history?

Determining historical significance

6. Throughout ancient Indian history, civilisations were rigid and resisted outside influences. Evaluate this statement, using specific examples to support your view.

Responding to the big questions

At the beginning of this topic several big questions were posed. Use the knowledge and understanding you have gained through your study of the subtopics to answer them:

1. Who were some of the most significant people in ancient India?
2. How did the geography of ancient India influence its civilisations?
3. How were ancient Indian societies organised and governed?
4. What were the main characteristics of Indian culture and religion?
5. How do written and archaeological sources help us understand ancient India?
6. Why did ancient Indian civilisations rise and fall?
7. What is the significance of the heritage of ancient India?

learn on ONLINE ONLY

 **Try out this interactivity:** Ancient India timeline (int-2940)

 **Complete these digital docs:** Worksheet 19.6: Legacy, Worksheet 19.7: Crossword, Worksheet 19.8: Summing up

TOPIC 20

Ancient China

20.1 Overview

Numerous **videos** and **interactivities** are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

20.1.1 Links with our times

China is the world's oldest continuous civilisation. For thousands of years it remained isolated from the western world. During the nineteenth and early twentieth centuries China suffered invasions, revolutions and civil wars in which many millions of people died. Now, in the early twenty-first century, China is emerging as the world's next great superpower.

China has the biggest population and the fastest growing economy in the world. In recent years, it has experienced a massive building boom, with skyscrapers pushing ever upwards into the already polluted skies over vast cities like Shanghai. Its amazing industrial growth has increased the world's awareness of environmental issues, especially global warming. We know that if each person in China were to cause as much pollution as the average Australian our planet would become uninhabitable.



Big questions

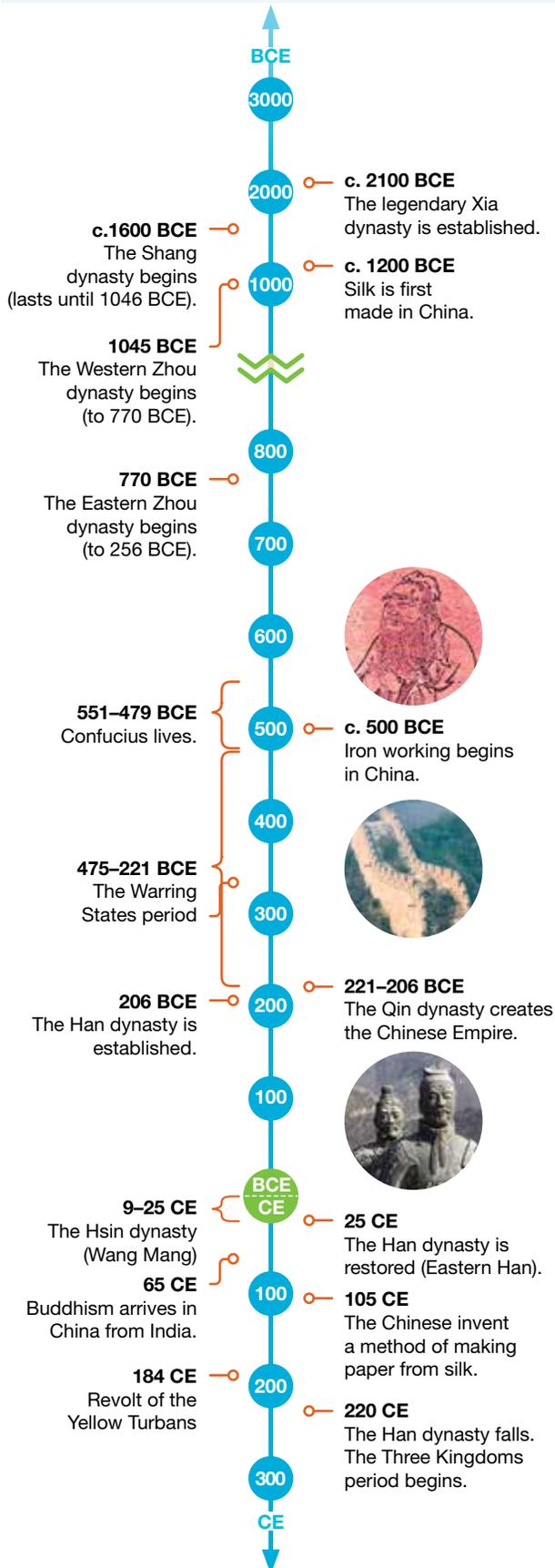
As you work through this topic, look for information that will help you to answer these questions:

1. How did ancient China's natural environment influence its civilisation?
2. How was ancient Chinese society organised and governed?
3. What were the main characteristics of ancient Chinese culture and religion?
4. How do written and archaeological sources help us understand ancient China?
5. Why did ancient Chinese dynasties rise and fall?
6. What is the significance of the heritage of ancient China?

Starter questions

1. What things do you own that were made in China?
2. What does Australia sell to China?
3. Can you think of other ways in which China has influenced life in modern Australia?

A timeline of ancient China



INQUIRY SEQUENCE

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online only



Watch this eLesson: Ancient China (eles-1838)



Complete this digital doc: Worksheet 20.1: Timeline exercise

20.2 Examining the evidence

20.2.1 How do we know about ancient China?

From huge structures such as the Great Wall of China to the writings of ancient Chinese poets and historians, there are many primary sources that provide evidence of ancient China.

We know that at least 6000 years ago people settled in farming villages along China's Huang River (Yellow River). Shang dynasty inscriptions refer to harvests, rainfall, crops, silk and domesticated animals. Through inscriptions on bronze weapons, armour and vessels, and on tortoiseshell and bones, we know that by Shang times the Chinese had developed writing (see Source 1). Inscriptions show that they believed that China was a place of civilisation surrounded by barbarians. Discoveries of cast-iron implements from Eastern Zhou times show that iron was then being used to make tools and weapons for the expanding armies. Iron gave those armies a great advantage over enemies who still used softer, bronze weapons.

Archaeological finds, including artworks and jade burial suits, tell us about the rich cultures that existed during the Qin (pronounced *chin*) and Han dynasties. The most exciting find of all was the discovery in 1974 by local peasants of a huge buried army of life-size terracotta warriors (see Source 2). They stood guard over the tomb of China's First Emperor, Qin Shihuang. Archaeologists estimate that the complex surrounding the tomb contains at least 7000 clay warriors, 600 clay horses and many weapons. Two bronze chariots, each made up of more than 3000 pieces, were also found.

SOURCE 1 Shang dynasty inscriptions on bone. In 1928 nearly 100000 engraved bones and turtle shells from the Shang dynasty were found near the modern city of Anyang. They were covered in early Chinese writing.



SOURCE 2 Some of the thousands of terracotta warriors that were buried around the tomb of China's first emperor



SOURCE 3 From Sima Qian's book *Shiji*. Sima Qian was a Chinese historian who lived from about 145 to 86 BCE (during the Han dynasty).

In the ninth moon the First Emperor was buried in Mount Li . . . he employed his soldiery, to the number of 700 000, to bore down . . . and there a foundation of bronze was laid and the sarcophagus placed thereon. Rare objects and costly jewels were collected . . . in vast quantities. **Artificers** were ordered to construct mechanical crossbows, which, if anyone were to enter, would immediately discharge their arrows . . . On the roof were delineated the **constellations** of the sky, on the floor the geographical divisions of the earth . . .

The Second Emperor said, 'It is not fitting that the **concubines** of my late father who are without children should leave him now'; and accordingly he ordered them to accompany the dead monarch to the next world . . . someone suggested that the workmen who had made the machinery and concealed the treasure knew the great value of the latter . . . Therefore, so soon as the ceremony was over . . . the **mausoleum** was closed, so that not one of the workmen escaped.

20.2 Putting it all together

Using historical sources as evidence

1. Examine Source 1. What clues about ancient China's civilisation have been provided by inscriptions and implements?
2. Explain how Source 1 provides evidence of a writing system during the Shang dynasty.
3. Study Source 2.
 - (a) Describe the terracotta warriors.
 - (b) How can you tell they were not massproduced?
 - (c) What can you tell from them about the emperor's army, his wealth and his power?
4. Read Source 3. Discuss the following questions in groups and report your findings to the class.
 - (a) Why were crossbows installed in the tomb?
 - (b) Why might the constellations of the sky have been represented on the roof of the tomb?
 - (c) Why were the concubines and workers buried with the emperor?
 - (d) What does the sacrifice of women and workers suggest about the rights of these two groups in ancient China?
 - (e) What do you think the Chinese thought about life after death?

20.3 China's civilisation begins

20.3.1 China's physical features and the beginning of civilisation

The ancient Chinese saw their country as the centre of the world. Until about 126 BCE they were unaware of the existence of other civilisations. According to legends in the ancient books of China, there was once a 'golden age' in which the arts of civilisation, morals and good government were established. The legends tell of a dynasty called the Xia (pronounced *shar*). It is possible that this dynasty ruled a state in China from about the twenty-first century BCE to the seventeenth century BCE, when its last king was overthrown. However, we have no primary evidence of its existence.

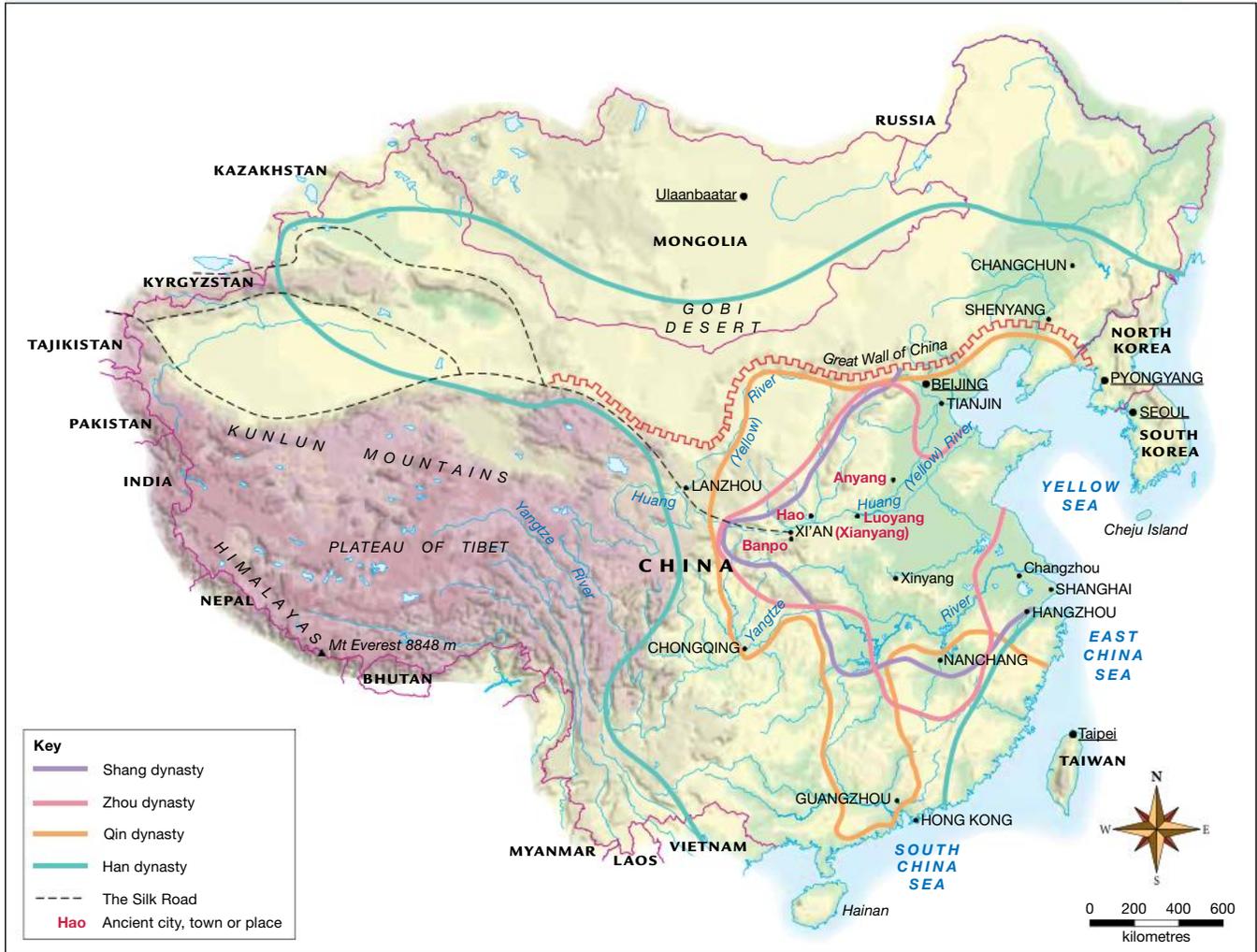
What we do know with certainty is that civilisation could not have developed where it did in China without its river valleys. They provided fertile land for farming. But farming along such river valleys could also be hazardous as the same floods that provided rich soil for crops could also devastate farms and villages. People looked to gods and rulers to protect them.

From earliest times, Chinese rulers based their authority on the **mandate of heaven**. This meant they had been chosen by the gods to rule. However, a ruler who failed to protect the people from floods, famine, wars or other disasters was considered to have lost the mandate of heaven and could be overthrown.

DID YOU KNOW?

The name 'China' comes from the name of the Chinese state Qin. People in India and Central Asia must have known of Qin's existence by about 300 BCE because by that time the word 'China' appeared in their languages. Modern Chinese call their country *Zhongguo*. In Eastern Zhou times, *Zhongguo* meant the central states of China.

