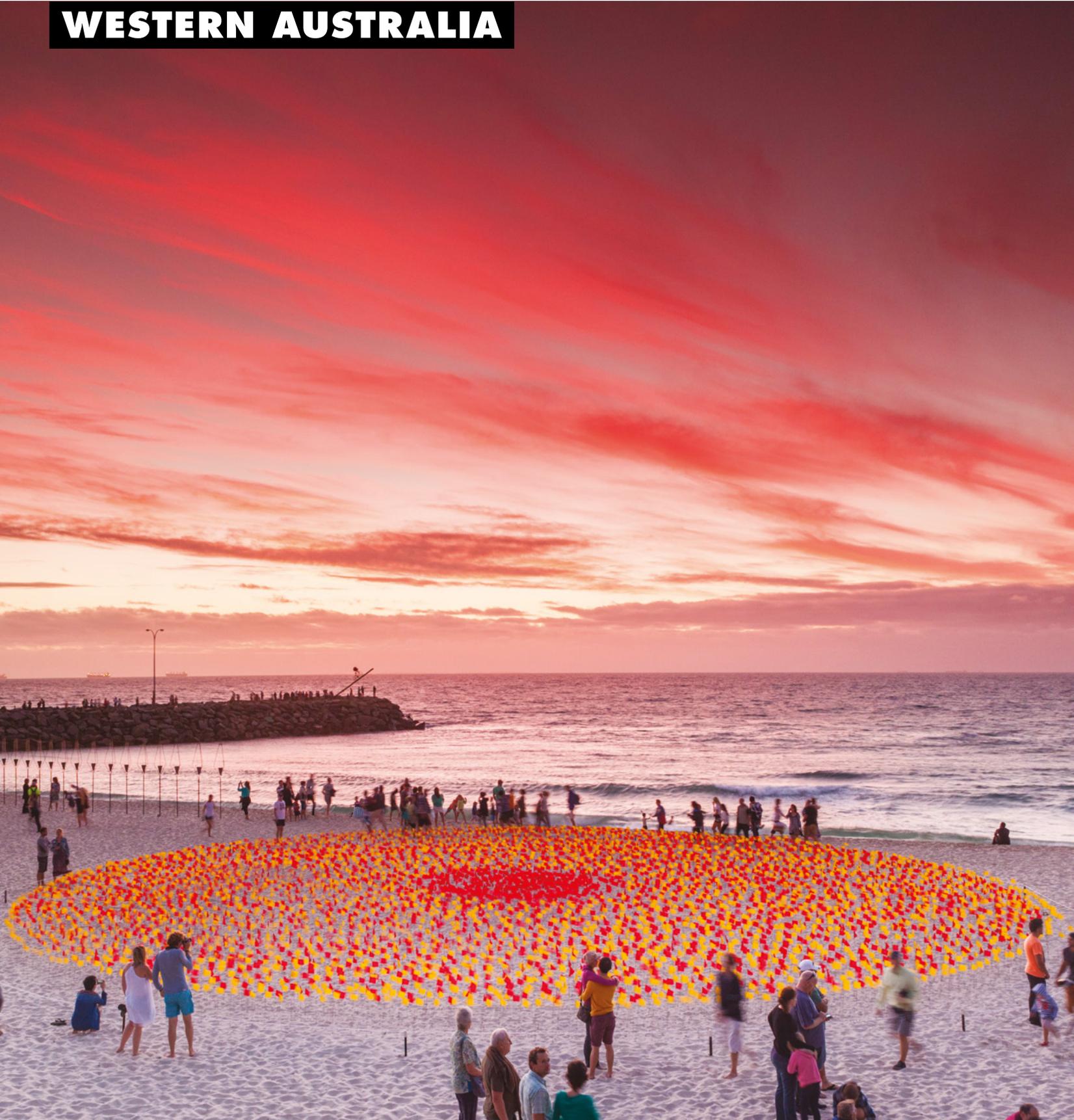# HUMANITIES & SOCIAL SCIENCES 7

WESTERN AUSTRALIA

PEARSON
HUMANITIES & SOCIAL SCIENCES 7
WESTERN AUSTRALIA

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PEARSON
HUMANITIES 7
& SOCIAL SCIENCES
WESTERN AUSTRALIA

Pearson Humanities and Social Sciences Western Australia 7–10 is a new series developed for the new Western Australia School Curriculum and Standards Authority Humanities and Social Sciences syllabus.

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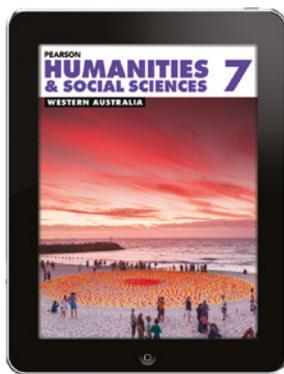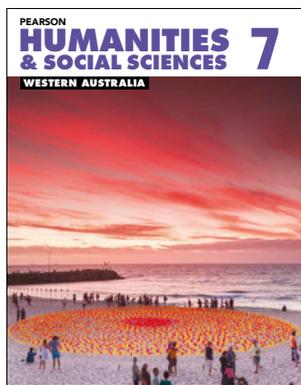
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Contents

HISTORY

ADDITIONAL EBOOK CHAPTERS

How to use this book

The Student Book is divided into the four subject strands.

CIVICS AND CITIZENSHIP

ECONOMICS AND BUSINESS
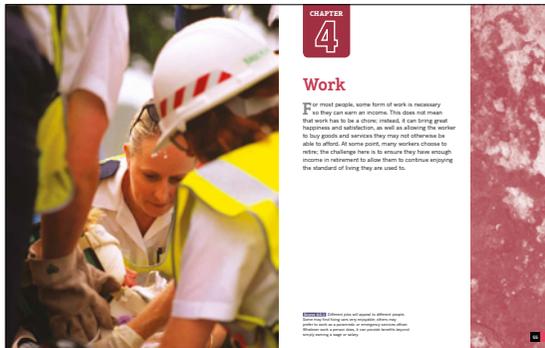
GEOGRAPHY

HISTORY
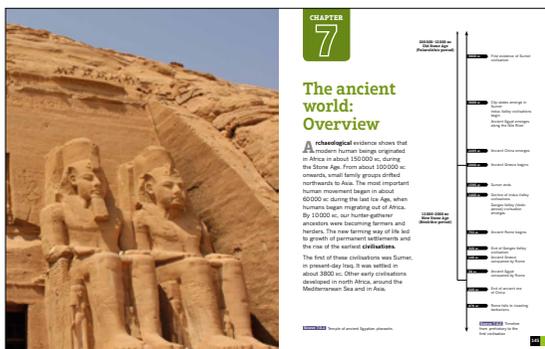
Each chapter is divided into unit spreads of between two and six pages. The features in each chapter are outlined below.

Chapter opener

Each chapter opens with an engaging image and an introduction related to the chapter content, providing a basis for inquiry into the topic. History chapter openers also feature a timeline showing the key

Unit content

Content in each unit covers one or more of the 'Knowledge and Understanding' content descriptions in the Humanities and Social Sciences syllabus. The core text is supported by primary and secondary written and visual sources. Engaging facts in 'Did you know?' features will stimulate further interest and provide additional information.

Activities

Each unit closes with questions based on the core text and sources. The questions are categorised under Bloom's Revised Taxonomy, moving from lower order to higher order questions. The activities help build content knowledge and skills capabilities.

Inquiry tasks and glossary

Each chapter closes with a set of inquiry tasks based on the chapter content, to consolidate learning. The scaffolded tasks provide students with the opportunity to develop critical thinking and apply the Humanities and Social Science Skills as outlined in the syllabus. The varied tasks are designed to appeal to different learning preferences, some of which may incorporate further research, as well as pair and group work. The glossary defines terms used within the chapter to assist with text comprehension.

Online resources

Additional eBook chapters

The eBook contains additional chapters for greater choice in covering content for the Western Australia School Curriculum and Standards Authority Humanities and Social Sciences syllabus. These additional chapters include all the same features as the core chapters.

Acknowledgements

Designing our political and legal system

On 1 January 1901 the Commonwealth of Australia, as we know it today, officially came into existence. It was created when the six former British colonies federated, to become six states—New South Wales, Queensland, South Australia, Tasmania, Western Australia and Victoria. Ten years later, in 1911, the two territories—the Australian Capital Territory and the Northern Territory—came into being as part of the Australian Commonwealth.

Altogether, the new nation became known as Australia. With the making of the new nation came the need for new rules. An important document, known as the Australian Constitution, was written to explain how this new nation would operate and what the main features of its government would be. The foundation of the Australian Government is based on the British Westminster system and is shaped by the Australian Constitution.

Source 1.0.1 Federal Parliament House in Canberra

The Australian Constitution

Making the rules

In its most simple form, a constitution is a set of rules. Constitutions exist for many different groups, including businesses, school groups and sporting clubs. Constitutional documents outline how the particular group will be run and the procedures that need to be followed.

Australia's Constitution

When **Federation** took place in 1901 there was a need for a set of rules stating how Australia would be governed. This set of rules came into effect on 1 January 1901 and is known as the **Australian Constitution**.

Australia's Constitution is a large and complex document containing eight chapters and 128 sections. Some of the key features of the chapters are described in Source 1.1.1.

Chapter	Features
1	Describes how the federal parliament is made up of two Houses—the Upper House, or Senate, and the Lower House, or House of Representatives (a bicameral government)—and the Queen as the Head of State.
2	Describes the power of key people such as the Queen and the governor general.
3	Relates to the federal courts, including the High Court of Australia, which can settle disputes about the Constitution.
4	Deals with money and trade.
5 and 6	Explains the division of powers and the relationship between the Commonwealth, or federal, government and the states and territories.
7	Outlines where the capital of Australia should be and how the governor general has the right to appoint deputies.
8	Explains how the Constitution can be changed by referendum.

Source 1.1.1 Some key features of the Australian Constitution

The Constitution describes how federal parliament is made up and how it works, how the power of the government is divided between various governmental institutions and the roles that each one plays in governing Australia. The Constitution also lists the areas in which the federal government has the power to make laws. Anything that the Constitution does not specifically say the federal government must do, the states can choose to do. It is possible for both federal and state governments to pass laws dealing with a particular issue, but in those cases the Constitution says the federal law is the one that needs to be followed.

While the document does not explicitly state all of the rights of Australian citizens, as constitutions from some other countries do, it does define some, such as the right to choose a religion.

In addition to the Australian Constitution, each Australian state has its own constitution. The two territories (ACT and Northern Territory) have similar documents called self-government acts. This means they are able to govern themselves, but do not have their own constitution.

Source 1.1.2 Western Australia agreed to federate on 31 July 1900, paving the way for the Commonwealth of Australia to come into existence and the Australian Constitution to be written.

Differing state and federal roles

The Australian Constitution lists those areas of government that come under federal and state responsibilities.

Federal government	State government
foreign policy	schools
currency	hospitals
immigration	roads and railways
defence	police
weights and measures	mining and agriculture
social security	prisons
trade and commerce	public transport
postal and communication services	utilities such as electricity and water
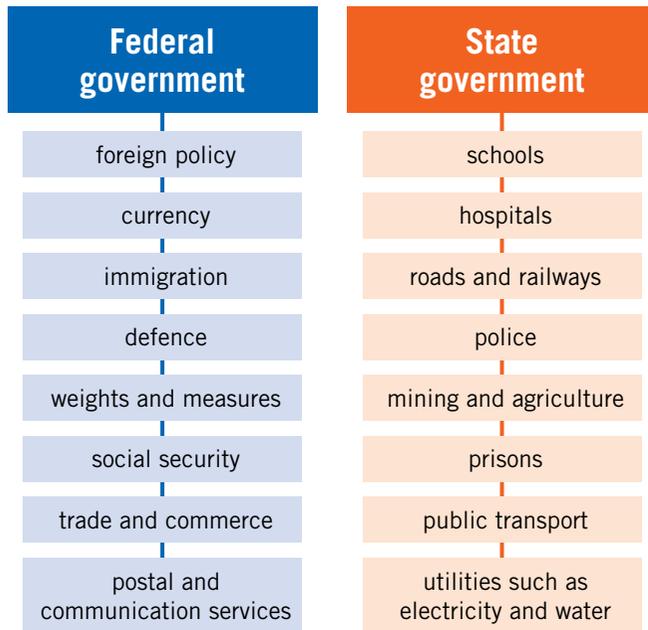
Source 1.1.3 Differing jobs of the federal and state governments

Changing the Australian Constitution

The Australian Constitution can only be changed if the majority of Australian people agree. For any changes to be made they must be proposed, usually by politicians or lobby groups, and then put to a **referendum** or vote. Then all eligible voters in Australia must vote in the referendum. A majority of voters in a majority of states have to vote 'yes' for a change to be made to the Constitution. Since 1901 there have been 44 referendums. These have varied in purpose, from changing the timing of Senate elections to giving the Commonwealth the ability to make laws about the aviation industry. Only eight changes have been agreed to in that time.

One important change was made in 1967, when Australians voted to include Aboriginal people in the census or count of the Australian population and give the federal government the power to make laws for Australians of Aboriginal and Torres Strait Islander descent. This referendum saw the

highest 'yes' vote ever recorded, with more than 90 per cent of voters agreeing to make the change to the Constitution.

Source 1.1.4 Bill Onus, Victorian Aborigines' Advancement League President, in a 1967 march for Aboriginal rights.

ACTIVITIES

Remembering and understanding

1. What is a constitution?
2. When did Australia's Constitution come into effect?
3. List at least four things the Constitution describes.
4. How many referendums have there been since 1901?

Applying and analysing

5. Identify the stages in the process required to change the Constitution.

Evaluating and creating

6. Determine why the referendum in 1967 saw the highest 'yes' vote ever recorded in a federal referendum.

The separation of powers

The three branches of government

There are three main branches of the Australian Government—the **parliament** or **legislature**, the **executive** and the **judiciary**. These groups, and the roles they play in governing our nation, are outlined in the Australian Constitution. The power to make and manage federal law is divided between the three groups and is known as the separation of powers. The parliament makes and amends the law, the executive puts the law into action and the judiciary makes judgements about the law. These roles have been separated to avoid one group having all the power.

This separation of powers is one key to the success of Australia's government. It means that each of the three branches of government acts separately, and as a check on the others. That means they keep the other branches from gaining too much power or acting **oppressively**. For example, the executive branch may want a law, but the legislature has to pass it. The judiciary has the power to say if the law is against the Constitution and therefore should not be in place.

Australia does not have a complete separation of powers because some of the roles overlap. The prime minister, for example, is part of both the parliament and the executive.

The Parliament

Parliament is also known as the legislature, and is made up of:

- Queen Elizabeth II, who is Queen of the United Kingdom, Australia, New Zealand and also Head of the Commonwealth. She is represented in Australia by the **governor general**
- the **Senate** and the **House of Representatives**, which collectively are known as the Houses of Parliament.