SOURCE 1 A map of ancient China



Source: Map drawn by Spatial Vision.

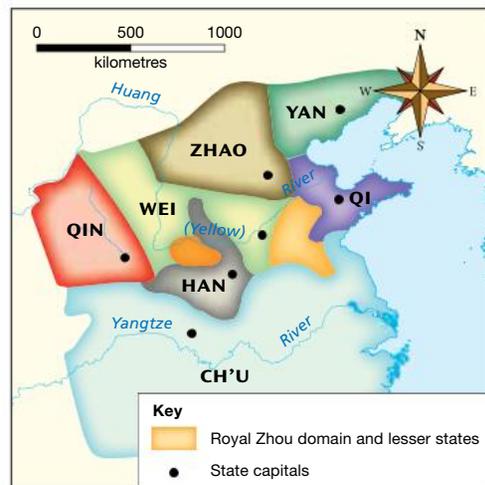
China's earliest dynasties

The first dynasty for which we have evidence is the Shang dynasty (c. 1600–1046 BCE). The Shang rulers were often at war with neighbouring groups. Their dynasty fell when the Zhou (pronounced *jo*) defeated them and set up a new dynasty. Historians divide the Zhou dynasty into two periods: the Western Zhou dynasty (1045–771 BCE) and the Eastern Zhou dynasty (770–256 BCE), under which the capital was moved to the east.

The Warring States period (475–221 BCE)

Under the Eastern Zhou rulers, royal authority was weak. There were many wars between local lords, who controlled their own states within the Zhou kingdom. The stronger states defeated and took over the weaker states. Finally seven states — Qin, Han, Zhao, Wei, Ch'u, Yan and Qi — remained to fight for control of northern China.

SOURCE 2 Zhou dynasty China during the Warring States period, about 300 BCE



Source: Map drawn by Spatial Vision.



20.3.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Explain the idea of the mandate of heaven.
2. How could a ruler lose the mandate of heaven?
3. Why do you think the Xia dynasty is often referred to as the 'legendary' Xia dynasty?
4. Why do we know more about the Shang and Zhou dynasties?
5. What was the Warring States period?

Using historical sources as evidence

6. Look closely at Source 1.
 - (a) How big was China in Shang and Zhou times compared with modern China?
 - (b) How many major rivers can you find in the area that was part of China under the Shang and Zhou dynasties?
 - (c) Find three natural features that would have helped to protect China from invaders.
7. Study Source 2.
 - (a) During the Warring States period, which states occupied land surrounding river valleys?
 - (b) Which states would appear to have had the most advantages in these wars?

20.3 Putting it all together

Identifying continuity and change

1. Using the sources and information in this subtopic, make a list of ways in which the adoption of farming must have changed ancient Chinese society.

Analysing cause and effect

2. Suggest how China's rivers would have contributed to the development of its civilisation.

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Complete this digital doc: Worksheet 20.2: Going it alone

20.4 The people of ancient China

20.4.1 The ruling classes

Chinese society was headed by rulers who were supported by lords, the landowning gentry (whose position was based on inherited status, wealth and education) and **bureaucrats**. These classes had authority over large populations of peasants, landless labourers, artisans and some slaves.

- Ancient Chinese rulers had great power. This is shown by Shang dynasty tombs containing war chariots and the bodies of thousands of followers. These people must have been sacrificed to serve their rulers in the afterlife.
- Below the supreme ruler were the powerful lords. They governed the states, such as Zhao, Qin and Wei, within the kingdom.
- Next came the landowning gentry. The warrior gentry headed the lords' armies. Bureaucrats were also recruited from the gentry, but they had to be scholars to become government officials.

The lords of ancient China were often at war with neighbouring nomadic tribes to China's north and west. They also made war on each other. Warriors fought at first in chariots and later on horseback. The lords and warrior gentry regarded war almost as a sporting contest. When not fighting they spent much of their time hunting, feasting or attending ceremonies and entertainments at court.

Upper-class women had servants and luxuries. However, as girls they

were considered inferior to boys. When they married they were treated as the property of their wealthy husbands, who were allowed to have several wives.

SOURCE 1 A late Zhou dynasty bronze musical bell



SOURCE 2 An ox-shaped bronze zun (wine vessel) from the late Zhou dynasty



20.4.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What were the functions of the lords and landowning gentry in ancient China?
2. What was the role of the bureaucrats?
3. How do we know that ancient Chinese rulers had great power?

Using historical sources as evidence

4. Look closely at Sources 1 and 2. Describe each of these objects and explain why they would almost certainly have belonged to members of the ruling classes.

20.4.2 The common people

The struggling peasants

Most of the people were powerless peasants whose lives changed little over thousands of years. They reared sheep, pigs, poultry, buffalo and oxen, and grew grains such as wheat, millet and barley. Most peasants were tenants who worked fields owned by the lords or gentry. They had to give their landlords about half of everything they produced, as well as paying taxes to the government. Times could be so hard that they were forced to sell their children into slavery.

Peasants had to cope with natural disasters, such as floods and famine, and with the constant threat of war. Most of the **infantry** in the armies were **conscripted** peasants. In hand-to-hand fighting their main weapons were at first **halberds** with bronze blades. Later they used swords made from bronze or iron. Many foot soldiers died in battle. Those who were captured could expect to be executed or condemned to slavery.

The lowest classes

Below the peasants came artisans, merchants and slaves. Artisans were skilled craftsmen such as armourers, metalworkers and carpenters. They were a small class because their products were mostly for the ruling classes. Merchants, who conducted businesses and trade, were an even smaller and lower class. Although some merchants were wealthy, they were not considered to play a useful role and were ranked just above slaves. There were fewer slaves in China than in many other ancient societies. Many slaves had been taken as prisoners of war. Others suffered slavery as punishment for crimes (sometimes committed by their relatives rather than themselves). Still others were peasants who were sold as slaves to pay debts.

SOURCE 3

A bronze mao (spearhead) from the late Shang dynasty



SOURCE 4 A yue (battle-axe head) with a dragon design, from the late Shang dynasty



DID YOU KNOW?

In ancient China ornaments and jewellery were worn by women and men as a badge of their social rank. This made it easy to tell at a glance their position in society.

20.4.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why did peasants suffer in wars no matter which side won?
2. How could people become slaves in ancient China?
3. Why were merchants regarded as belonging to one of the lowest social classes, even though they might be wealthy?

Using historical sources as evidence

4. Identify the objects in Sources 3 and 4 and explain how they could provide evidence of the hardships faced by conscripted peasants.

20.4 Putting it all together

Identifying continuity and change

1. Draw and label a social pyramid showing the position of the different social classes in ancient China and explain why it would have been very difficult for Chinese society to change.
2. In groups, write and perform a role-play of an imaginary discussion between peasants and members of the ruling classes on the topic of war. Suggest what feelings each would have about war and why their feelings would differ greatly.

20.5 Everyday life and death

20.5.1 Everyday life

How different were the everyday lives of people from different social classes in ancient China and how differently were they treated in death? Life and death were marked by extreme inequality between rulers, lords, gentry and bureaucrats on the one hand and peasants, artisans and slaves on the other. In addition, within all classes there was extreme inequality between men and women.

The vast majority of the Chinese people were peasant farmers for whom life was a constant struggle to survive. Most spent their entire lives in villages of around a hundred families, toiling on small family farms. They worked long hours every day and most of their work was done by hand. The threat of floods and droughts meant that groups of families often worked together on such tasks as maintaining irrigation canals. In towns and cities crafts were usually hereditary, with sons learning from their fathers and taking their places when they died. The lives of craftsmen and merchants were also tough but often better than the lives of peasants. At least craftsmen and merchants got to travel about for work and trade.

Women's hard lives

Regardless of social class, women were considered inferior to men. Fathers ruled in ancient Chinese families. Women were expected to look after the household and children but in peasant families they often worked in the fields as well. Their fathers arranged their marriages and once married a woman had to live with her husband's family in a dwelling that might house three generations. Married women had to obey their husband's family members but they could gain some respect by producing sons. Baby girls were not valued and were sometimes put out to die or sold to be servants. If a woman failed to give birth to boys her husband might take other wives. In a society where people had to respect their elders, another way for a woman to gain respect was to outlive her husband.

Entertainment

The unending work of men and women in common families left almost no time or money for any kind of entertainment, apart from occasional festivals. In contrast, for the ruling classes, and some wealthy merchants, several forms of entertainment were available. During the Zhou dynasty acting, music and dance were combined into Chinese opera, in which famous legends were performed. There was a variety of board games from around 500 BCE. From the time of the Qin dynasty, acrobatics became another popular form of entertainment.

SOURCE 1 From Michael Lowe, *Everyday Life in Early Imperial China*

. . . evidence in the form of reliefs [sculptures] that decorated a tomb illustrates the type of entertainment that rich families could afford to stage, right at the end of the Han period. There was dancing and swordplay, juggling and acrobatic feats, accompanied by skilled players with their drums and bells, their wind and stringed instruments; and we know of other forms of amusements . . . such as cock-fighting, dog or horse racing and bird hunting.

20.5.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe ways in which women were disadvantaged in Chinese society.
2. Why did peasants have little entertainment?

Using historical sources as evidence

3. Read Source 1.
 - (a) How do we know about the entertainments of the ruling classes?
 - (b) What types of entertainments had the ruling classes?
 - (c) Why would it be more difficult to find evidence for the entertainments of the common people?

20.5.2 Death and burials

We know little about death among the poor but a lot about the funeral customs of rulers and the ruling classes because they could afford elaborate tombs. Chinese ideas about death preceded the organised religions so most people did not restrict funeral rituals to any one religion. A rich family might employ Daoist and Buddhist priests and Confucian scholars to play official roles at a funeral (see subtopic 20.7 Confucianism, religion and law).

It was believed that when someone died their soul left the body to dwell in a spirit world. It was also believed that an elaborate funeral would inform the spirit world of the deceased's high rank in society. Another belief was that the living had to help the deceased into the spirit world so that the dead would not become evil spirits that would return to worry them. From about 5000 BCE to the seventeenth century CE, it was the custom of the ruling classes to bury goods, including food and drink, with the dead so that they would have them in the afterlife. Until Han dynasty times it was also common for rulers to have people buried with them to serve them in the spirit world.

The rich had grand funeral feasts and ceremonies and there is evidence of puppets being buried with them that were clothed in fine silk that was worth more than a peasant might earn in a year. Their tombs were painted with scenes of joyful banquets and dances. The poor had no such finery. Most were probably buried in simple pits. In famines, floods and wars, most of the poor may have received no burial at all.

SOURCE 2 Some of the life-sized terracotta warriors that were buried to guard the tomb of China's first emperor Qin Shihuang



SOURCE 3 A jade burial suit of Princess Dou Wan, who lived before 100 BCE. The suit was made of 2150 pieces of jade held together with gold wire. It was believed that jade would stop the body from decaying and ensure immortality.



20.5.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. In ancient China, what beliefs were held about life after death?
2. What took place at the funeral of a member of the ruling classes?
3. How did this compare with the death and burial of a poor person?

Using historical sources as evidence

4. Study Source 2 and 3.
 - (a) Describe each source.
 - (b) Identify its purpose.
 - (c) Suggest what it can tell us about beliefs associated with death.

20.5 Putting it all together

Using historical sources as evidence

1. Using the sources and other information in this subtopic, make a mind map to represent inequality in ancient China in life and death.

Analysing cause and effect

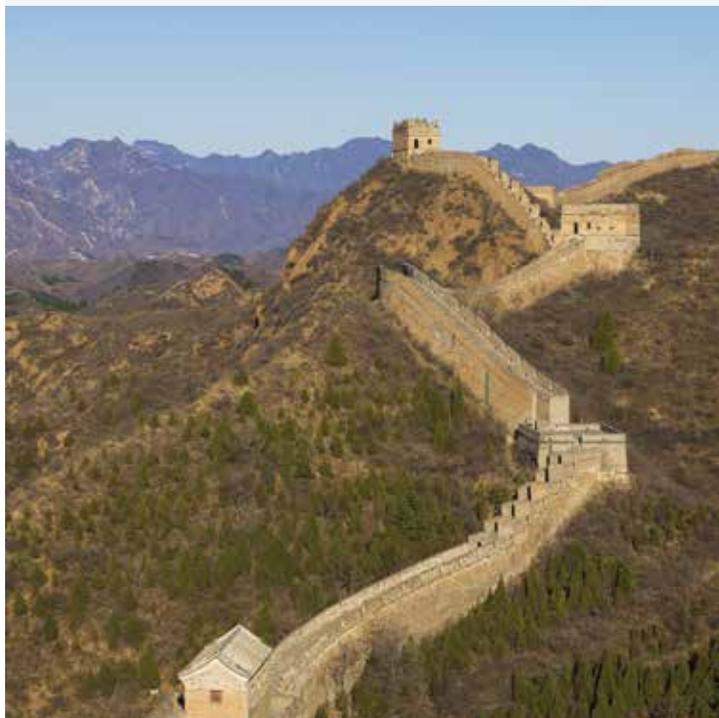
2. Explain why the power and wealth of the ruling classes could be described as a cause of the poverty and hardships suffered by the common people of ancient China.

20.6 Ancient China and the natural environment

20.6.1 China's natural environments

In our time China faces enormous environmental problems. Since the late twentieth century China's rapid economic growth has produced thousands of new factories making goods that are exported around the world. This industrial growth has depended on vast numbers of new power stations. Air pollution in many Chinese cities is so bad that when the 2008 Olympics were held in Beijing, many factories had to stop production and thousands of cars had to be taken off the roads. These problems are now huge, but even in ancient times China's population had a serious impact on its environment.