The Parliament of Australia passes legislation to make laws. Any proposed laws need to be agreed to by both Houses of Parliament before they become law. The two Houses have equal powers, although the Senate has a number of restrictions relating to introducing and amending some kinds of laws. The governor general also has a role in making laws, by basically giving his or her approval or assenting to acts.

```
              The Australian Constitution

   Judiciary              Parliament              Executive
 Makes judgements          Makes and             Puts law into
   about the law          amends laws               action

• High Court          • Queen               • Queen
• other federal         (represented          (represented
  courts                by governor           by governor
                        general)              general)
                      • House of            • prime minister
                        Representatives     • ministers
                      • Senate
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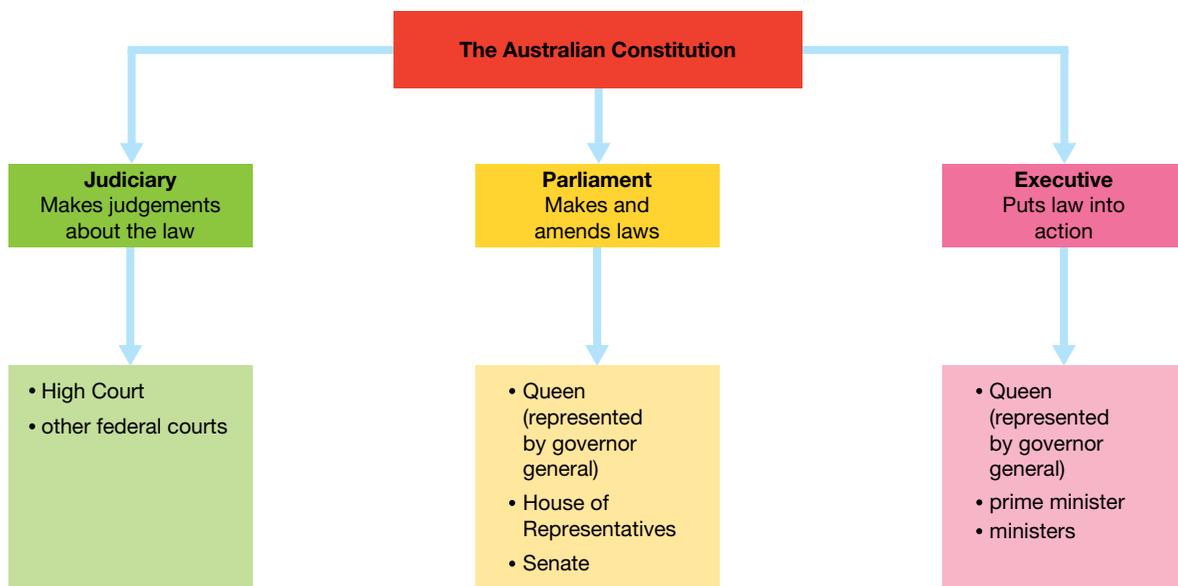
Source 1.2.1 The Australian Constitution sets out the powers of the three branches of government to make and manage federal laws.

Some of the other roles of the Parliament of Australia are:

- providing the members of the executive government from the political party that wins the election
- providing the place where the government is formed
- providing representation for the Australian people through 150 members in the House of Representatives and 76 senators
- providing a check on the work done by the government through debates and questioning issues during question time
- authorising, or approving, the executive government to spend public money.

Source 1.2.2 The leader of the governing party becomes the prime minister. Julia Gillard was the 27th prime minister of Australia and the first woman to hold this position. The prime minister is part of both the parliament and the executive.

The executive

The executive is made up of the Queen, represented by the governor general, and the cabinet and ministry, led by the **prime minister**. The job of the executive is to carry out the day-to-day government and administration of the country and to carry out the laws made by the parliament. The governor general, as the Queen's representative, is part of the executive because Australia is a **constitutional monarchy**.

A constitutional monarchy is a form of government where the powers of the ruling monarch—a king or queen—are limited by law and usually carried out only on the advice of the elected government. Australia's Head of State is Queen Elizabeth II. Queen Elizabeth is also Queen of the United Kingdom and several other countries, but her role in Australia is quite separate from her role in the UK. The head of state is a formal, symbolic and ceremonial job, and in Australia the Queen's tasks have been delegated to her representative, the governor general.

The roles of the governor general and the Queen

The governor general is effectively the Queen's representative in Australia and performs the ceremonial functions on behalf of the Queen. The tasks of the governor general are written in the Constitution and can include:

- appointing and dismissing executive councillors and ministers
- appointing judges
- being the commander-in-chief of the defence forces
- deciding when parliament meets, suspending and dissolving parliament
- issuing writs for general elections
- recommending government spending to parliament
- signing off on proposed new laws
- blocking or proposing amendments to any laws passed by the Houses of Parliament
- receiving and entertaining official visitors to Australia.

These powers are reserve powers not clearly defined in the Constitution, and the governor general usually acts on the advice of the prime minister.

The prime minister

The prime minister is the head of government and leader of the executive. He or she is the person who leads the party voted into office by the Australian people. The prime minister has a great deal of power to select the government and determine what its priorities will be. The prime minister is also the chief adviser to the governor general.

Australia's current prime minister, Malcolm Turnbull, is the fourth prime minister to hold office since 2013, and has recently won a second term of office. There have been 29 prime ministers in Australia and 45 elections up to 2016. Sometimes the prime minister may change without an election. Reasons for this could be that the prime minister died while in office or there has been a party leadership change.

Did you know?

On Sunday 17 December 1967 the 17th Australian prime minister, Harold Holt, disappeared while swimming at a beach on Point Nepean in Victoria. Despite a massive search, his body has never been found and there have been many conspiracy theories about the day that Australia lost a prime minister.

Cabinet

The **cabinet** is the group of senior ministers who make government policy for running the country. This group is made up of senior politicians, selected and presided over by the prime minister. There are currently 30 ministers, selected by the prime minister, with around 19 senior ministers managing the major departments, which include Agriculture and Water Resources, Foreign Affairs and Trade, Treasury, and Industry, Innovation and Science.

Source 1.2.3 Prime Minister Gough Whitlam was dismissed by Australia's governor general on 11 November 1975.

The Constitution also gives the governor general the power to act independently in some areas. For example, the governor general is able to dissolve the House of Representatives or both Houses (called a double dissolution) in exceptional circumstances.

For example, in 1975, the then governor general, Sir John Kerr, made history by using his reserve powers to sack Gough Whitlam's Labor government. The Liberal Opposition had blocked money going to the government. Kerr appointed the Opposition leader, Malcolm Fraser, as temporary prime minister on the understanding that Fraser would approve the supply of money and call an election.

Source 1.2.4 The High Court of Australia, in Canberra

The judiciary

The power to interpret laws and to make judgements on them rests with the judiciary. This is done through courts such as the High Court, which is the highest court in Australia, and other federal courts. The High Court was established by the Constitution, while the other courts were created by legislation of the parliament.

The High Court consists of a chief justice and six other judges. Judges are appointed by the governor general after advice from the prime minister and cabinet, and can only be removed from their position by the governor general. Once they are on the bench, judges keep the position until they retire or reach the age of 70 years, when they are forced to step down by law.

One of the major roles of the High Court is to interpret the Constitution.

ACTIVITIES

Remembering and understanding

1 What are the three main branches of the Australian government?
2 List the three bodies that make up the Australian Parliament.
3 What is the job of the executive?
4 Who selects the ministers to form the cabinet?

Applying and analysing

5 Construct a diagram showing the roles of and the relationship between Australia's three branches of government.
6 Identify other roles of the High Court.

Evaluating and creating

7 Investigate why Governor General John Kerr dismissed the Whitlam Labor Government in 1975.
8 Determine why Australia has had four prime ministers since 2013 and decide what this reveals about Australia's parliament.

The three levels of government

Local, state and federal levels of government

Australia is a big country, so the job of running it is considerable! Not every decision can be made by Federal Parliament, and so the roles of governing the country are split up. This is known as the three levels of government. Each level of government has its own responsibilities, although sometimes these overlap. These levels of government work together to provide the services we all need.

The three levels are:

• Federal Parliament, which is based in Parliament House in Canberra

• state and territory parliaments in each capital city. Western Australia's Parliament House is located in Perth

• local councils, and shires and municipalities across the nation. The area where you live, for example, will fall under a local government authority of some sort.

Australia has one federal parliament, six state and two territory parliaments, and more than 560 local councils. Australians aged 18 years and older who are eligible to vote, elect representatives to all three levels of government to make decisions on their behalf.

Australia's three levels of government— examples	What is each level responsible for?	Making the law: legislative	Carrying out the law: executive	Interpreting or figuring out the law: judicial
Federal Parliament House in Canberra	• Defence • Taxation • Immigration • Postal services • Trade • Environment	**Federal Parliament:** • Senate (Upper House) • House of Representatives (Lower House)	• Governor general • Prime minister, Cabinet and ministers • Federal public service	• High Court • Federal Court • Family Court
State Parliament Court House in Perth, WA	• Schools • Hospitals • Roads and railways • Police and ambulance services • Housing	**State Parliament:** • Legislative Council (Upper House) • Legislative Assembly (Lower House)	• Governor • Premier • Cabinet and ministers • State public service	**State courts:** • Supreme Court • District Court • Magistrates Court
Local City of South Perth	• Town planning • Rubbish collection • Local roads • Pet control • Parks and ovals • Local libraries and swimming pools	• Elected council members • Municipal council • Shire council	• Mayor or shire president • Council members	

Source 1.3.1 There are three levels of government in Australia working together for all.

Federal government

The federal government is responsible for those things that affect the whole nation, such as trade, defence, immigration and the environment. It is also responsible for countrywide services, such as money, postal services and telecommunications.

To run the country and pay for the services it provides, the federal government collects taxes, which are compulsory payments made by companies and individuals.

Did you know?

Before Federation all of the separate colonies had their own governments. Each colony had its own written constitution, parliament and laws, but the British Parliament could overrule any laws passed by any of the colonies. The Australian Constitution, written when the colonies joined together in federation, allowed the states to keep their own parliaments.

State government

Each state government is responsible for the issues that affect that particular state and/or territory. These are usually laws that are not covered by the federal government. For example, schools and police are state responsibilities.