SOURCE 1 This section of the Great Wall of China straddles mountains north of Beijing. The wall extends over some 5000 kilometres through many different landscapes.



China is a vast country with a wide range of climates and landscapes. It has plateaus and mountains in the west, deserts and grasslands in the north, forests in the north-east, hills and low mountains in the south and plains along the coast. China's climate also varies greatly. Beijing has freezing winters while coastal southern China is subtropical.

In ancient times China at first consisted mainly of the area around the fertile valleys of the Huang and Yangtze rivers. It was not until Han dynasty times that the outer areas were brought under Chinese control (see 20.3 China's civilisation begins). Then, as now, more than 90 per cent of China's people lived in the country's heartland in the east, where the rivers provided water for agriculture. But these rivers often flooded, causing massive damage and loss of life.

DID YOU KNOW?

Over many centuries the mud from soil erosion raised the bed of the Huang River so much that the river flowed above the level of the countryside and had to be contained by man-made dykes.

When these dykes broke, floods drowned many people. According to Chinese records more than a million people died in the river's worst flood in 1117 CE.

20.6.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Name at least five different types of natural environments that exist in China.
2. Why have more than 90 per cent of Chinese people lived around the river valleys in the country's east?

Using historical sources as evidence

3. Describe the landscape in Source 1. Then use your library or the internet to find other images of landscapes along the Great Wall. Explain why few of those regions would have been able to support the levels of population that existed in China's east.

20.6.2 A big population

One in every four people in the modern world is Chinese. Researchers have found that even in ancient times China's population was huge but that it could rise and fall rapidly. They estimate:

- in Qin dynasty times (221–206 BCE) China had about 20 million people
- by 1 CE there were about 60 million people
- by 220 CE the population had fallen to about 40 million
- China's population took almost another thousand years to surpass 60 million.

The rapid population growth during the first Han dynasty (206 BCE–9 CE) was made possible by peace, improved farming methods and irrigation. However, these advances involved clearing forests and cultivating grasslands. Farming along the upper reaches of the Huang River caused massive soil erosion, filling the river with the mud that gave it the name 'Yellow River'. The falling population by 220 CE was probably caused mainly by deaths in rebellions and by soil erosion and famines.

SOURCE 2 A constant haze of air pollution hangs over modern China's cities. This is a view of Shanghai.



Native animal populations fell as humans took ever more of their habitat. In our time China's pandas have barely been saved from extinction. In ancient times, elephants and rhinoceroses roamed across much of China. The rhinoceros was driven to extinction and elephants now survive in only a few protected areas of the south-west.

20.6.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What are the most likely reasons for:
 - (a) China's population growth between around 221 BCE and 1 CE
 - (b) China's population decline by around 220 CE?
2. How did rising populations and land clearance for farming affect China's rivers and wildlife?

Using historical sources as evidence

3. What are the signs of pollution in Source 2?

20.6 Putting it all together

Identifying continuity and change

1. Explain what has changed and what has remained the same in China from ancient to modern times with regard to:
 - (a) population levels
 - (b) environmental problems.

Analysing cause and effect

2. Explain how population growth could have been both a cause and effect of the clearing of forests and cultivation of grasslands in ancient China.

20.7 Confucianism, religion and law

20.7.1 The ideas and influence of Confucianism

The oldest Chinese religious ideas involved worshipping gods of the sun, rivers and mountains. People worshipped ancestors and believed in good and evil spirits. Ancient China was also influenced by three great and lasting traditions — Daoism, Confucianism and Buddhism. China was tolerant of different beliefs partly because Confucianism, Daoism and Buddhism encouraged tolerance. Confucianism also had a strong and lasting influence on law in ancient China.

Confucius (551–479 BCE)

Amid the ongoing wars of the second half of the Zhou dynasty, **philosophers** taught ideas to solve the problems of their age. Confucius (K'ung Fu-tse) is regarded as the greatest of these thinkers. Born into a minor noble family, his education qualified him to become a high official. Instead he became a philosopher who taught about life and

SOURCE 1 An ancient drawing of Confucius made many centuries after his death



government. Some of his disciples gained high positions during the Warring States period, but Confucius himself never held anything more than a low post.

The philosophy of Confucius

What we know of Confucius comes from a book called *Lun-yu (The Analects)*. It is a collection of his sayings recorded by his followers. Confucius was not concerned with religion, but rather with how personal and governmental good conduct could ensure a just and harmonious society. He taught the ideals of family duty and believed that superior people behaved humanely. He taught that government should exist for the people's welfare and that people would follow a good ruler who led by example. He tried without success to convince the rulers of each of the states to restore good government.

By the time of his death Confucius had many followers. The best known of them was Mencius (372–289 BCE), who did succeed in influencing the rulers of his age. Confucius's ideas survived and influenced Chinese thought right up to modern times, as his ideal of the official as a scholar–gentleman replaced the earlier ideal of the warrior noble.

SOURCE 2 From *The Analects*

The princes of today are greedy in their search after material goods. They indulge themselves in pleasure and neglect their duties and carry themselves with a proud air. They take all they can from the people and invade the territory of good rulers against the will of the people, and they go out to get what they want without regard for what is right. That is the way of the modern rulers ...

SOURCE 3 From *The Analects*

When the ruler himself does what is right, he will have influence over people without giving commands, and when the ruler does not do what is right, all his commands will be of no avail.

20.7.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. When did Confucius live?
2. When did the ideas of Confucius begin to influence Chinese thought?

Using historical sources as evidence

3. Look closely at Source 1. Identify aspects of this drawing which suggest that Confucius was highly regarded many centuries after his death.
4. Read Sources 2 and 3.
 - (a) Why was Confucius critical of the rulers of his time?
 - (b) What did Confucius regard as qualities of a good ruler?

20.7.2 Religions in ancient China

Daoism

According to legend, **Daoist** ideas were first taught by a man called Laozi, who lived around the same time as Confucius. However, there is no evidence that Laozi existed. The main teaching in ancient Daoist texts is the need to retire from worldly concerns and follow the Dao ('the way'). Daoism holds that nature works in harmony and that people should see themselves as parts of nature in order to find happiness and health.

Another Daoist belief was that it was possible to become immortal. Daoists developed the martial art of kung fu and the idea of the yin and yang, complementary opposing forces that together produce harmony and balance.

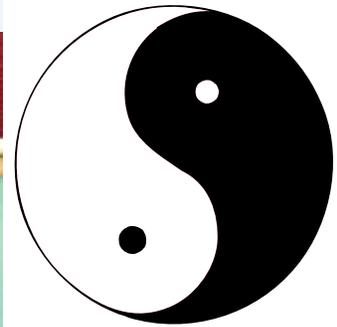
Buddhism

Founded in India in the sixth century BCE, Buddhism expresses the teachings of the Buddha (born Siddhartha Gautama in what is now Nepal, in about 563 BCE), who gave up worldly pleasures and devoted his life to the search for enlightenment. Central ideas of Buddhism are that suffering is caused by desire and that people have many lives. In each of these lives, people should try to live better until they reach nirvana. Then it is unnecessary to be reborn, as nirvana is a state of bliss free from the cares of the world. Buddhism came into China via the Silk Road (see 20.9 The rise and fall of the Han) and became an important influence by the late first century CE.

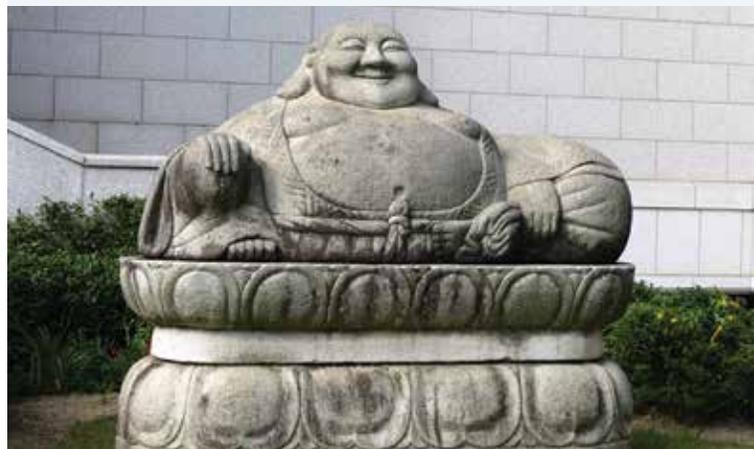
SOURCE 4 Kung fu is a Daoist martial art that has been practised for thousands of years.



SOURCE 5 The Daoist symbol for yin and yang



SOURCE 6 Chinese Buddhism spread to neighbouring countries. This Buddhist statue in Korea reflects Chinese influence.



20.7.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Describe the main ideas of Daoism.
2. How old is Daoism?
3. When did Buddhism become an important influence in China?
4. What are the central ideas of Buddhism?

Using historical sources as evidence

5. Look at Sources 4 and 5 and use the internet to find out what influence Daoist ideas have today.
6. Find images of the Buddha from South-East Asia and compare them with Source 6. Explain why it is clear that the Buddha figure in Source 6 has been influenced by Chinese Buddhism.

20.7.3 Laws in ancient China

Confucianism has had an ongoing influence on Chinese traditions and that influence is especially evident in present-day Chinese beliefs about the need to respect elders and to revere ancestors. But Confucius had no real influence on Chinese government and laws during his lifetime. However, he was later to have an important and ongoing influence on both these. Confucius taught that a golden age of good government

and good law had existed in early Zhou times. Long after his death, his teachings continued to have many followers. The best known of them was Mencius, who lived during about 372–298 BCE. Mencius taught that the Confucian ‘five relationships’, those between father and son, husband and wife, elder brother and younger brother, friend and friend and between ruler and subject were the basis of any well-ordered society. He succeeded in presenting Confucian ideas in ways that influenced some rulers during the late Warring States period.

Laws of the First Qin Emperor

When the warring states were united under the rule of China’s First Emperor, Qin Shihuang, in 221 BCE, the laws of the state of Qin were adopted throughout the newly created Chinese Empire. Confucianism had very little influence on these laws and Confucian scholars were suppressed by Qin Shihuang. Instead, the emperor’s laws followed the tradition of Legalism, a school of thought that held that people were bad by nature. So the laws that prevailed throughout China under the Qin dynasty were very harsh, with cruel punishments (see Source 7).

SOURCE 7 An extract from the laws of the state of Qin before 221 BCE. Under the Qin emperors such laws operated throughout China.

When five men jointly rob something worth one cash or more, they should have their left foot amputated, be tattooed, and be made convict labourers. If fewer than five men were involved but what they robbed was worth more than 660 cash, they should be tattooed, their noses cut off, and made convict labourers ...

Suppose the holder of a low rank stole a sheep. Before the case was judged, he falsely accused someone else of stealing a pig ... He should be left intact and made a convict labourer.

Anyone who kills a child without authorisation is to be made a convict labourer. This does not apply to killing a deformed or abnormal newborn.

Suppose A ran away from her husband and married B ... After they are caught, what should the sentence be? They should be tattooed and made convict labourers ... Convict labourers ... are to be manacled and fettered.

Laws change after the fall of the Qin

The Han dynasty, which replaced the Qin in 206 BCE, employed Confucian scholars as its officials. These men used their positions to revise the laws, restoring Confucian ideas. Those ideas continued to influence Chinese thought and Chinese law under a succession of dynasties until the end of the last Chinese Empire in 1911 CE. China’s laws in turn influenced the legal systems of countries where China had influence, especially Vietnam and Korea.

20.7.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. When did Confucian ideas first come to influence Chinese law?
2. What school of thought was the main influence on Chinese law under the Qin dynasty?
3. How was Confucianism restored as an influence on Chinese law under the Han dynasty?

Using historical sources as evidence

4. Read Source 7.
 - (a) According to the laws of Qin, a robber should have his left foot cut off and be made a convict labourer. How difficult would such a life be with only one foot?
 - (b) In this source, ‘left intact’ means not mutilated. Using this source as your evidence, explain which crimes were considered the most serious and punished the most severely under Qin law.
 - (c) Explain what conclusions you can draw from this source about the rights of women and children under Qin law.
 - (d) How do you think the ordinary people would have felt about Qin laws?

20.7 Putting it all together

Identifying continuity and change

1. Using the sources and other information in this subtopic, describe ways in which Confucianism continued to influence Chinese culture over many centuries.

Determining historical significance

2. Discuss why Confucius deserves to be regarded as one of the most significant individuals in Chinese history.

learn on RESOURCES – ONLINE ONLY



Complete this digital doc: Worksheet 20.3: Beliefs and religion

20.8 Qin Shihuang, the First Emperor of China

20.8.1 Qin rule

Ying Zheng, the ruler of Qin, ended the Warring States period by completing his conquest of the other states of China. He founded the Qin dynasty (221–206 BCE) and gave himself the title Shihuangdi. In modern Chinese he is called Qin Shihuang (pronounced *chin shir hwang*), which means ‘First Emperor of the Qin’. The Qin dynasty was the shortest in Chinese history but it was also one of the most important. It was China’s first centralised empire and its legacies include the Great Wall.

From 221 BCE, the harsh laws of the Qin state were imposed throughout China. Qin Shihuang sent armies south, conquering much of what is now southern China. To remove threats to his power, the emperor confiscated all weapons held by his people. He banished many nobles of the conquered states and forced others to live in his capital, where they could be watched. In 213 BCE, to stamp out rebellious ideas, he ordered a public burning of books, including those of Confucian scholars (see Source 1). He had scholars who kept their books executed by being buried alive.