In each state, except for Queensland, there are two Houses of Parliament—the Lower House, or Legislative Assembly, and the Upper House, also called the Legislative Council. The head of government in the states and territories is known as the premier or chief minister.

State governments receive funding to run their affairs from state taxes, stamp duty and grants and payroll taxes from the federal government. The federal government allocates money each year to the states and territories.

Source 1.3.2 The federal government funds a number of projects to protect environmental and cultural heritage. Gwalia, in Western Australia, received almost $1 million in federal funding to preserve the historic mining town.

Source 1.3.3 Elizabeth Quay is an example of a state government initiative.

State government initiatives

State governments will often use their funding to develop new projects to revitalise areas that have fallen into disuse or disrepair. These projects create new job opportunities for people and often create vibrant, new, public spaces. The Elizabeth Quay project in Perth is one such example.

ELIZABETH QUAY PROJECT

After decades of discussion and debate about connecting the Swan River to the city, Premier Colin Barnett and Planning Minister John Day have today officially opened Elizabeth Quay.

The Premier said Elizabeth Quay was a free space for all West Australians and visitors to our city to enjoy.

'When the Liberal National Government was elected in 2008, I pledged that we would be a government which made decisions and one of those was Elizabeth Quay,' Mr Barnett said.

'This project fundamentally changes the face of Perth; it connects us to the Swan River and provides a huge boost to the vitality of our city. We have come a long way over the past decade and West Australians have a lot to be proud of. I am delighted that the public can now see what years of planning, creative development and hard work by many people has achieved.'

Mr Day said Elizabeth Quay was a once in a generation project that changed the physical and cultural landscape of our city.

'As well as the free spaces available, including the BHP Billiton Water Park and nature-based inspired playground, a calendar of events and activities have been planned to create a precinct that is an active and exciting place to be, whatever the time of day.'

Source 1.3.4 Elizabeth Quay opened in Perth in 2016.

Local government

Local government is responsible for services in your local neighbourhood. The library you visit after school, the meals on wheels delivered to your elderly neighbour, the government recreational facilities you might go to on the weekend, are all examples of local government.
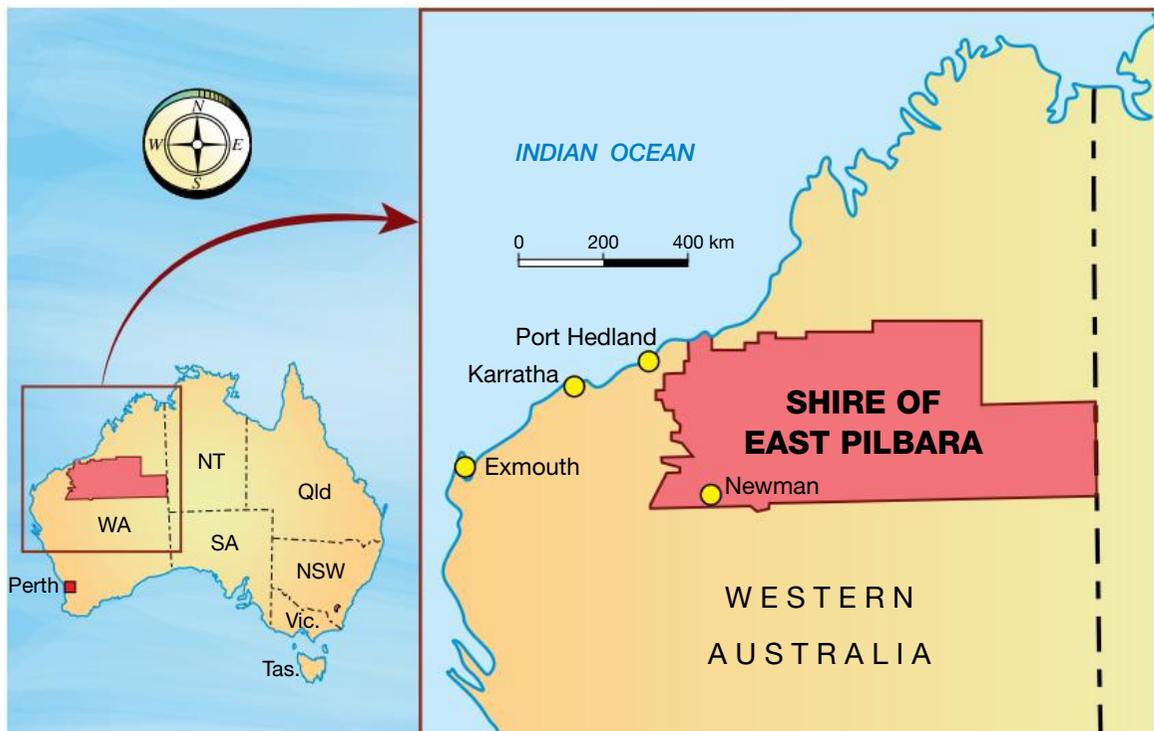
In Western Australia, local government areas or municipalities are usually known as cities or towns in urban areas and shires in country areas. Within each of these areas is a council or group of people who run the municipality. For councils to operate they need money, which they collect in the form of residential rates, licences and fines. Rates are an amount of money paid by all people who own property in the municipality. Councils are also given grants from the federal and state governments.

Councillors are elected local government representatives who usually volunteer their time for their municipality. These people are elected by local residents through local government elections. Councillors make the main decisions that affect their local area and they are supported by a range of paid staff who take care of the day-to-day running of the local area. Examples of these people include building and heath inspectors, rangers, healthcare workers and librarians.

ACTIVITIES

Remembering and understanding

1 What are the three levels of government in Australia?
2 What are the names of the two Houses of Parliament in each state?
3 List where state governments receive funding from to run their affairs.
4 Provide three examples of services for which local governments are responsible.
5 Identify the title of the leader of each level of government.

Applying and analysing

6 Read Source 1.3.4. Write a report highlighting why the Elizabeth Quay project was important for the city of Perth.

Evaluating and creating

7 Argue in favour of or against the statement that Australia has too many levels of government.
8 Predict what might happen if your local government stopped providing some of its services, such as collecting waste and items for recycling.

Australia: Houses of Parliament

The bicameral parliament

The Australian Federal Parliament is called a **bicameral** parliament because it has two Houses. These are known as the House of Representatives, or Lower House, and the Senate, or Upper House. Each House has very different jobs.

House of Representatives

The House of Representatives is also known as the Lower House, or the People's House. This House represents the Australian people as a whole because it would be impossible for every Australian to vote on every decision that needs to be made.

Australia is divided into 150 areas called electorates. There are 150 members elected to the House of Representatives. Each member represents one electorate. Each of these areas holds roughly the same number of people. This means that in terms of land area some of the electorates are very small, while others, such as the electorate of Kalgoorlie, are very large.

The House of Representatives is traditionally the more powerful House of the two. Its most important role is forming the government after an election. The prime minister must come from this House. After a general election in which the Australian people have voted, the political party or group of parties that have won a majority of seats in the House of Representatives form the government. The leader of this party becomes the prime minister. The next largest party forms what is known as the Opposition.

Did you know?

The colour of the House of Representatives is green for two reasons—one is to show our link with the traditional green decor of the House of Commons in the British Parliament; the other is to represent the Australian eucalypt landscape. The furnishings and carpet in the Senate are red to show our traditional link with the House of Lords in the British Parliament, as well as representing the red earth that is typical of much of the Australian landscape, such as in the centre of Australia.

Source 1.4.1 The House of Representatives is also known as the People's House or the Lower House.

The mace is a symbol of the authority of the House of Representatives.

The Senate

The Senate is also known as the Upper House, the States' House and the Red Chamber. This House is made up of elected men and women who represent the people of Australia's six states and territories. These people are known as senators. Currently there are 76 senators—12 from each state and two from each territory.

The Senate was established because of concerns raised by the states during Federation. When the idea of federation was first being proposed there was a great deal of debate. Many of the colonies with smaller populations, such as Western Australia, were worried that the new federal government's House of Representatives would not listen to their concerns. With the Federal Parliament due to be located in Canberra, delegates to the federation meetings were concerned that larger colonies of New South Wales and Victoria, would dominate discussions. This debate resulted in the second House, or Senate, being established. As a result, all states elect the same number of senators to represent them in the Senate or 'States' House', regardless of the size of the state's population. The Northern Territory and the ACT each elect two senators.

The role of a senator is to represent the view of Australians, to make and change federal laws by discussing proposals for new laws and voting on them, and examining the work of the government. The Senate's role as a States' House has become less important over the years as political parties have grown. Now senators generally vote on matters according to the party they belong to rather than the state they represent. The Senate also acts as a 'House of review' for any proposed laws, giving a second opinion and making changes after the law has passed through the House of Representatives.

Source 1.4.3 The Usher of the Black Rod plays an important parliamentary role in the Senate.

A day in parliament

The days when parliament meets or sits are set out in a schedule at the beginning of each year when times for each day are set. Parliament sits for about 18 to 20 weeks each year. Sitting days usually follow a set schedule. The schedule includes:

- government business and statements from members
- question time, at 2 pm

- presentation of documents, such as reports from government agencies
- discussion on current issues of public importance, usually started by a non-government party
- the adjournment debate (a series of short speeches at the end of the day).

Passing the bill through Parliament

In the House of Representatives

1 FIRST READING The minister introduces the bill and the explanatory memorandum to Parliament. This makes the bill public. Only a small amount of the bill is read out.

2 SECOND READING The member who introduced the bill explains its purpose and reasoning. Members of the House ask questions about it, such as how much it will cost or how it will be administered.

3 DETAIL CONSIDERATION Changes, called amendments, are suggested, and a vote is taken to either accept or reject each.

4 THIRD READING A vote is taken on the bill as it stands. If it passes, it goes to the Senate.

In the Senate

1 FIRST READING The bill is introduced.

2 SECOND READING Speeches are made, giving senators the chance to give their opinions. The bill is voted on.

3 COMMITTEE OF THE WHOLE Senators go over the detail of each part of the bill. Amendments are proposed and voted on.

4 THIRD READING A vote is taken on the revised version of the bill. If it passes, then the bill and its revisions go back to the House of Representatives. If there were no amendments or changes, then the House does not need to see the bill again.

Back in the House of Representatives

1 AMENDMENTS The House discusses the amendments passed by the Senate.

2 VOTE The House votes on the bill.

Source 1.4.4 A bill can only become law once it is passed by both the House of Representatives and the Senate.

How the two Houses work together

Both the Senate and the House of Representatives are almost equal partners, but usually the government does not have a majority of members in the Senate. Both Houses must agree before new bills become law, so there is often much debate. The Constitution has special provisions for how to deal with disagreements between the Houses.

A bill can only become law once it is passed by both the House of Representatives and Senate, and all language and amendments are the same in both Houses. It can be referred to the other body for reconsideration, if needed.