Previously in China the nobles had held huge areas of the land in return for services to the king. Beneath them, millions of peasants toiled for the nobles in return for the right to use land. This is what we call a feudal system. The emperor changed this by dividing the country into local government areas administered by officials. He also allowed farming land to be bought and sold freely.

SOURCE 1 A Chinese painting illustrating Qin Shihuang’s burning of the books and the execution of scholars



20.8.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. How did the king of Qin become the ruler of China’s first centralised empire?
2. What area did Qin Shihuang conquer?
3. How and why did Qin Shihuang weaken the power of the nobles?
4. How did he reduce the influence of Confucian scholars?

Using historical sources as evidence

- Describe what is happening in Source 1.
- Working in pairs, role-play a situation in which a Confucian scholar is appealing to the First Emperor to change his mind about burning Confucian books. One of you should represent the perspective of the scholar and the other that of the emperor.

20.8.2 The Great Wall and other achievements of Qin Shihuang

From as early as the seventh century BCE, the Chinese states had built walls to protect themselves from invasion by the northern nomadic **Xiongnu** tribes. During the Warring States period, states had also built walls between themselves and neighbouring states. To unify China, Qin Shihuang ordered the destruction of the walls between former states. To prevent invasion he ordered his people to link the walls that defended China from the Xiongnu. About half of the present length of the Great Wall was first linked into one continuous barrier under the Qin (see Sources 2 and 3).

SOURCE 2 The Great Wall of China is the world's biggest single construction project. It is more than 5000 kilometres long and has 20000 watchtowers and 10000 beacon towers. The present wall is much longer and stronger than that completed under the Qin. It took many more centuries to complete, and over time its construction may have cost a million lives.

- A** The height and width of the Great Wall vary along its length. On average, the wall is 7 metres high and 5 metres wide.
- B** Qin Shihuang began linking existing short walls built by earlier rulers into one continuous wall to protect his empire from attacks from the north.
- C** Throughout successive dynasties, the wall was extended and repaired. Most of the present wall was built between the fourteenth and sixteenth centuries.



- D** The wall was topped by a road wide enough in parts to accommodate marching soldiers, horsemen and chariots.
- E** Soldiers on the watchtowers would signal an attack by lighting a fire.
- F** Watchtowers were protected by battlements. Soldiers would fire arrows down on the enemy as they tried to scale the wall.

Reforms of the Qin

To strengthen central rule and make China more efficient, Qin Shihuang introduced many reforms.

- Separate states were replaced with central rule and one set of laws.
- The calendar and people's dress were made the same throughout the empire.
- A single form of writing, a single system of weights and measures and a single currency (money) were to be used throughout the empire. This made trade and taxation more efficient.
- His new capital was Xianyang. Highways were built from it to unite the country, and new trading cities were founded.
- He ordered that all carts were to have the same axle width. This made it possible for carts to move more easily along the dirt roads as the wheels of all carts could travel in the same wheel ruts.

DID YOU KNOW?

About 5800 kilometres of roads were built in China by the fall of the Qin dynasty — more than the Romans had built almost four centuries later.

SOURCE 3 A section of the Great Wall of China



myWorldHistoryAtlas

Deepen and check your understanding of the topic with the following resources and auto-marked questions:

🔗 **Unification of China**

20.8.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why had the Chinese states built walls before the time of the First Emperor?
2. What walls did Qin Shihuang have destroyed and which walls did he have linked? Why?
3. How would standard calendars, laws, weights and measures, standardised money and a standard system of writing have made trade, taxation and government more efficient?
4. Why would the emperor have wanted to also standardise people's dress and the width of axles on carts?

Using historical sources as evidence

5. Source 2 is a secondary source and Source 3 is a primary source. Compare them to judge the accuracy of Source 2.
6. Describe features of the Great Wall that could have made it an effective barrier to invasion.
7. Look at the landscape in Source 3 and read the Source 2 caption. Why do you think so many people could have died building the Great Wall?

20.8.3 The fall of the Qin

Qin Shihuang wanted to live forever. He sent hundreds of men and women to sea on rafts in search of the secret of everlasting life, but none ever returned. He surrounded himself with fortune-tellers and others who promised to find him immortality. Despite these efforts he died at the age of 49 in 210 BCE, while on a journey. His chief minister, Li Si (pronounced *lee shir*), and others pretended for a while that the emperor was still alive. This gave them time to forge a decree that would place their choice of successor on the throne. It was summer, however, and the body of the emperor soon began to smell, so Li Si ordered a cart filled with rotting fish to follow the imperial carriage to disguise the smell. Only later did they announce the emperor's death, which was possibly due to poisoning by mercury, commonly used in 'immortality' drugs.

His successor, the Second Emperor, lasted only a few years. Higher taxes and forced labour had made the lives of the peasants unbearable. Hundreds of thousands of peasants had been conscripted to build palaces, roads and the emperor's tomb and to link the Great Wall and serve in the army. A peasant rebellion from 209 to 206 BCE destroyed the Qin dynasty. Liu Bang, a leader of the rebellion, became the new emperor and founded the Han Dynasty. Qin Shihuang thought he had founded a dynasty that would last for thousands of emperors. He failed in this. He had, however, turned a group of rival states into an empire and created a central system of government that lasted until the twentieth century.

DID YOU KNOW?

In ancient China dragons were sometimes depicted with their mouths open, roaring as if to frighten away evil spirits. The dragon is a symbol of wisdom, strength and goodness. It was under Qin Shihuang that the dragon was first used as a symbol for Chinese emperors.

SOURCE 4 An extract from Thomas Bartlett, *Qin Dynasty: China's Ancient Revolution*

The overall image of the Qin state and its imperial phase [the period of the Qin dynasty], as transmitted through history by surviving records, is a grimly harsh one ... These charges [against the Qin rulers] reflect early Han writers' self-interested writing of Qin history ... Overall, the Qin reflects in concentrated form the inhumane aspects of the Warring States period ... But, from the perspective of nation building, some modern Chinese ... emphasise his achievements, typically saying that 'he sacrificed one generation to benefit 10000 future generations'.

20.8.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. How might the First Emperor's attempts to live forever have contributed to his early death?
2. How did Li Si try to disguise the smell of the emperor's rotting body?
3. When did the Qin dynasty fall?
4. Why was the Second Emperor unable to hold onto power?

Using historical sources as evidence

5. Read Source 4.
 - (a) Why would writers in the early Han dynasty have wanted to portray the Qin dynasty as a harsh one?
 - (b) Why have some modern Chinese taken a more favourable view of the Qin dynasty?

20.8 Putting it all together

Identifying continuity and change

1. Using the sources and information in this subtopic answer the following questions.
 - (a) How was Chinese society changed under the First Emperor?
 - (b) How would groups such as the nobles, the peasants and Confucian scholars have regarded these changes?

Analysing cause and effect

2. Identify reasons why the Qin dynasty was able to rise and why it fell after such a short time.

Determining historical significance

3. Hold a debate on whether or not Qin Shihuang should be regarded as possibly the most significant ruler of ancient China. In your arguments, consider Qin Shihuang's achievements as well as his methods.

 **Complete these digital docs:** Worksheet 20.4: A great wall, Worksheet: 20.5: Acrostic poem for an emperor, Worksheet 20.6: The First Emperor

20.9 The rise and fall of the Han

20.9.1 Reforms, expansion and trade

The fall of the Qin dynasty was followed by four years of bloody civil war before Liu Bang defeated his rivals and became the first ruler of the Han dynasty. This dynasty lasted, except for a brief interruption, for four centuries and made important achievements in education, science and trade. The Han dynasty had such influence on later dynasties that Chinese people in our time call themselves ‘Han’ people.

Han reforms

Liu Bang did not want to share the same fate as the Qin dynasty so he took steps to restore prosperity. The size of the army was reduced. He also reduced taxes on the peasants and encouraged farming to ensure plentiful supplies of food. As a result, China’s population reached 60 million by the end of the first century BCE. However, landlords continued to exploit the peasants.

SOURCE 1 Chinese life under the Han

A The marketplace

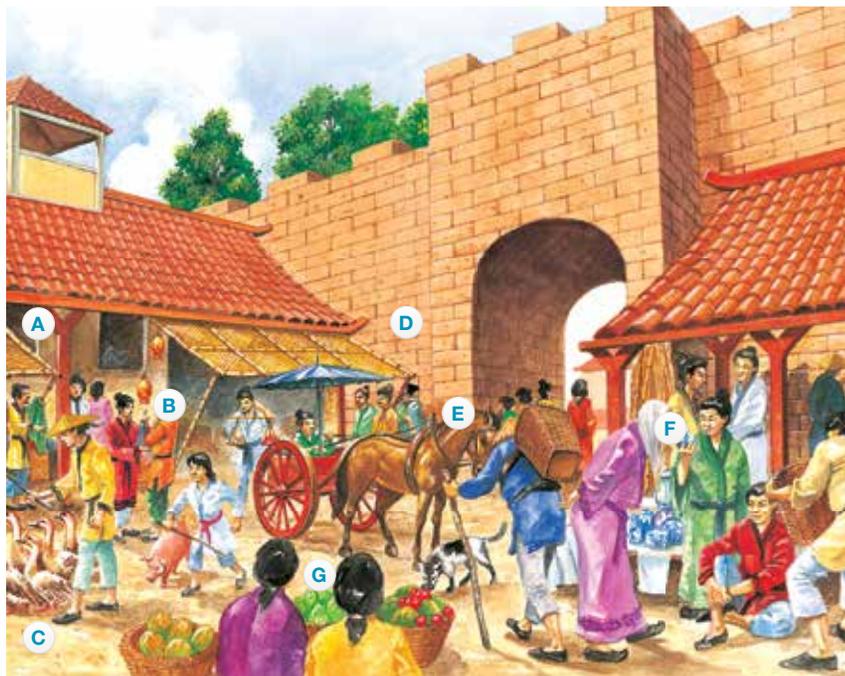
As in Xianyang, large and lively marketplaces were usually just inside the city gates. This allowed access by travelling merchants. Merchants were looked down on by society even if they were rich. They were not seen as contributing in the way farmers did. Goods from all over China and the known world were sold and traded in the market.

B People you might see

In the noisy markets, people bought and sold food and animals. There were musicians, acrobats, jugglers, letter writers, dentists and craftworkers.

C Live-stock available

Owl, panther, deer, dog, pig, ant eggs, snails and turtles were mostly bought by the rich.



D City walls

Ancient Chinese cities were circled by two walls. City walls were built to protect the people. If you visit China today, you will still be able to see the remains of these walls in many cities. The inner wall was called *cheng* and the outer wall was called *guo*. Often moats, called *chi*, surrounded these walls. The inner city was called *geng*, and together they were known as *cheng chi*.

E Family values

Rich and poor people lived in extended family groups. Their belief in Confucian values strengthened family ties. Ancestor worship and respect for elders were important values.

F Crafts and goods

Murals, jade jewellery and carvings, glazed pottery, silk goods, and objects made from cast iron such as ploughs were bought and sold.

G Women

According to Confucian principles, women were subordinate to men, and life was difficult for females living in a male-dominated society. A daughter was given no education and worked under the direction of her mother. Her father decided whom she would marry. Once married, a girl would live with her husband’s family and obey her mother-in-law. A female had no status until she gave birth to a male child.

DID YOU KNOW?

The Han dynasty is usually regarded as more tolerant than the Qin dynasty. However, when the great historian Sima Qian dared to speak in defence of an officer who was unfairly blamed for a Chinese defeat by the Xiongnu, Emperor Wudi had Sima Qian **castrated** and thrown into prison.

A system of state education was founded. It included a Great Academy, in which boys studied the classic books of Confucianism. No girls were enrolled. The boys were expected to memorise what they studied and were not allowed to criticise or challenge ideas. Through examinations they were selected for positions as bureaucrats in the civil service.

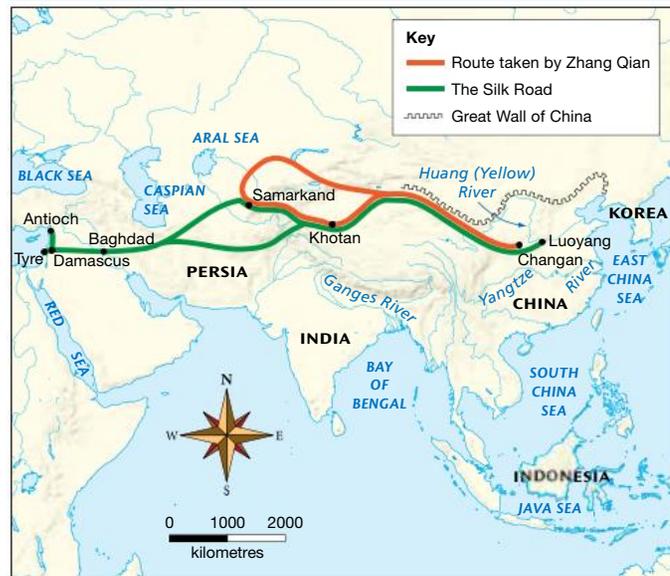
China expands

China expanded under the Han. In 138 BCE Emperor Wudi (140–87 BCE) sent Zhang Qian and 99 others on a mission to establish relations with people in the remote west. After twice being captured and enslaved by the Xiongnu and twice escaping, Zhang returned in 125 BCE with stories of civilisations that China had never heard of before. Zhang Qian was sent on two further missions to find a trade route to Central Asia and India. In the following years, Chinese rule was extended into the north of Korea in 109 BCE, and from Korea the influence of Chinese culture spread to Japan. Much of what is now south-eastern China and western China was brought under Han control by about 102 BCE.