If the bill is passed, the governor general (acting on behalf of the head of state) signs the bill and it becomes law. This process is called 'royal assent'.
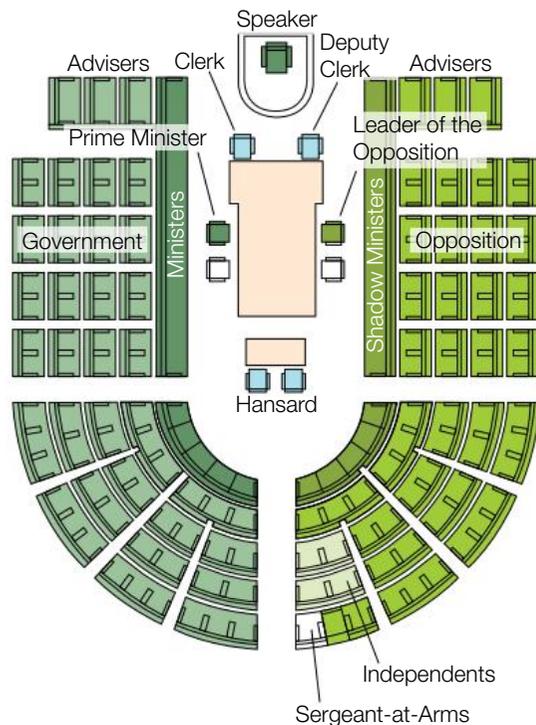
Source 1.4.5 House of Representatives seating plan
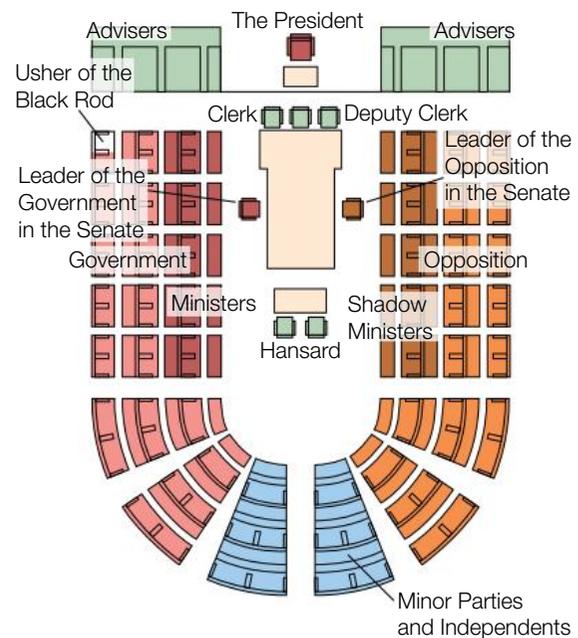
Source 1.4.6 Senate seating plan

ACTIVITIES

Remembering and understanding

1. Why is the Australian Federal Parliament called a bicameral parliament?
2. What is the most important role of the House of Representatives?
3. List the different roles of a senator.
4. Which document has special provisions for how to deal with disagreements between the House of Representatives and the Senate?

Applying and analysing

5. Identify the link between the number of electorates in Australia and the number of members in the House of Representatives.
6. Construct a brief timeline for a day in parliament, providing times for when you think events may occur.

Evaluating and creating

7. Investigate why the traditional colours of the Houses of the British Parliament are green and red.
8. Do you think it is fair to say that the Senate's role as the States' House has become less important over the years? Give reasons for your view.

Changing the Constitution

Referring to the people

The Australian Constitution can be changed to meet the changing needs or values of the community, but it is a complicated process and does not happen very often. To change the Constitution, the federal govenement must call a referendum.

The word *referendum* is Latin and means 'something referred', usually to the people. A referendum is a vote by eligible voters on a question. In Australia, referendums may be held at state and federal levels. The Australian Constitution can only be changed by referendum according to the rules set out in section 128 of the Constitution. If a majority of people in a majority of states, and a majority of people across the nation as a whole, vote 'yes', then that part of the Constitution can be changed. This is known as a double majority.

A double majority

A majority is more than half the total number. Exactly half, or 50 per cent, is not enough; at least one more is needed. To change Australia's Constitution a double majority is needed. This means that two things need to happen:

- the total 'yes' vote across Australia needs to be more than 50 per cent
- there has to be a majority of 'yes' votes in more than half of the states. This means at least four states have to vote 'yes'.

Source 1.5.1 How a double majority works

A referendum is passed when:

and

A national majority (more than half) of voters from all states and territories vote '**Yes**'.

A majority (more than half) of voters in at least four of the six states vote '**Yes**'.
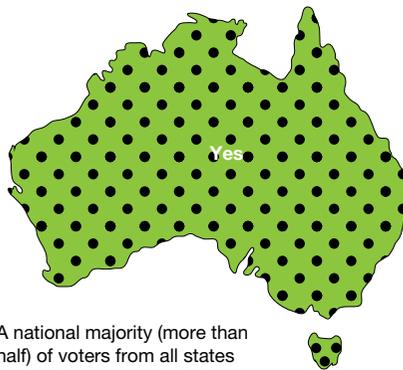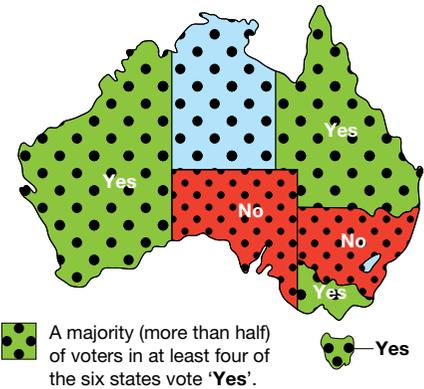
The votes of people living in the ACT, the NT and any of Australia's external territories count towards the national majority only.

A referendum is not passed when:

and/or

A national majority (more than half) of voters from all states and territories vote '**No**'.

A majority (more than half) of voters in at least three states vote '**No**'.

Source 1.5.2 The Constitution can only be changed by a majority vote by the people.

Referendums in Australia

The first referendum was held in 1906 and Australia has since held another 43 referendums. Of these questions about changing the Australian Constitution put to the Australian people, only eight changes have ever been agreed to.

Successful and unsuccessful referendums in Australia

Some of the successful referendums have included:

- the 1946 referendum. This allowed the Commonwealth to provide social service benefits to returned service men and women.
- the 1967 referendum. This gave the Commonwealth the power to make special laws for Indigenous Australians.

Some of the unsuccessful referendums have included:

- the 1951 referendum. This was about making laws to do with communism and communists.
- the 1999 referendum. This asked the Australian people if they wanted Australia to become a republic.

A referendum can also be held on issues other than changing the Constitution. This is known as a plebiscite. Plebiscites are often used to test public opinions on government ideas or actions. They do not have any legal force, unlike referendums.

Did you know?

In 1916 and 1917 there were two national plebiscites held about whether to introduce conscription during the First World War. Both were defeated. In 1977 Australians voted to choose the national anthem. The choices were *God Save the Queen*, *Waltzing Matilda*, *Song of Australia* and *Advance Australia Fair*. Similar plebiscites are also held in the Australian states and territories. Western Australians have voted in referendums asking about daylight saving and extended shopping hours.

Source 1.5.3 This artwork in Canberra commemorates the 1967 referendum and illustrates extracts from the referendum documents, the Australian Constitution and events which led to the referendum.

Source 1.5.4 Handing out 'How to vote "No"' cards in the 1999 referendum

The 1999 referendum on becoming a republic

In 1999 the people of Australia were asked a referendum question about what type of government our nation should have. The question was whether Australia should cut its remaining links with Britain and become a republic. The question voters were asked was:

- ....

  Do you approve of an Act to alter the Constitution to establish the Commonwealth of Australia as a republic with the Queen and Governor General being replaced by a President appointed by a two-thirds majority of the Commonwealth Parliament?

- ....

During this referendum, voters were also asked about whether they wanted to add a **preamble**, or introduction, to the Constitution. The vote on becoming a republic and the vote on the preamble were separate issues and did not affect each other.

History of the republican debate

Although Australia became a nation in 1901 when the colonies were federated, it still kept many links with Great Britain. The king or queen, referred to as the **monarch** of Britain, remained the head of the Australian Government. The governor general is the representative of the monarchy in Australia. Under the Constitution, the Queen of England theoretically holds a lot of power in Australia. As the Head of State she can remove the governor general and has the power to stop laws from being introduced by the Australian government. Despite this, in reality, the monarch has very little power in Australia. Due to the Queen's title of Head of State, as written in the Australian Constitution, our system of government is known as a **constitutional monarchy**.

A republic, on the other hand, is a democratic country that does not have a Queen or King as Head of State. Instead it has a ruler known as a president. An example of this type of government can be seen in the United States of America.

Up until World War Two, Australia had many ties with Britain. Many immigrants came from there; as a nation we traded with Britain and many Australians identified with British culture. In contrast, today much of our trade is with Asia, immigrants come to Australia from all over the world, and Australia is regarded as a multicultural nation.

Towards the end of the 20th century the Keating government began suggesting that Australia should become a republic. Prime Minister Keating and the Labor government wanted an Australian Head of State by the centenary of federation on 1 January 2001. Australians were divided on the issue, which was put to a referendum, with monarchists—people who supported the monarchy—and republicans, those wanting to change the system of government—both putting forward arguments for their views.

For a republic	Against a republic
• Australia's Head of State should be a citizen of Australia • Australia has developed closer ties with other regions, such as Asia • Australia's population is more multicultural, not just from the UK • Britain's monarchy is not consistent with Australian views and is irrelevant • A president is usually chosen by the people, but a monarch is born into the position which is not democratic • The Australian people want a republic not a constitutional monarchy	• The system has worked well so it should not be changed • It would be expensive to change • Politicians may get more power through changing the Constitution • Australia has historically always been linked to Britain. We should maintain this link • Until the form of republic can be agreed upon Australia should stay with the present system • Most Australian people want to retain our links with Britain

Source 1.5.5 Arguments for and against Australia becoming a republic

Australia votes against a republic

The referendum failed to gain the Australian public's support. Australians voted against the idea of becoming a republic with only the ACT returning a 'yes' vote. If it had succeeded, the Queen would no longer be Australia's head of state. Instead, Australia would have a president selected by a two-thirds majority of the members of parliament.

State/Territory	Result	Yes %	No %
NSW	NO	46.43	53.57
Vic	NO	48.84	50.16
Qld	NO	37.44	62.56
WA	NO	41.48	58.52
SA	NO	43.57	56.43
Tas	NO	40.37	59.63
ACT	YES	63.27	36.73
NT	NO	48.77	51.23

Source: Australian Electoral Commission

Source 1.5.6 Results of the 1999 referendum on the establishment of a republic in Australia

ACTIVITIES

Remembering and understanding

1 What language does the word 'referendum' come from?
2 Identify the two steps that need to happen for a double majority to occur.
3 List one successful referendum in Australia.
4 What was the result of the 1999 referendum on Australia becoming a republic?

Applying and analysing

5 Distinguish between a constitutional monarchy and a republic.
6 Construct a Venn diagram to show similarities and differences between a referendum and a plebiscite.

Evaluating and creating

7 Investigate the arguments for and against an Australian republic. State which arguments you agree with and why.
8 Research the status of the republican debate in Australia today and argue whether you think a referendum on the issue would be successful today.

Inquiry tasks

The separation of powers

The founders of Federation in Australia separated the roles of the parliament, executive and judiciary to avoid one group having all the power.

Write a discussion paper on why it is important to have this separation of powers. What might happen if there was no separation of powers? You can use examples from the governments of other countries to support your argument.

In your discussion paper, include:

a an introduction that describes Australia's political system with three separate arms of government

b a body made up of several paragraphs, each focused on one key reason

c a conclusion summarising the key points and evaluating the separation of powers

d a bibliography.