The Silk Road

By the early first century BCE further Chinese missions led to the founding of the famous Silk Road. From this time onward, camel trains loaded with valuable silk were able to make the hazardous journey from China through the deserts and mountains of Central Asia to India, Persia and the Roman Empire. Traders from other lands used the Silk Road to bring products including jade, silver and Roman glassware to China.

SOURCE 2 The Silk Road, the world's longest trade route in continuous use



Source: Map drawn by Spatial Vision.

myWorldHistoryAtlas

Deepen and check your understanding of the topic with the following resources and auto-marked questions:

• The Silk Roads

20.9.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. How did Liu Bang become the founder of the Han dynasty?
2. Why do modern Chinese people call themselves 'Han'?

3. How did the Han try to win support for their rule?
4. In what ways did the Chinese education system suppress critical thinking?
5. How were China's trade, territory and influence expanded under the Han?

Using historical sources as evidence

6. Look at Source 1 and analyse it using these questions.
 - (a) Why were cities enclosed by walls?
 - (b) What role did marketplaces play in expanding trade?
 - (c) What can you discover from this source about activities, clothing and hairstyles in a Han era town?
7. Study Source 2.
 - (a) Use the scale to work out approximately how far Zhang Qian travelled.
 - (b) Explain how China would have benefited from the contacts established through the Silk Road.

20.9.2 Growing discontent, rebellion and the fall of the Han

The rich get richer and the poor get poorer

To control newly conquered territories, the Han rulers **deported** many local people and settled their lands with Chinese. The ruling classes and merchants benefited from this growth of the empire, but the ordinary people of China paid a terrible price. The Han rulers paid for wars of conquest through increased taxes on the peasants. Many peasants had to sell their land to pay taxes. Others were so desperate that they were forced to sell their children or themselves into slavery.

Wang Mang

The peasants became more desperate while powerful landlords became richer. Even among the privileged there were people who saw this as unjust. Wang Mang was an official who had support from many Confucian scholars. In 9 CE he seized control of China from the infant Han emperor and set up the Hsin dynasty. In his first year as ruler, Wang Mang proclaimed many reforms.

- All land was to become the property of the emperor so that the estates of big landlords could be given to the peasants.
- The slave trade was to be banned.
- Government loans were to be given to peasants at low interest rates. This would have helped peasants who had to borrow from moneylenders at high interest to pay taxes but lost everything when their debts became too big to repay.

SOURCE 3 Terracotta figures representing Han dynasty cavalry. Cavalry became a major part of the Han army because of the mobility it gave Chinese armies fighting mounted nomads.



SOURCE 4 From a Chinese scholar of the early second century BCE, in the *Han-shu Han History*

These days a family of five peasants will have at least two persons who are liable for labour-services and conscription. What with their ploughing in the spring and hoeing in the summer, harvesting in the autumn and storing in the winter, with felling firewood, repairing government offices and rendering labour-service ... in none of the four seasons will they have a day of rest. And, in spite of all this painful toil, they will still have to endure such natural disasters as flood and drought and also the cruelty of an impatient government which imposes taxes ... those who own something sell it off at half its price; and those who own nothing borrow at doubled rates of interest. It is for this reason that some dispose of their lands and houses, and sell their children and grandchildren to redeem their debts.

SOURCE 5 From the statement of a Han dynasty official in 81 BCE

Those who live in ... spreading mansions ... know nothing of the discomforts of one-room huts and narrow hovels, of roofs that leak and floors that sweat.

Those with a hundred teams of horses ... and wealth heaped in their storehouses ... do not know the anxiety of facing days that have a beginning but no end ...

The fall of the Hsin dynasty

The privileged classes forced Wang Mang to abandon these reforms and so peasant revolts began in 14 CE. Four years later, led by a secret society called the Red Eyebrows, the rebels attacked towns, killing officials and landlords. When powerful members of the old ruling family joined the fight against Wang Mang, his armies were defeated. Wang Mang was killed and beheaded in 23 CE. This was the end of the Hsin dynasty. The armies of the old ruling family crushed the Red Eyebrows and in 25 CE a new Han emperor took the throne.

The Eastern Han dynasty

The second period of Han rule is called the Eastern Han dynasty because the capital was moved to the east. So many people had died in the rebellion that there was now enough land for the peasants. Large areas of state land were given to them and taxes were reduced. But the big landowners benefited most from these reforms. They paid the lower taxes but continued to take at least half the harvest of their tenant farmers. Increasingly, the great landowning families were becoming more powerful than the Han government.

The Yellow Turbans and the fall of the Eastern Han

By the middle of the second century CE more local peasant uprisings had broken out. These were crushed, but in 184 CE a secret society called the Yellow Turbans led a countrywide revolt. As the central government collapsed, **warlords** became the absolute rulers of their own local areas. Their armies massacred many peasants during the years that it took to smash the revolt. When they finally defeated the Yellow Turbans, the warlords fought each other for the throne of China. By 220 CE the Han dynasty was finished and China began centuries of civil war, division and suffering.

20.9.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. Why did the Han rulers establish colonies of Chinese in newly conquered lands?
2. Which social class benefited and which suffered as a result of wars waged to expand the empire? How would members of those classes have regarded colonisation and war?
3. How did Wang Mang try to help the peasants and how did the ruling classes regain control?
4. What events brought about the end of the Eastern Han dynasty?

Using historical sources as evidence

5. Study Source 3. Why did the Han adopt cavalry as a major part of their army?
6. Read Sources 4 and 5.
 - (a) What social problems do the sources describe?
 - (b) What are the perspectives of the writers of each source?
 - (c) What evidence do the sources provide for the motives of peasants who rebelled against Han rule.

20.9 Putting it all together

Identifying continuity and change

1. Working in small groups, discuss why you think peasant rebellions were able to overthrow dynasties but were unable to change the system that caused their problems.

Analysing cause and effect

2. Using the sources and information in this subtopic, explain what caused rebellions such as that of the Red Eyebrows and the Yellow Turbans.
3. Imagine you are a leader of either of those rebel movements. Design a poster to encourage peasants to join your rebellion.

20.10 The heritage of China

20.10.1 Some great Chinese inventions

There are many legacies of ancient China. One of the most significant was the system of rule by emperors, which persisted until 1911. Even in modern times, Chinese leaders have continued to exercise powers that are not very different from those of the emperors. China's heritage also includes traces of the ancient past such as the Great Wall and the amazing discoveries from Qin and Han tombs. Perhaps the most remarkable part of China's heritage is the scale of discoveries and inventions that originated in ancient China, in many cases long before similar developments occurred in the western world.

Many things we take for granted today were invented by the people of ancient China. Here is a list of some of the more important ones:

- paper
- printing
- decimal system
- wheelbarrow
- seismograph
- matches
- gunpowder
- parachute
- kung fu/wushu
- cast iron
- ink
- helicopter rotor and propeller
- horse collar
- silk
- kite
- rocket
- compass
- umbrella
- printed book
- fan
- abacus
- origami
- cannon
- bomb
- acupuncture
- spinning wheel
- iron plowshare
- paper money
- chopsticks.

SOURCE 1 An ancient compass



Compass

The Chinese invented the magnetic compass. Compasses were first used to ensure houses were built facing a direction that was in harmony with nature.

Paper and printing

The inventions of paper and printing were to have an enormous impact on people's lives. The earliest paper was made by mixing rags, rope, bark and even fishing nets in a watery solution and crushing the material down to a wet pulp (see Source 2). The disintegrating fibres were used to create sheets of paper, which were used for many things including umbrellas, clothing, toilet paper, curtains, money and wallpaper. Paper revolutionised communication. Traditionally silk had been used for writing, but it was expensive. Paper was cheaper, so more people could afford to use it for writing.

Following the invention of block printing (see Source 3) in 750 CE, every Chinese scholar and public servant bought copies of the most important books for their shelves. With paper, records could be kept and instructions sent more easily and more often. Today we still rely heavily on paper for communication.

SOURCE 2 Paper-making in ancient China



SOURCE 3 Printing in ancient China



20.10.1 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. For what purpose were compasses first used in China?
2. What material was traditionally used for writing in China and what was gained from the invention of paper?

Using historical sources as evidence

3. Look at Source 1 and suggest how this early compass worked.
4. What can you tell from Sources 2 and 3 about early Chinese methods of paper-making and printing?

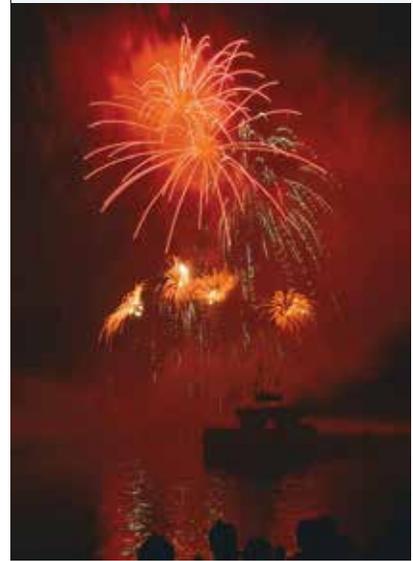
20.10.2 Also made in China

Today we are used to buying all sorts of goods that are made in China. But how many people realise that long ago China led the world in inventions such as gunpowder and in developments in medicine, earthquake detection and even a favourite hobby of many people's childhoods, flying kites?

Gunpowder

From very early times the Chinese searched for a drug that would give the emperor eternal life. By accident they discovered gunpowder. At first, gunpowder was used in fireworks for entertainment and in religious ceremonies. Later it was used in making simple bombs. Lengths of heavy bamboo were loaded with gunpowder and a fuse set in the side. When cast iron was developed, pipes were loaded to create the first cannons. The Chinese then developed cannons that fired arrows with individual rockets attached — the first multi-stage rocket. Flamethrowers, mines and hand grenades were also used by Chinese armies.

SOURCE 4 Gunpowder was first used in fireworks.



Medicine

Acupuncture appears to have been used in China since the third century BCE. Needles were understood to block or stimulate the flow of yin and yang to certain areas of the body. The ancient Chinese were also the first to understand blood circulation and by 200 CE were using an **anaesthetic** based on hemp. Possibly the first human **dissection** was carried out on the body of a criminal in 16 CE by a doctor and a skilled butcher. Human dissection was soon banned, though, as it conflicted with the Confucian belief in the purity of the body.

SOURCE 5 Zhang Heng's seismograph



Seismographs

Zhang Heng invented the world's first seismograph — an instrument for detecting earthquakes — in 132 BCE. An earth tremor caused a ball to be released from a dragon's mouth and fall into a toad's mouth farthest away from the earthquake epicentre. This showed the emperor the direction of the disaster.

SOURCE 6 Kites like this could also be seen in ancient China.



Kites

Kites were first made out of bamboo and silk, and later paper. They were used mostly during festivals, but they were also used in battle to frighten enemies (by creating unusual sounds through the strings) and to send signals to the troops. Kites were even used for fishing and for scaring birds away from crops.

20.10.2 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. How did the Chinese discover gunpowder?
2. In what medical advances did China lead the world?

Using historical sources as evidence

3. Look at Sources 4, 5 and 6. Choose one of these ancient Chinese inventions and conduct research on the internet to prepare a PowerPoint presentation that asks and answers the following questions:
 - (a) When was it first discovered?
 - (b) How was it made?
 - (c) How did it work?
 - (d) How was it used?
 - (e) What effect did it have on people's lives?
 - (f) Is the invention used today and, if so, how is it now used?

20.10.3 Conserving China's cultural heritage

The United Nations Educational, Social and Cultural Organization (UNESCO) is the world body responsible for identifying natural and cultural sites in all countries that are of such great value that they must be conserved. These sites include the remains and heritage of ancient civilisations. UNESCO maintains a list of these World Heritage Sites, which you can view on its website. You will not be surprised to find that China has more UNESCO-listed sites than almost any other country and that the Mausoleum of Qin Shihuang (see Source 7) and the Great Wall of China are among the listed sites.

SOURCE 7 Terracotta soldiers and horses at the Mausoleum of Qin Shihuang



20.10.3 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Check your understanding

1. What is the role of UNESCO?
2. Name two UNESCO World Heritage listed sites in China.

Using historical sources as evidence

3. In Source 7, what evidence can you see of measures that have been taken to conserve the objects that were excavated from around the tomb of China's First Emperor?

20.10 Putting it all together

Determining historical significance

1. Compare the various ancient Chinese inventions described in this section and decide on one of them that you think had the biggest impact on people in its time and on future generations. Write an advertisement for it. ▶

2. Visit the UNESCO World Heritage List. For either the Mausoleum of the First Qin Emperor or the Great Wall find out:
 - (a) what criteria were used to justify its World Heritage listing
 - (b) what concerns UNESCO has about developments that could reduce its value
 - (c) what UNESCO believes China is doing or must do to protect and conserve the site.

learn on RESOURCES – ONLINE ONLY

 Complete this digital doc: Worksheet 20.7: Legacy

20.11 SkillBuilder: Analysing different perspectives

online only

HOW DO WE ANALYSE THE DIFFERENT PERSPECTIVES OF PEOPLE IN ANCIENT CHINA?

Primary sources often give different perspectives because not everyone will have seen an event or problem from the same point of view. It is important to analyse different perspectives, especially for bias and propaganda when trying to determine what happened in the past.

Go online to access:

- an explanation of the skill (Tell me)
- a step-by-step process to develop the skill, with an example (Show me)
- an activity to allow you to practise the skill (Let me do it)
- questions to test your application of the skill (Applying skills).



20.12 Review

online only

This final subtopic provides a range of opportunities for you to review and respond through:

- (i) revising and checking your historical knowledge
- (ii) demonstrating your ability to apply historical concepts and skills.

Go online to access:

- a key chronology of events relevant to the topic
- a summary of the key knowledge presented in the topic
- a 'Big Questions' activity
- a multiple choice topic test
- short answer or extended writing responses.

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 Try out this interactivity: Ancient China timeline (int-2939)

 Complete these digital docs: Worksheet 20.8: Find-a-word, Worksheet 20.9: Summing up

20.11 SkillBuilder: Analysing different perspectives

20.11.1 Tell me

What are different perspectives and why do they occur?

A perspective is a point of view, which is formed from someone's values and beliefs, attitudes and experiences. In a study of a period of history, perspectives on an event or a period can be gathered from primary sources, especially eyewitness accounts as might be found in a source such as a diary, as well as official sources such as records produced by those in power. Primary sources often give different perspectives because not everyone will have seen an event or problem from the same point of view. Some primary sources are biased (one-sided or prejudiced) or were created as propaganda (attempts to persuade people to accept a biased view). Each source will reflect the perspective of its creator and their target audience and purpose.

Why is it important to analyse different perspectives, especially bias and propaganda?

To find the truth on any matter, we have to be aware that what someone says or writes about it may be one-sided and an attempt to persuade and possibly to deceive. This is as important when trying to make up our minds on current issues as it is in trying to understand the past. For example, when buying a product you do not necessarily trust what advertisements say about it. An advertiser will wish to show a product in its best light, that is, present only positive aspects of it, so that a consumer will buy it. In the same way, a ruler may only want positive records of their rule to be made or displayed to ensure no dissent from those they rule or that their legacy is protected. Sometimes, the perspectives of those not part of the ruling group may be silenced — their absence from the public record also tells a historian something about that period. Historians must often research extensively to find perspectives of a range of people about events from the past in order to build up a balanced picture of the event or time period.

20.11.2 Show me

How to analyse different perspectives in primary sources

When you read an interpretation of a historical event or development you need to ask:

1. What is the subject or main idea of the source?
2. When was the source created?
3. Who created the source?
4. Why was it written?
5. Does it try to persuade and if so how does it do this?
6. Is the source supported or contradicted by the evidence of other sources?

An example: Qin Shihuang's achievements

Qin Shihuang wanted to be seen as a great and powerful ruler who brought peace and happiness to his people. Source 1 is an example of his propaganda. Sources 2 and 3 provide other evidence. The six questions have been applied to Source 1.

1. *What is the subject or main idea of the source?* The main idea is that the First Emperor's reforms have unified China, given its people certainty about the laws, protected them from wrongdoers and made them hardworking, responsible, happy and grateful to their ruler.

SOURCE 1 From an inscription ordered by Qin Shihuang. It was carved in 219 BCE.

...Great are the Emperor's achievements ...
All people under heaven
Work with a common purpose.
Tools and measures are the same ...
The written script is made the same ...
He defines the laws, leaving no one in doubt,
Making known what is forbidden ...
No evil is tolerated,
So all strive to be excellent people ...
None dare to be lazy ...
The ordinary people know peace ...
People help each other,
There are no robbers or thieves:
People delight in his rule ...
Wherever life is found,
All acknowledge his supreme rule ...

2. *When was this source created?* It was written in 219 BCE.
3. *Who created the source?* Qin Shihuang ordered it to be written.
4. *Why was the source written?* It was written to tell people that the emperor acted for their benefit.
5. *Does it try to persuade and if so how does it do this?* It tries to persuade by giving a distorted account of what was happening. It makes no mention of forced labour, high taxes and the cruelty of the emperor's punishments.
6. *Is the source supported or contradicted by the evidence of other sources?* Source 2 supports the statement about measures. Source 3 contradicts most of the source by accusing the Qin rulers of causing misery and suffering rather than happiness.

SOURCE 2 From a Qin imperial edict. When the First Emperor decided to standardise weights and measures, his order was published on bronze plates. Attached to the plates were wooden measures.

In the twenty-sixth year of his reign [221 BCE], the Emperor unified all the lands under heaven, brought peace to the people, and mounted the throne as Emperor. [He] ordered the prime minister to reform the measures and weights. For those who do not know the new system, this [object] is a standard model for making more copies.

SOURCE 3 Hsun-tzu, a Confucian scholar of the third century BCE, commenting on the methods of the rulers of the state of Qin in the last years of the Warring States period. These same methods were used throughout China under the Qin dynasty.

The Qin rulers employ their people harshly, terrorise them with authority, embitter them with hardship, bribe them with rewards, and destroy them with punishments.

20.11.3 Let me do it

In 213 BCE, Qin Shihuang ordered the burning of many books. He followed this up by executing hundreds of scholars who kept their books. Source 4 gives the official reasons for these harsh measures. Now use the six questions to see if you can recognise the bias in this source and analyse it. Source 5 provides other evidence.

SOURCE 4 Advice given by Prime Minister Li Si to Qin Shihuang

Your Majesty rules a unified Empire in which the difference between right and wrong is as clear as your own total authority. Yet there are people who unofficially spread teachings that are against official orders ... they openly criticise your commands ... The people are thus encouraged to be disrespectful. If this lying is not stopped the imperial authority will be weak ... all people owning books ... should destroy them.

SOURCE 5 From Sima Qian's book *Shiji* 91 BCE

But the First Emperor was greedy and short-sighted, confident in his own wisdom, never trusting his meritorious officials, never getting to know his people ... outlawing books and writings, making the laws and penalties much harsher, putting deceit and force foremost and humanity and righteousness last, leading the whole world in violence and cruelty.

SOURCE 6 Qin Shihuang



20.11 Activities

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Using historical sources as evidence

1. Sima Qian was Grand Historian of China during the Han dynasty. He did not live in the period when Qin Shihuang ruled. How does this fact affect your assessment of the usefulness of Source 5?
2. Suggest sources or people from the time that might present other perspectives on Qin Shihuang's book-burning edict.
3. Explain why primary source evidence from ancient China often provides different perspectives.
4. Explain why, despite differing perspectives, primary source evidence from ancient China rarely gives the perspectives of the lower classes.
5. Why would Sources 1 and 2 need to be questioned very thoroughly?
6. Explain why differing perspectives can sometimes make it difficult to judge the reliability of ancient Chinese primary sources.

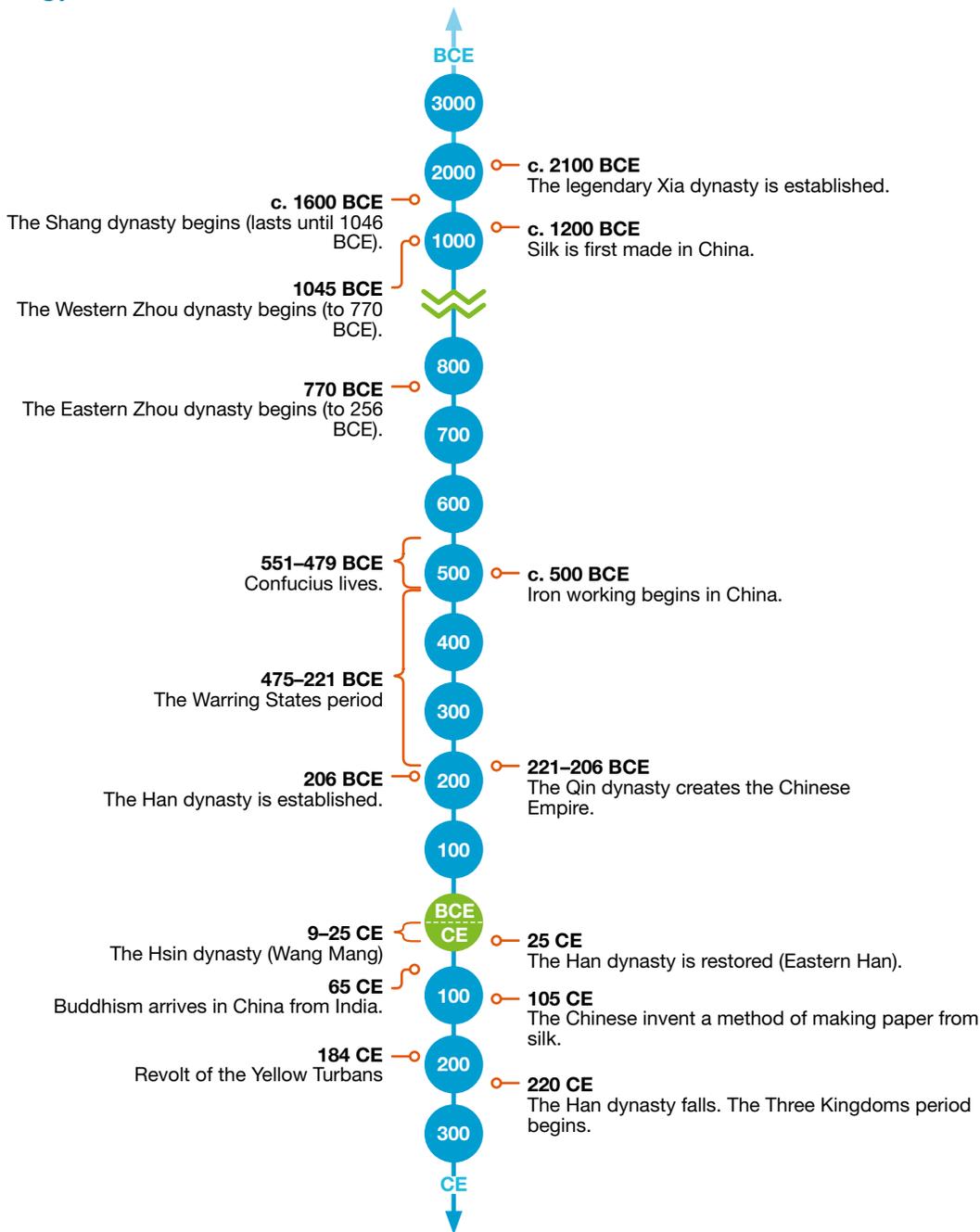
20.12 Review

In this topic we have learned about ancient China from the times of the Shang dynasty (1600–1046 BCE) to the fall of the Eastern Han dynasty in 220 CE. This period covers much of the time of the Egyptian New Kingdom, the Greek city-states and the Roman Empire. We studied some of ancient China’s rulers, its people, and its ideas and achievements. We have also learned about:

1. ways in which China’s physical features influenced the development of its civilisation
2. significant ancient Chinese beliefs such as Confucianism, Daoism and Buddhism
3. the importance of China’s contacts with other societies
4. peasant rebellions and other conflicts within ancient Chinese society.

20.12.1 Review

Chronology: Timeline of ancient China



Key knowledge: summary

20.2 Examining the evidence

- Shang dynasty inscriptions are our earliest written evidence of ancient China.
- Archaeological finds provide evidence of rich cultures during Qin and Han times.
- The most exciting find was the discovery of the terracotta warriors guarding the tomb of Qin Shihuang.

20.3 China's civilisation begins

- There is no primary source evidence for the legendary Xia dynasty.
- Early Chinese rulers based their authority on the mandate of heaven.
- Early Chinese civilisation was based on farming in river valleys in eastern China.

20.4 The people of ancient China

- Rulers were supported by powerful lords and landowning gentry, who included warriors and bureaucrats.
- Women had an inferior status.
- Peasants formed the largest group and they suffered through natural disasters and wars.
- Merchants and slaves were at the bottom of Chinese society.

20.5 Everyday life and death

- Life for all classes of the common people was harsh, especially for women.
- We know much more about death and funeral customs of the ruling classes than of the common people.
- It was the custom of the ruling classes to bury goods with the dead to provide for them in the afterlife.
- Until Han times, people were also buried with rulers to serve them in the afterlife.

20.6 Ancient China and the natural environment

- China is a vast country with a wide variety of climates and landscapes
- Ninety per cent of the large population lived in the east, where agriculture was based along river valleys.
- Intensive clearing of land for farming caused massive soil erosion and other environmental damage.

20.7 Confucianism, religion and law

- Confucianism is not a religion. It is concerned with how good conduct can create social harmony.
- Confucianism had no influence in its founder's lifetime but much influence in later periods.
- Daoism and Buddhism became major religious influences in ancient China.
- The laws of China's First Emperor were based on the harsh laws of the state of Qin.
- Confucianism regained influence under the Han and later dynasties.

20.8 Qin Shihuang, the First Emperor of China

- Qin Shihuang took control of China in 221 BCE after completing his conquest of the other Chinese states.
- He stamped out potential threats to his power through several measures, including confiscating weapons, controlling the nobles and burning books.
- He turned the system of defensive walls into the Great Wall of China.
- In 209 BCE, the Qin dynasty was destroyed in a peasant rebellion.

20.9 The rise and fall of the Han

- The Han dynasty carried out reforms to avoid the fate of the Qin.
- China expanded under the Han.
- Chinese missions led to the founding of the Silk Road, which opened trade between China and India, Persia and the Roman Empire.
- Inequality grew under the Han and rebellions led to its fall in 220 CE.

20.10 The heritage of China

- China's legacies include an amazing number of inventions, including printing and gunpowder.
- China's cultural heritage includes many UNESCO listed sites, among which is the Great Wall and the Mausoleum of the First Emperor.