Teaching the Australian Constitution

The Australian Constitution is an important document that outlines the responsibilities of the federal government. It is a very long document and can be difficult to understand.

In groups of four, prepare a five-minute lesson for students your own age about the Constitution and what it means for the functioning of the Australian Government.

Extra information about Australia's Constitution can be found on the Parliament of Australia's education website.

The three levels of government

a Create a KWL chart about Australia's three levels of government. Use both the information in this chapter and extra research to fill out the chart.

K stands for what you already KNOW about the subject.

W stands for what you WANT to learn.

L stands for what you LEARN as you read.

Level of government	What I know	What I want to learn	What I have learnt
Local government			
State government			
Federal government			

b Determine one possible change to either one level of government or all levels as a whole that will improve their function and coordination within the three levels of government. Create a poster or advertisement promoting your change.

Referendums

The Australian Constitution can only be changed by referendum. There have been 44 referendums held since 1901 and only eight of these have been successful.

The most successful was the 'yes' vote giving the Commonwealth powers to make special laws for Indigenous Australians in 1967; the least successful was for Australia to become a republic in 1999. Research shows that education campaigns to inform voters about the referendum issue and process are the key to success.

Prepare a visual display of your choice (such as a blog, website, slideshow, poster or short film) to highlight the case either for or against one of the following questions:

a Australia becoming a republic

b Western Australia seceding from Australia and becoming a separate country.

STAND UP FOR W.A.

POLLING DAY: APRIL 8   VOTING IS COMPULSORY

VOTE FOR SECESSION

THUS

(PINK). BALLOT PAPER FORM C

QUESTION 1

Are you in favour of the State of Western Australia withdrawing from the Federal Commonwealth established under the Commonwealth of Australia Constitution Act (Imperial)?

☒ **YES**

☐ **NO**

AND

VOTE AGAINST CONVENTION

THUS

(YELLOW). BALLOT PAPER FORM D

QUESTION 2

Are you in favour of a Convention of representatives of equal number from each of the Australian States being summoned for the purpose of proposing such alterations in the Constitution of the Commonwealth as may appear to such Convention to be necessary?

☐ **YES**

☒ **NO**

(Authorised by H. K. Watson, Chairman Dominion League of W.A., Perth)
Printed by Dix Ltd., 454 Murray-st., Perth

Source 1.6.1 Western Australia was the last colony to join the federation. In 1933, a referendum was held to vote on Western Australia leaving the federation so that they could be a separate country. Although there was a 3:1 vote in favour of secession (withdrawal from the federation), it was ruled invalid because it did not have the support of the Australian federal government.

GLOSSARY

Australian Constitution the written document containing the principles and laws that describe the powers and duties of the Australian Government

bicameral having two Houses of Parliament—the House of Representatives and the Senate

cabinet a group of senior ministers who, with the prime minister, make government policy

constitutional monarchy a government headed by a monarch with powers limited by a constitution

executive responsible for implementing and enforcing laws

Federation when Australia's independent colonies came together to form a single nation called the Commonwealth of Australia in 1901

governor general Australia's head of state appointed by the Queen on advice of the prime minister, with powers set out in the Constitution

House of Representatives the elected Lower House of the Parliament of Australia

judiciary responsible for interpreting laws and deciding how they are applied

legislature responsible for making laws

monarch a king or a queen who generally holds power by birth right and not merit

parliament the place where the government is centred; it contains the House of Representatives and the Senate

prime minister the head of the Australian Government and leader of the executive

referendum a vote of the Australian electors on a proposed change to the Australian Constitution

Senate the Upper House of the Parliament of Australia where senators sit; also known as the States' House

2

Justice and the Australian legal system

In society, laws are the rules that people live by. Laws place limits on our behaviour, taking away certain aspects of individual freedom or choice in favour of making things better for society. The legal system in Australia is about fairness. Laws are supposed to apply equally to everyone in society.

Source 2.0.1 The ancient Greek goddess Themis is often depicted to represent justice. She was considered the personification of law and order by the ancient Greeks.

Australia's legal system

Laws are made by governments, which, in a democracy, are made up of elected representatives of the people. **Laws** are enforced by people who represent the government, such as police and **regulators**. If someone does something that breaks a law, then the legal system, with its courts, lawyers, judges and juries, comes into play. The legal system rules on what happened, whether or not a law was broken, and, if so, how that law's penalties should apply. Also, in some cases, the legal system looks at the laws themselves and decides whether or not the government made a mistake when it created the law.

The judiciary

Australia's legal system, also called the **judiciary**, is one of the three branches of government. It has the power to interpret the laws and decide how they apply in individual cases. This interpretation is necessary because when a law is written it is impossible to know every situation it might apply to. When an issue or disagreement arises under a certain law it is up to the judicial (or legal) system to work out how that law governs the situation. This is what happens when a case goes to court.

The role of courts

When people think of courts they often think of dramatic murder cases, with lawyers dressed in wigs and gowns. But that is only a small part of the story. Legal disputes can happen in the most ordinary places.

Neighbours might argue over the need to replace a fence between their houses. Drivers might disagree about who caused a road accident. A worker might claim that they lost their job unfairly. Disagreements are a part of community life. Instead of leaving people to battle their problems alone, courts can help them to resolve these conflicts.

The adversary system

There are different ways of running court cases. Most countries with a British background, including

Source 2.1.1 The District Court of Western Australia hears cases that are fairly serious, except for the most serious cases, such as murder.

Australia and the United States use the **adversary system**. Adversary is another name for a rival, or opponent, and it reflects the two sides—known as parties—fighting it out.

Each side has control over its own argument in the case. The parties present information to the court, usually through their lawyers, to prove the truth. This is known as evidence. The lawyers call people who know something about the case to come into court and tell the court what they know. These people are called witnesses. The lawyers then question the witnesses.

The judge plays the part of an independent observer. He or she does not run the proceedings. Instead, the judge's role is to apply the law and to make sure the rules are followed.

Types of disputes

Courts hear many types of disputes that cover all sections of society. Legal disputes can be divided into two basic groups—public and private.

Public law affects society as a whole, in the sense that everyone has an interest in the outcome—whether it deals with the actions of government or it deals with crime in the community. Criminal law is one area of public law that imposes punishment for illegal actions. Criminal law cases include theft, assault and murder.

Private law is different from public law because it deals with disputes between individuals. The main type of private law is known as civil law. Civil law cases include work disputes, divorces and shoppers' rights.

Did you know?

Many European countries use the inquisitorial system as their legal system. The judge calls witnesses and questions them directly. Lawyers help the judge, rather than run the case.

The different types of private law

Private law

- Private law, Civil law: Deals with disputes between individuals.
- Ecclesiastical, or church, law: Laws that originally came from churches, for example, laws on marriage.
- Mercantile, or trading, law: Laws about business dealing, for example trade contracts.

The different types of public law

Public law

- Administrative law: Deals with the actions of the government.
- Constitutional law: Deals with the law-making powers of parliaments.
- Criminal law: Deals with situations where some's actions are so serious they have an impact on the entire society.

Source 2.1.2 The different types of public and private law

ACTIVITIES

Remembering and understanding

1 Who enforces the law?
2 What power does the judiciary have?
3 List three disputes that might arise in a community.
4 What is the name describing how court cases are run in Australia?

Applying and analysing

5 Show the similarities and differences between public law and private law in a Venn diagram.

Evaluating and creating

6 Investigate features of the adversary system and compare how they compare with features of the inquisitorial system.

Principles of justice

Australia's legal system consists of certain basic principles, or ideas, that try to protect members of society and make sure justice is done. This is known as the **rule of law**, and is an important concept that influences our daily life in Australia.

The rule of law

The rule of law is based on the idea of the supremacy of law—that all people, including the government, should be ruled by the law and be answerable to it. This means that government decisions must be made according to established laws and everyone must obey the law, even governments and law-makers. This ensures that everyone is treated equally and fairly and that justice is maintained.

There are a number of important principles that ensure justice is maintained. These are:

- *the separation of powers.* This means that each of the three branches of government acts separately and acts as a check on the other. This keeps the other branches from gaining too much power or acting oppressively.

- *fairness.* Laws apply equally to everyone—no one is above the law, and laws apply whether or not someone is an Australian.

- *procedural fairness.* Procedures or processes of applying the law should be fair and predictable, and people should be treated consistently.