Key knowledge: Multiple-choice topic test

1. Shang dynasty inscriptions provide early evidence of ancient Chinese:
 - (a) ironwork.
 - (b) gunpowder.
 - (c) farming.
 - (d) manufacturing.
2. The mandate of heaven meant which of the following for Chinese emperors?
 - (a) They were believed to be gods.
 - (b) They were supposedly chosen by the gods to rule.
 - (c) They lived like gods.
 - (d) They said there were no gods.
3. During the Warring States period there were wars between which of the following?
 - (a) Local lords who controlled their own states within the Zhou kingdom
 - (b) Local lords who controlled their own states outside the Zhou kingdom
 - (c) Nomads who wanted to invade China
 - (d) Nobles and peasants
4. Merchants occupied which of these positions in Chinese society?
 - (a) At the top, along with nobles
 - (b) Between nobles and peasants
 - (c) Almost at the bottom
 - (d) Between peasants and artisans
5. Environmental problems in ancient China were caused mainly by which of the following?
 - (a) Polluting the air
 - (b) Burning coal
 - (c) Polluting the ocean
 - (d) Clearing forests for farming
6. The main ideas of Confucius were concerned with:
 - (a) worshipping gods.
 - (b) conduct that ensured a harmonious society.
 - (c) obedience to kings.
 - (d) rebelling against authority.
7. The martial art of Kung Fu was developed by which of these groups?
 - (a) Daoists
 - (b) Buddhists
 - (c) Followers of Confucius
 - (d) Qin Shihuang's army
8. Qin Shihuang changed the feudal system by which of these means?
 - (a) Burning books
 - (b) Executing scholars
 - (c) Confiscating weapons
 - (d) Allowing farming land to be bought and sold
9. Around how many people might have died constructing the Great Wall of China?
 - (a) Five hundred
 - (b) A million

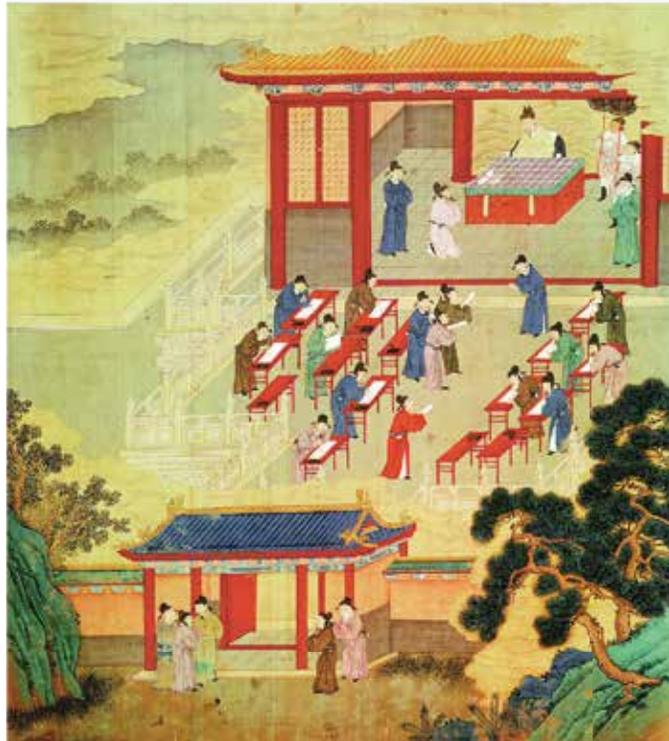
- (c) Two thousand
 - (d) Five million
10. Under Qin Shihuang's orders, scholars who refused to burn their books were:
- (a) beheaded.
 - (b) fined.
 - (c) imprisoned.
 - (d) buried alive.
11. Yellow Turbans and Red Eyebrows were which of these?
- (a) Ancient Chinese fashions
 - (b) Games played by the landowning gentry
 - (c) Secret societies that organised rebellions
 - (d) Distinguishing features of the Xiongnu nomads
12. The Silk Road was the land route for trade between China and which places?
- (a) India, Persia and the Roman Empire
 - (b) South-East Asia
 - (c) Japan and Korea
 - (d) Mongolia

20.12.2 Respond

Using historical sources as evidence

1. Analyse Source 1 using the following questions.
- (a) Describe the details of the painting.
 - (b) Identify ways in which the appearance of the students and the room differ from a modern examination room.
 - (c) Describe the kinds of questions that examiners would be likely to ask.
 - (d) Describe the types of answers that students would be expected to give.
 - (e) To fully analyse this source, you would need information that is not provided here. Give examples of such types of information.

SOURCE 1 This painting depicts a Chinese emperor assessing the performance of students in exams for the civil service.

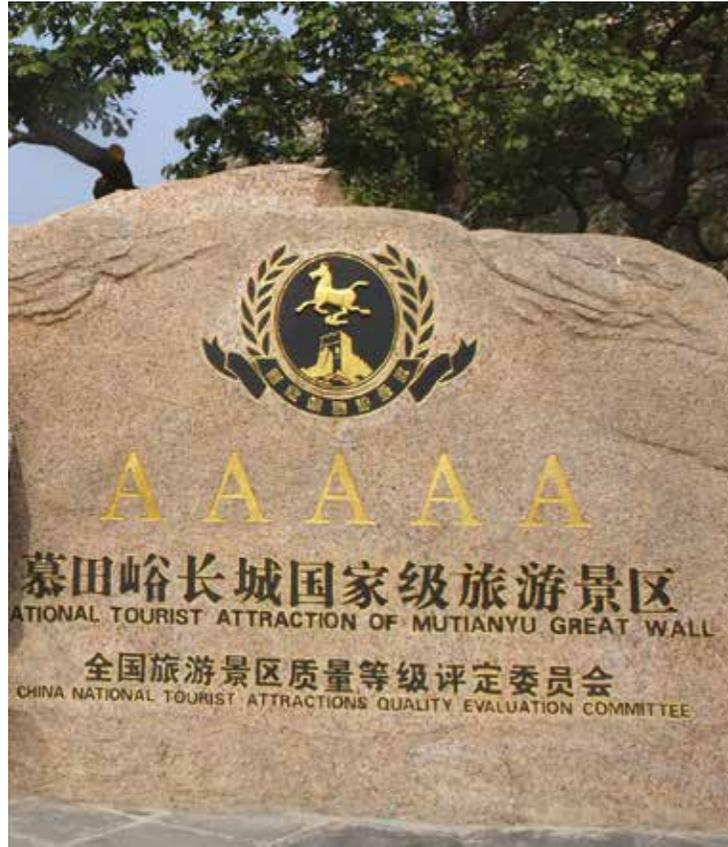


Identifying continuity and change

2. Imagine that you have been hired by the Chinese tourism authorities who erected the stone marker in Source 2 (on the following page). Your job is to prepare a guide to this site for Australian and other English-speaking tourists visiting the site. You will need to use what you have learned in this topic as well as information you can gather using the internet, including the UNESCO World Heritage List. Your guide should include:
- (a) the history of this section of the wall from the time when the various walls were joined under Qin Shihuang up to the time when this section was rebuilt during the early Ming dynasty

- (b) an explanation of what was involved in building the wall
- (c) information about what the wall would have meant to Chinese people in Qin times and later.

SOURCE 2 The stone marking the modern entrance to the Mutianyu section of the Great Wall of China, about 70 kilometres north of Beijing



Responding to the big questions

At the beginning of this topic several big questions were posed. Use the knowledge and understanding you have gained through your study of the subtopics to answer them:

1. How did ancient China's natural environment influence its civilisation?
2. How was ancient Chinese society organised and governed?
3. What were the main characteristics of ancient Chinese culture and religion?
4. How do written and archaeological sources help us understand ancient China?
5. Why did ancient Chinese dynasties rise and fall?
6. What is the significance of the heritage of ancient China?

learn on RESOURCES – ONLINE ONLY

 **Try out this interactivity:** Ancient China timeline (int-2939)

 **Complete these digital docs:** Worksheet 20.8: Find-a-word, Worksheet 20.9: Summing up

GLOSSARY

absolute dating techniques: methods used to assess the age of something (e.g. radiocarbon dating, tree-ring dating)

Acropolis: stronghold on high ground in an ancient Greek city-state

acupuncture: a medical practice in which long, sharp needles are inserted under the skin as a means of diagnosing, relieving or curing illness

afterlife: life after death

agora: large open space in the centre of a Greek city that served as a public meeting area and marketplace

agriculture: the cultivation of land, growing of crops or raising of animals

alluvial soils: soil composed of sediments (clay, silt, sand) deposited on a floodplain by a river when it breaks its banks. This soil is rich in nutrients and is useful for agricultural production.

amphora: large clay vase used to store and carry liquids such as water, wine and olive oil

amulet: charm believed to protect against evil

anaesthetic: drug to deaden pain

ancestral beings: gods or deities who taught people how to live and the rules of society and who are regarded as the direct ancestors of Aboriginal peoples living today

ancient history: the period from the beginning of civilisation to the fall of the Roman Empire

anno Domini: Latin for 'in the year of our Lord'

anthropologist: someone who researches the appearance and features of the life of prehistoric people and the connections they had with other human populations

appropriate technology: technology designed specifically for the place and the people who will use it. It is affordable and can be repaired locally.

aquifer: a body of permeable rock below the Earth's surface which contains water, known as groundwater. Water can move along an aquifer.

arid: lacking moisture; especially having insufficient rainfall to support trees or plants

artefacts: an object made or changed by humans

artesian aquifer: an aquifer confined between impermeable layers of rock. The water in it is under pressure and will flow upward through a well or bore.

artificer: craftsman or inventor

artisans: skilled craftspeople

Asiatic: peoples of Asia, in this case western Asia, including the Middle East

astronomy: study of the stars and planets

atmosphere: the layer of gases surrounding the Earth

bail: the promise that an accused person makes to appear in court at a later date

base map: the map underneath an overlay

beyond reasonable doubt: the standard of proof required in a criminal trial where the prosecution must prove that the accused is guilty to such a high degree that a reasonable person would have little doubt that the accused committed the crime

biased: one-sided or prejudiced, seeing something from just one point of view

bicameral: a parliament with two houses

biodiversity: the variety of life in the world or in a particular habitat or ecosystem

biomass: organic (once living) matter used as fuel

BP (Before the Present): a term used by archaeologists instead of BCE (Before the Common Era) for when time periods are vast

blue water: the water in freshwater lakes, rivers, wetlands and aquifers

built environment: a place that has been constructed or created by people

bull-roarer: a sacred object used in Aboriginal religious ceremonies whirled around to produce a roaring noise

burden of proof: the legal principle describing who has to prove a case in court. In a criminal trial, this burden is on the prosecution.

bureaucrats: government officials

business: an organisation that provides goods and/or services to consumers in order to make a profit

business activities: the combined economic activities of buying, selling and investing performed by an organisation

canopic jars: jars used to store the liver, lungs, intestines and stomach of the person being mummified

cash flow: the amount of money moving in and out of the business at any given time

cassowary: a large flightless bird related to the emu with a bare head and neck

castrated: having the testicles cut off

casual: describes an employee who works only when needed

cay: a small island found on coral reefs

census: an official count or survey of a population, which often seeks and records other information about people. The Australian Bureau of Statistics conducts a national census every five years.

circumcision: the surgical removal of the foreskin from a male penis

civil wars: wars fought between citizens of one country

civilisations: term used to describe societies that have towns and features such as complex forms of government and religion

clan: a group of people of common descent or ancestry

climate change: a change in the world's climate. This can be very long term or short term, and is caused by human activity.

coalition: an alliance between two political parties with the aim of improving their chances of winning an election

committal hearing: in very serious cases, the procedure held in a lower court to determine if there is enough evidence for the case to move to a higher court

communism: a belief system that promotes the overthrow of existing society and replacing it with one in which all property and possessions are shared equally, and resources are controlled by the government

community: a group of people who live and work together, and generally share similar values; a group of people living in a particular region

concubines: women who lived with the emperor in a sexual relationship but were not married to him

conscripted: forced to become a soldier

constellations: groups of stars

constitution: a set of rules that determines the structure of government and its law-making powers

consumers: people or groups who are the final users of goods and services produced within an economy

contestability: when particular interpretations of the past are open to debate

controlling: the process of comparing what was expected to be achieved with what was actually achieved

counsel for the defence: a lawyer who represents the accused person

country: the place where an Indigenous Australian person comes from and where their ancestors lived; it includes the living environment and the landscapes

customer survey: the polling of customers to identify their level of satisfaction with the business's products and quality of service

Daoist: a follower of Daoism

deities: gods or goddesses

delta: low, triangular area where a river fans out as it nears the sea

democracy: a political system according to which citizens choose the way in which they are governed

demotic script: the simplest of the ancient Egyptian scripts, which was almost like handwriting

deported: forced to leave the country

desalination: a process that removes salt from sea water

dialects: different forms of a language

dictator: a person who has absolute power within a country, and who usually cannot be voted out of power by democratic elections. A government headed by a dictator is usually referred to as a dictatorship.

discharge: the volume of water that flows through a river in a given time

dissection: systematic cutting up of a body for medical study

distribution: the way things are spread across an area

Dorians: tribes from the north of Greece who moved into the south during the Dark Age

drainage basin: the entire area of land that contributes water to a river and its tributaries

Dreaming: in Aboriginal spirituality, the time when the Earth took on its present form and cycles of life and nature began; also known as the Dreamtime. Dreaming Stories pass on important knowledge, laws and beliefs.

dugong: a sea animal, sometimes called a sea cow, found mainly on the coasts bordering the Indian Ocean

ecological footprint: the total area of land that is used to produce the goods and services consumed by an individual or country

ecosystem: a community of organisms, plants or animals and the environment they exist in

employed: describes someone working in return for a wage or salary

employees: people who work for a wage or salary

employer: a person or organisation hiring others to work for them

enterprise: the creative or bold efforts made by someone to achieve something new

enterprising behaviours: describes a range of skills including adaptability, initiative, communication, management, leadership and problem solving, and associated behaviours such as working productively with others to achieve common goals, planning and organising, using resources effectively, analysing issues and managing risk

entrails: internal organs of an animal

entrepreneur: a person who takes on a risk by starting a business with an idea, hoping to make a profit through initiative and enterprise

entrepreneurship: the ability to demonstrate the skills and risk taking related to the creation, organisation and management of a business or enterprise

Ephorate: five-man ruling body in Sparta that advised the kings

ethical management: the decisions made by the business owner abiding by moral standards

evaporation: the process by which water is converted from a liquid to a gas and thereby moves from land and surface water into the atmosphere

extensive: extensive land use land use in which farms are huge, with few workers and not many cows or sheep per hectare

extraction: the removal of something; this may be, for example, from below the surface of the ground

fallow: land that is being farmed but left uncultivated and seeded for a season to allow soil recovery

federation: the formation of a united country from a number of separate states or colonies, with law-making power shared between the national government and the governments of each of the states

fly in, fly out (FIFO): describes workers who fly to work in remote places, work 4-, 8- or 12-day shifts and then fly home

forage: the search for provisions or food

formal: describes an event or venue that is organised or structured

fossil fuels: fuels that come from the breakdown of living materials, and which are formed in the ground over millions of years. Examples include coal, oil and natural gas.

full-time: describes an employee who works 35 hours or more per week, or who works the minimum number of hours stipulated by the industrial award for that occupation or industry

genealogical: an account of the descent or ancestry of a person or group

genetic: relating to origin or heredity

geologist: someone who studies the sediments and landforms associated with ancient campsites

global citizens: people who are aware of the wider world, try to understand the values of others, and try to make the world a better place

goods: physical items that satisfy needs and wants

Great Pyramid: the oldest and largest pyramid in Egypt; one of the Seven Wonders of the Ancient World

Great Sphinx: monument with the body of a lion and the face of a man; located in Giza near the Great Pyramid

green water: water that is stored in the soil or that stays on top of the soil or in vegetation

groundwater: a process in which water moves down from the Earth's surface into the groundwater

halberds: daggers mounted on axe handles

helots: slaves of the Spartan state

heritage: everything that has come down to us from the past

hieratic script: Egyptian script that was less decorative and complex than hieroglyphs

hoplites: Greek foot soldiers

horticulture: the growing of garden crops such as fruit, vegetables, herbs and nuts

hydrologic cycle: another term for the water cycle

hypothesis: (plural: hypotheses) a theory or possible explanation

Ice Ages: long periods during which glaciers covered much of the northern hemisphere

immortals: gods who lived forever

improved drinking water: drinking water that is safe for human consumption

income: money earned through employment or investment

industry-wide awards: legally binding documents that set out the minimum wages and other entitlements for all employees in an industry or occupation

infantry: foot soldiers

informal sector: jobs that are not officially recognised by the government as official occupations and that are not counted in government statistics. People who work in the informal sector usually generate their own employment by doing anything they can, and work long hours for very low rates of pay.

infrastructure: basic structural works needed for the operation of a modern community, such as roads, drains, bridges and the electrical supply; the facilities, services and installations needed for a society to function, such as transportation and communication systems, water and power lines

initiative: the first step or opening move in a series of actions

innovation: either adding a new product to an existing product line, or significantly improving an existing product or process

intensive: intensive land use in which farms are smaller but have more workers and machinery to produce high yields per hectare; examples are dairy and poultry farms, orchards, vegetables and feedlots

intensive agriculture: any method of farming that requires concentrated inputs of money and labour on relatively small areas of land; for example, battery hens and rice cultivation

intensive farming: farming that uses a lot of resources per hectare and changes the look of the region

Inundation: the seasonal flooding of the Nile

Iron Age: period in which people learned to use iron to make tools and weapons

irrigation: water provided to crops and orchards by hoses, channels, sprays or drip systems in order to supplement rainfall

judge: a court official who hears cases in the higher courts, such as the District or County Court, or the Supreme Court

judiciary: a collective name given to the judges who preside over law courts

jurors: a group of people (the jury) who are selected to hear and assess the evidence in a court case

jury: a group of ordinary people randomly selected to hear and assess the evidence in a court case

justice: the use of laws to treat people fairly and in a way that is morally right

labour: the performance of laborious mental or physical tasks and/or the provision of time and effort in exchange for money

labour force: people aged 15 and over who are able to work, and are either employed or looking for work

Latin: the language of ancient Rome

leading: the process of motivating or inspiring staff to achieve the goals of the business

legal aid: the provision of legal assistance to those involved in a dispute or criminal matter who are unable to pay for legal representation

legal representation: services performed by a qualified legal practitioner, such as a lawyer, who deals with legal matters on behalf of the person who has hired the practitioner

legal system: a system for interpreting and enforcing the laws of a country

legislation: a term used to describe laws passed by parliament

literacy rate: the proportion of the population aged over 15 who can read and write

liveable city: a city that people want to live in, which is safe, well planned and prosperous and has a healthy environment

livestock: animals raised for food or other products

location: a point on the surface of the Earth where something is to be found

lore: the customs and stories that came from the Dreaming and continued to govern all aspects of traditional life

magistrate: a court official who hears cases in a magistrates court

mallee: a low growing bushy Australian eucalypt plant

mandate of heaven: Chinese expression meaning that a ruler had been chosen by the gods

mangrove: area in a tropical or subtropical climate where vegetation grows in salty or brackish water

manufacture: to make products on a large scale

mausoleum: large tomb structure

megalithic: made of large stones

Melanesian: belonging to the island groups of the South Pacific, north-east of Australia

mental map: a drawing or map that contains our memory of the layout and distribution of features in a place

mercenaries: people who fight for a foreign country for money or other rewards

metics: free man living in Athens but not born there; could not vote or own property but served in the army and paid taxes

metope: part of the pattern of alternating motifs under the pediment (the triangular part crowning the front) of a Greek building

mound springs: mound formation with water at its centre, which is formed by minerals and sediments brought up by water from artesian basins

mummy: body that has been embalmed

mythology: a body of myths

natron: a mineral salt used to dry out dead bodies

natural environment: elements — such as wind, soil, flowing water, plants and animals — that influence the characteristics of an area

natural resources: natural resources (such as landforms, minerals and vegetation) that are provided by nature rather than people

needs: goods or services that are essential for life

neighbourhood: a region in which people live together in a community

niche market: a market in which a limited and clearly defined range of products is sold to a specific group

non-government organisations: non-profit groups run by people (often volunteers) who have a common interest and perform a variety of humanitarian tasks at a local, national or international level

ochre: a natural pigment found in soil ranging in colour from pale yellow to orange and red

oligarchies: governing council of rich aristocrats

Olympiad: a staging of the Olympic Games

omens: signs that predict good or evil

organisations: an entity formed for a specific purpose, usually related to the production or provision of a good or service

organising: the process of working out the resources necessary for completing the tasks that need to be performed so that the goals of the business are achieved

ostracism: the punishment of being banished from Athens

palaeontologist: a scientist who studies fossils

Pan-Hellenic: for all the Greeks

papyrus: paper made from crushing reeds

part-time: describes an employee who works less than 35 hours per week

Parthenon: Athenian temple dedicated to the goddess Athena

passing trade: the sales a business makes as a result of customers walking or driving past the store

Peloponnese peninsula: the southern part of mainland Greece, joined to the north by the narrow Isthmus of Corinth

penalty rates: an increase in the usual rate of pay due to particular circumstances, such as working on a public holiday or weekend

percentage mark-up: a way of determining selling price by adding a fixed percentage to the cost of the product

perioeci: peoples of Laconian towns around Sparta who could be required to fight for Sparta but were not citizens

permafrost: permanently frozen ground not far below the surface of the soil

perspectives: point of view or attitude

philosopher: one who studies the fundamental principles and causes of things

places: specific area of the Earth's surface that has been given meaning by people

planning: the process of identifying goals for the business and the steps that will need to be followed to achieve those goals

plateau: a high, flat-topped landform

poleis: ancient Greek city-states

population density: the number of people living in a square kilometre

portico: a roof supported by columns, usually attached as a porch to a building

precipitation: rain, sleet, hail, snow and other forms of water that falls from the sky when water particles in clouds become too heavy

prehistory: the period before writing was invented

premises: the land and buildings occupied by a business

presumption of innocence: the principle that all accused people who appear before a court are presumed to be innocent until the prosecution proves that they are guilty

producers: individuals or businesses involved in the production of goods and services

productivity: a measure of how efficiently inputs are used to produce outputs

profit: what remains after all business expenses have been deducted from the money that has been collected from selling goods or services

prosecutor: the party bringing a criminal action against the accused

pull factors: positive aspects of a place; reasons that attract people to come and live in a place

push factors: reasons that encourage people to leave a place and go somewhere else

quarries: an excavation or pit from which stone or building material is cut

radiocarbon dating: a way of dating objects of plant or animal origin according to the amount of carbon left within them

rainfall variability: the change from year to year in the amount of rainfall in a given location

referendum: a process of allowing the people to vote on an important issue

region: any area of varying size that has one or more characteristics in common

relative dating techniques: methods used to assess whether something is older than something else (e.g. stratigraphy, fluorine dating)

relative humidity: the amount of moisture in the air

remote: describes a place that is distant from major population centres

remuneration: payment for work or services performed

repeal: to remove a law so that it no longer applies

retail: describes a business that sells goods and services to consumers

rite of passage: a ceremony or event marking an important stage in someone's life

riverine environment: the environment around a river or river bank

royal assent: the formal approval by the monarch's representative, and the final step necessary before a law comes into force

rule of law: the legal principle that all citizens are subject to the law, and equal before the law, as it is upheld by independent courts

run-off: precipitation not absorbed by soil, and which runs over the land and into streams

sago: a starch food obtained from palm trees used to produce a flour

salary: fixed or regular payment for work completed or services performed

sarcophagus: stone or wooden coffin (often inscribed or decorated) in Egypt

sea change: the act of leaving a fast-paced urban life for a more relaxing lifestyle in a small coastal town

seagrass: a grass-like plant living in or close to the sea

seasonal: describes an employee who usually works during a season, such as winter or the fruit-picking season

sediment: the material that settles at the bottom of a liquid

services: actions done for you by others to satisfy your needs and wants

shadoof: irrigation device used to lift water from the river

shell middens: a mound of shells and other waste material marking the site of an ancient community

silt: fine sand or earth particles carried and deposited by running water

slashing and burning: a method of clearing land for farming where the vegetation is cut down and burned off before new seeds are sown

soaks: place where groundwater moves up to the surface

socially responsible management: the decisions made by the business owner reflecting the business's obligations to the wellbeing of society

sparse: thinly scattered or unevenly distributed; often used when referring to population density

stalemate: a situation in a contest or conflict in which neither side can defeat the other

standard of living: quality of life as measured by the amount of money made by an individual or household (using income per capita or income per household)

strata: (singular: stratum) distinct layers of material beneath the ground, built up over time, that provide information for archaeologists and geologists

subsistence farming: a form of agriculture that provides food for the needs of only the farmer's family, leaving little or none to sell

taboo: something strictly forbidden

target market: a market at which a product is deliberately aimed

taro: a plant with broad edible leaves and root vegetable, grown in the tropical regions, especially the Pacific Islands

temperate climate: climate with generally warm summers and cool winters, without extremes

trade union: an organisation of employees formed for mutual support, and to seek improvements in pay and working conditions for its members

tree change: the act of leaving a fast-paced urban life for a more relaxing lifestyle in a small country town, in the bush, or on the land as a farmer

trial: the court process to determine whether someone committed a criminal act

turbine: a machine for producing power, in which a wheel or rotor is made to revolve by a fast-moving flow of water, steam or air

unicameral: a parliament with only one house

uranium: radioactive metal used as a fuel in nuclear reactors

urban decay: situation in which a city area has fallen into a state of disrepair through its people leaving the area or not having enough resources to look after them

Valley of the Kings: gorge on the Nile in Upper Egypt that contains many royal tombs

vassal state: a state whose ruler recognises another, more powerful ruler as his overlord

virtual water: all the water used to produce goods and services. Food production uses more water than any other production.

vision: a statement expressing where a business is going or what it will be like in the future

wage: regular payment for work completed or services performed

wants: non-essential goods and services

warlords: generals from powerful landowning families

water footprint: the total volume of fresh water that is used to produce the goods and services consumed by an individual or country

water scarcity: a situation that occurs when the demand for water is greater than the supply available

water stress: a situation that occurs in a country with less than 1000 cubic metres of renewable fresh water per person

wellbeing: an overall measure of quality of life

Westminster system: the parliamentary system of Great Britain, which has been copied and adapted by many other countries including Australia. It is so-called because the British Parliament meets in a building called the Palace of Westminster

wilderness: a natural place that has been almost untouched or unchanged by the actions of people

word-of-mouth: the passing of information about a business from a satisfied customer to prospective customers

work: human labour — whether paid or unpaid, including voluntary labour

work–life balance: a balance between working time and leisure/recreation

working conditions: refers to all those things an employer has agreed to provide in exchange for the employee’s work, ranging from the physical work environment to hours of work, rates of pay and leave entitlements

Xiongnu: the ancient Chinese name for the nomadic Turkic tribes of Central Asia

zoning regulations: the decisions made by local council outlining the purpose for which a building or land can be used. Zones are usually based on land uses such as residential, commercial or industrial.

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