- *judicial precedent.* Legal decisions made previously are taken into account in later cases. Cases with similar facts should have similar verdicts. Judges must identify how cases that seem similar are actually different if they want to treat them differently.

- *judicial independence.* Judges can make unbiased decisions about the case without the government telling them how to decide the outcome.

The rule of law   **Without the rule of law**

The rule of law pyramid (top to bottom):
- Equality before the law
- Checks and balances on the use of power by individuals and government
- Right to silence | Presumption of innocence | Fair trial & independence of the judiciary
- Right to assemble | Democracy through formal legal processes | Access to justice | Freedom of speech/media

Without the rule of law (inverted pyramid, top to bottom):
- Public gatherings banned | Corrupt elections or unfair processes which exclude voters | Inaccessible courts, no access to just outcomes | Censorship + punishment for criticising government
- Forced confessions | Presumed guilty or punished without trial | Unfair trials and biased judges
- Tyranny or laws which allow uncontrolled power
- Anarchy or no law

Source 2.2.1 The effect of the rule of law on society

Source 2.2.2 'The Lady Justice' statue in Melbourne's County Court. The figure represents some of the principles of justice—she is blindfolded, meaning she is even-handed and cannot be influenced. She holds a scale to weigh the evidence, while her sword symbolises authority.

Open justice

There is a belief that justice should not only be done, but that it should also be seen to be done. This means that justice should not be carried out in secret behind closed doors. Anyone should be able to enter a courtroom and view the proceedings. For example, if members of the public watch a criminal trial they can see that the person accused of the crime is being treated fairly.

There are some situations, however, when public viewing is not allowed. Children's court cases are generally not open to the public. This helps to protect the privacy of the children involved. Many children's court cases relate to children who have committed crimes. Those children who are found guilty of crimes need to be protected because their future might be affected in a negative way if they get a bad reputation from a young age. Cases closed to the public are said to be held in camera. This is a legal expression meaning 'in the room'.

Right to a fair trial

All people who come before the courts have basic legal rights. This principle is known as **natural justice**. It means that everyone should be given a fair hearing and the chance to present the other side of the story. Each person is entitled to hear the case against them; they have the right to question the other side, and to raise arguments against any opponent.

Natural justice also means that the judges must be even-handed and fair. They cannot favour one party, or side, over another. When making their decisions, judges cannot take into account irrelevant matters that have nothing to do with the matter being considered. For example, the fact that a person is of a particular religion may not have anything to do with a particular case, and should not be taken into account.

Sometimes there are disputes over whether certain pieces of evidence should be allowed into court. In these situations the jury leaves the courtroom while the lawyers make their arguments. Then the judge decides whether or not the jury can hear the evidence.

Innocent until proven guilty

There is an important presumption, or belief, in criminal law that a person accused of committing a crime is **innocent until proven guilty**. In other words, the accused does not have to prove his or her innocence. Instead, the person making the accusation—the prosecutor who acts on behalf of the Crown or state—has to establish guilt. If the prosecutor cannot establish guilt, the accused is entitled to be set free.

The rules of evidence

Evidence refers to information that helps to prove the truth. It can come in many forms. It can come from witnesses or people who stand up in court and say that they know about the case. It can be a document that the court examines. Or it can be a physical object, such as a weapon, that is brought into court.

Rules of evidence make sure that court cases are fair. Some of the more common rules include:

- *relevance*—only evidence that has something to do with the case being heard can be brought to court; for example, a fingerprint on the murder weapon would be relevant to a murder case
- *hearsay*—witnesses can only repeat information that they saw or heard personally. Rumours and overheard stories cannot be told to the court
- *legality*—if information was obtained illegally (for example, by recording a conversation without permission), it might not be allowed into court.

Witnesses have to limit themselves to relating facts. Their opinions are not evidence. A witness can say they saw the accused crying, but they cannot say that crying proved that the accused felt guilty; that is only the opinion of the witness.

Because criminal cases carry more serious consequences than civil cases, a higher standard

Source 2.2.3 Before answering questions witnesses have to swear to tell the truth, the whole truth and nothing but the truth. If they lie, they are committing a crime called perjury. Witnesses can choose to swear on the Bible or to make an affirmation, a formal and serious promise to tell the truth.

of proof is needed. When deciding if the accused is guilty or not guilty, the jury or magistrate must be convinced 'beyond reasonable doubt' that the accused has committed the crime they are charged with. This means that there is absolutely no reasonable doubt in the minds of the jury or magistate.

Access to legal advice

Justice should be available to everyone, not just those who can afford expensive lawyers' fees. Sources of legal help exist for people who are unable to pay lawyers' fees to ensure that they get quality legal representation and advice without spending more than they can afford.

Plaintiff does not produce enough evidence to support their allegation	Defendant provides greater evidence against the allegation than the plaintiff provides to support it	Plaintiff provides greater evidence than the defendant — enough to support their allegation on the balance of probabilities
Defendant wins	Defendant wins	Plaintiff wins

Source 2.2.4 In civil cases, the burden of proof rests on the plaintiff, who must prove on the balance of probabilities what they are alleging.

There are a number of such legal help groups; each state and territory has a Legal Aid Commission which provides legal services for free. These bodies are funded by government and private interests, and together they help more than 750 000 Australians each year with services ranging from phone advice to representation in court.

Burden of proof

The **burden of proof** is one of the basic principles of most adversarial legal systems, and it refers to two important ideas: who has the onus, or responsibility, of proving what is alleged (claimed) and to what standard. In Australia, the onus and standard of proof are different for civil and criminal cases.

In civil cases the onus of proof rests on the side making the complaint, called the plaintiff. The plaintiff has to prove to the judge, magistrate ot jury that the claim he or she is making is true, on the balance of probabilities. This is known as the civil law standard of proof.

Because criminal cases carry more serious consequences than civil cases, a higher standard of proof is needed. When considering guilt, the magistrate or jury must be convinced beyond reasonable doubt. This means the accused would 'almost certainly' have to be guilty, as opposed to 'just probably' guilty.

In criminal cases, the burden of proof rests on the prosecution to prove 'beyond reasonable doubt' that the accused is guilty of the crime they are charged with.

Judges, juries and lawyers

In court proceedings there are two main things to determine: what happened (the facts of the case) and what law applies. The parties can disagree on one or both of these matters. During a trial, evidence is presented to help the court work out just what happened. Based on that evidence, a judgement is made on what law should apply, and how.

Judges

Judges and magistrates have control over the courtroom. They keep order, make rulings and make sure that justice is done.

A **judge** is a lawyer who has been appointed by the government to hear court cases. Once appointed, a judge is expected to be independent of the government and political matters. It is very hard to remove a judge from his or her position. Both Houses of Parliament must agree to the dismissal.

A **magistrate** is similar to a judge in many ways. The biggest difference is that a magistrate sits in lower courts (Magistrates or local courts), while a judge sits in higher courts (District and Supreme courts). Judges often hear cases along with a jury, but there are no juries in Magistrates or local courts.

Did you know?

When a judge is hearing a court case, he or she is said to be 'on the bench'. This expression dates back many centuries to a time when English judges travelled the countryside and would sit behind a wooden bench under an oak tree.

Source 2.3.1 Judges wear a style of traditional costume that dates back hundreds of years.

Source 2.3.2 The jury must elect a foreperson, who can ask the judge questions on behalf of the jury and deliver the jury's verdict.

Juries

One of the central ideas of Australia's legal system is trial by **jury**. This is enshrined in the Australian constitution, which states in Section 80: 'The trial on indictment of any offence against any law of the Commonwealth shall be by jury'.

Juries are used in both criminal and civil trials. Usually 12 people sit on a criminal jury. The number of people on a civil jury varies between states; for example, there are usually six jurors in Western Australia and Victoria, but only four in New South Wales.

Not all trials involve juries. Some offences are too minor to warrant one; and sometimes people choose not to have a jury trial. In these cases, a judge hears the case and makes the decisions alone.

The role of the jury

The role of the jury is to determine the facts of a case, and to decide different things depending on the nature of the trial.

Jurors are not expected to be legal experts. The jury members simply listen to each side of the story and decide who is telling the truth. The judge decides whether the law was broken, and will direct the jury on matters of law.

For criminal trials there are usually 12 jurors who must reach a unanimous verdict of 'guilty' or 'not guilty'. If they cannot all agree then in certain circumstances an 11-to-1 decision is allowed. In civil trials the jury is usually composed of six people. Their role is to decide how much should be paid in compensation for breaking the law.

Serving on a jury

Juries are made up of ordinary people who represent the fairness and commonsense of society. Juries are one of the most important elements in the legal system. Nobody can be convicted of a serious crime unless found guilty by their peers, or people who are equal in ability and value.

The jurors leave the courtroom to deliberate or discuss the case with each other, in secret. The jurors do not need to tell anyone—not even the judge—the reasons for their verdict or decision. When the jury has reached its verdict the jurors return to the courtroom. In criminal cases, they declare publicly that the accused is either guilty or not guilty.

If the jury returns a guilty verdict it is up to the judge to decide on the punishment.

Verdicts

A unanimous **verdict** is one where all the jurors are in agreement. Unanimous verdicts are generally needed for the most serious crimes, such as murder.

However, it is not always easy to get so many people to agree. In most states there are some situations where the court allows the jury to return a majority verdict. A majority verdict means that, although there is some disagreement, the decision of the majority of the jury will stand.

Majority verdicts have long been allowed for civil cases. They are also allowed in non-murder criminal matters in most states. New South Wales has recently become the first state to allow majority verdict in murder cases.

Legal representation

Australia's legal system is complex with thousands of laws and, like any complex subject, it takes an expert to understand it well. That is why people go to lawyers.

The word **'lawyer'** can refer to either a barrister or solicitor. The first point of legal contact for most people is with a solicitor. Solicitors deal directly with people, handling legal matters that may or may not need to go to court. For example, they might help with things that have a legal implication, like buying a house or writing a will. But they also help when someone has been charged with breaking a law.

If a matter needs specialist advice or is going to court, the solicitor will engage a barrister. Barristers are lawyers who have been admitted to plead cases in court, whether it is a superior court, such as the High Court, state Supreme Courts or the lower courts.

In court proceedings, the role of the solicitor and barrister is to take a side in the argument on behalf of their client, who is either the plaintiff (the person making the complaint against someone else) or the defendant (the person accused of the crime or wrongdoing). Solicitors and barristers advise their clients about their options; for example, going to trial, settling out of court, or not pursuing the matter at all. They also research the laws that may affect the case, work out what evidence is available, and determine how that evidence and the applicable laws can be presented to try to achieve the best outcome for the client.

For	Against
A criminal jury must be convinced beyond reasonable doubt. Any disagreement suggests there is some doubt.	Majority decisions help to prevent jurors being forced into decisions they are not happy with.
Justice, or fairness, is more important than doing what is easiest.	If a unanimous verdict cannot be reached, the jury might become hung, or stuck, and a retrial is needed.
Minority jurors may have very good reasons for disagreeing and those reasons should not be ignored.	There may be one juror who is deliberately making things difficult for the others.

Source 2.3.3 Not all people agree with the need for unanimous verdicts. This table shows the arguments for and against.

Did you know?

The highest-level barristers are traditionally known as Queen's Counsel, and have the letters QC after their name. In some states the title has changed to Senior Counsel (SC).

Source 2.3.4 Barristers are easily recognised inside the courtroom by their robes and horsehair wigs. These features of dress are remnants of the English legal system, from which Australia's legal system came.

ACTIVITIES

Remembering and understanding

1 What is the biggest difference between judges and magistrates?
2 How many people sit on a criminal jury?
3 Explain the difference between a unanimous verdict and a majority verdict.
4 When would a solicitor engage a barrister?

Applying and analysing

5 Study Source 2.3.1. Write a report about the style of traditional costume judges wear.

6 Use a Venn diagram to show the similarities and differences between solicitors and barristers.

Evaluating and creating

7 Create a brochure explaining to potential jurors what the role of the jury is and what is expected of jurors.
8 Examine Source 2.3.3. Write an exposition arguing for or against unanimous verdicts.

Inquiry tasks

Civil law brochure

Civil law deals with disputes between individuals, such as breach of contract, negligence, defamation and discrimination. Research one area of civil law and create a brochure outlining:

- your rights and responsibilities under the law
- how disputes are resolved
- services that can assist in resolving the dispute
- the court in which the dispute can be resolved.

Create the brochure digitally, considering the use and placement of images and text and ensuring the information is clear.

Criminal law

There are five main categories of criminal law:

- laws to protect people
- laws to protect property
- laws to uphold public order
- laws to protect the nation
- traffic laws.

Find a newspaper article about a person convicted of breaking a criminal law. Identify:

- the law that was broken
- the evidence used to convict the person who broke the law
- the sentence passed for breaking the law.

Source 2.4.1 The basic layout of a courtroom
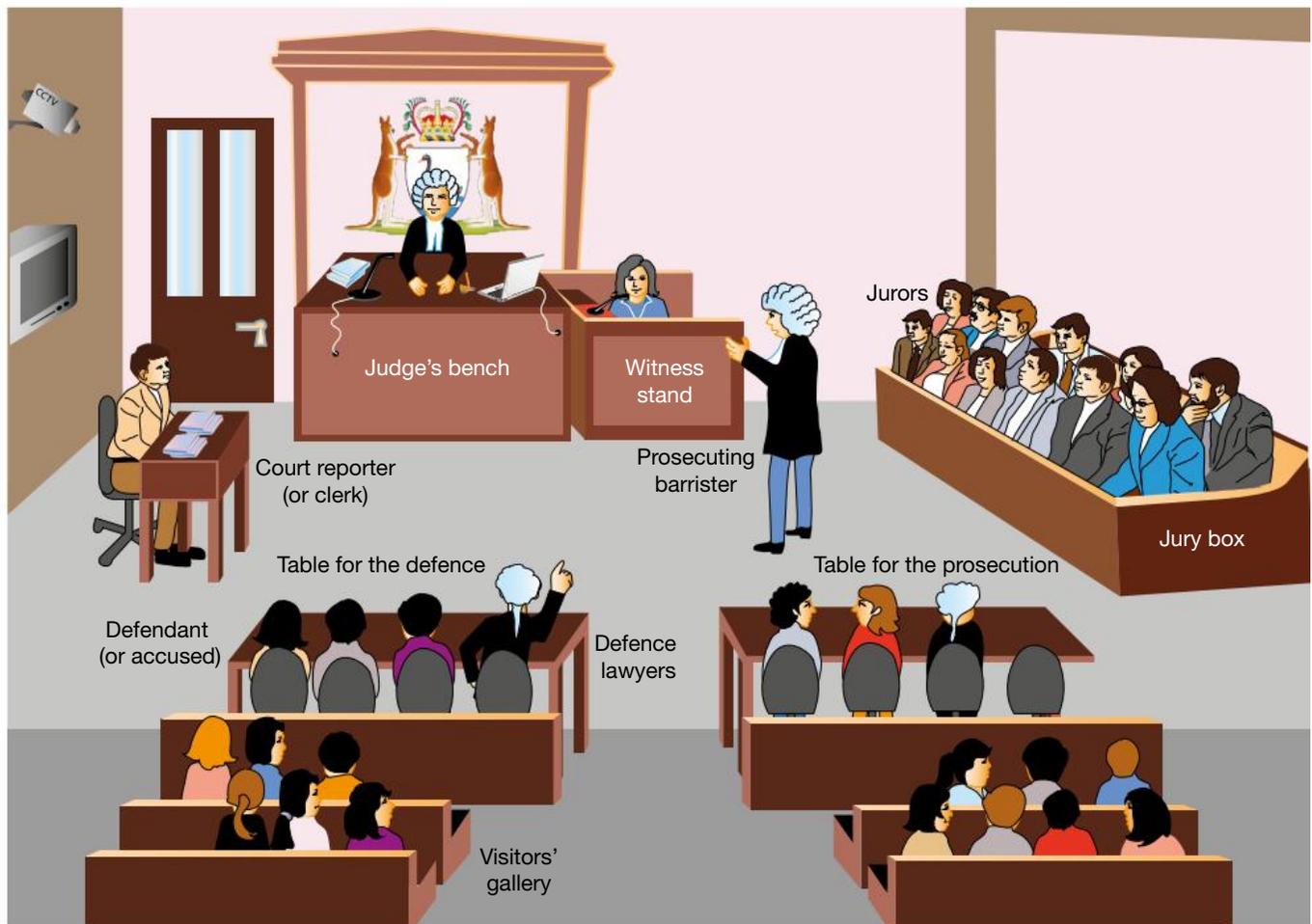
Prepare a report on the crime, including the above information and an evaluation on whether the punishment was suitable for the crime. Ensure you justify your evaluation; for example, compare sentences given to other people who have committed similar crimes.

Principles of justice

Despite the Egyptian law acknowledging the importance of 'freedom of the press', in 2014 Australian journalist Peter Greste, together with his colleagues Mohamed Fahmy and Baher Mohamed, were sentenced to between seven and ten years' jail in Egypt for broadcasting 'false' news. According to Egyptian authorities, the journalists' news reporting was designed to undermine national security, despite no evidence to support this claim being presented in court.

Research this incident and present a discussion paper on how the procedures failed to meet the principles of justice for the three men, as outlined in this chapter.

Mock court

Brainstorm, either in groups or as a class, a scenario in which a person has been accused of committing a crime. You will need to establish who is involved and what happened, and have available witnesses (including police) and evidence. Have the prosecution and defence prepare cases, and then act out the court case. This will include opening and closing statements by barristers, witnesses testifying, the jury giving its verdict and, in the case of a guilty verdict, the judge sentencing the criminal.

You may need to research the roles of those involved in a court case before carrying out your mock court case. Ensure you are familiar with the following:

- the role of a judge
- the selection of jurors and their responsibilities
- the role of legal counsel (both prosecution and defence)
- the role of court clerks and sheriffs
- the importance of witnesses and their responsibilities.

Source 2.4.1 illustrates a basic courtroom layout. Use this source to help set up your mock court case.

GLOSSARY

adversary system a legal system where two parties present their opposing positions to a jury or judge

burden of proof the complainant (plaintiff) must prove beyond reasonable doubt that the defendant is guilty

innocent until proven guilty a principle that no guilt can be presumed until the charge has been proved beyond reasonable doubt

judge a lawyer appointed by the government to hear court cases in a District or Supreme court, usually with a jury

judiciary the branch of government responsible for interpreting laws and deciding how they are applied

jury a group of 12 members of the public chosen by ballot to sit and listen to a trial and determine the facts of the case

laws the rules that a particular country or community recognises as regulating the actions of its members and which it may enforce by the imposing penalties

lawyer a legal expert, such as a solicitor or barrister, who represents a party in a legal case

magistrate a lawyer appointed by the government to hear court cases in a Magistrates or local court, usually without a jury

natural justice the idea that all people who come before the courts have basic legal rights such as being given a fair hearing.

private law law that relates to disputes between individuals; e.g. civil law

public law law that affects society as a whole, e.g. criminal law

regulators an official or government body responsible for controlling and supervising particular activities

rule of law basic principles, or ideas, that try to protect members of society and make sure justice is done

verdict the finding or decision presented by the jury to a courtroom

Producing and consuming

Producers and consumers rely on each other in order to survive. Consumers buy goods and services from businesses (producers), which in turn employ workers and pay them an income. In order to be successful, businesses need entrepreneurs who can help guide them and ensure they are producing items that consumers actually want to buy. Firms must continually take risks; successful entrepreneurs are willing to take these risks when the potential rewards are great enough.

Source 3.0.1 Perth's Elizabeth Quay development, which opened in early 2016, offers many new opportunities for entrepreneurs who are willing to take a risk by starting a business in this brand-new location.

Producers and consumers

Identifying producers

A **producer** is a person or group that makes something in order to sell it. A wheat farmer is a producer because they grow wheat to sell it; a freelance graphic designer is a producer because they sell the service of designing a book, such as this one, that will be produced and sold to the public. While all people are consumers, many also contribute to the operation of producers. This includes everyone with a job: they are helping to produce the good or service made by the company that employs them. A producer is sometimes also referred to as a **firm**.

Most firms are trying to make a profit. They do this by selling the goods and services they make, for more than it cost to produce them. For example, a dress shop will sell each dress for a higher price than the costs associated with making and selling it. While some firms, called **non-profit firms**, aim to exactly cover their costs but earn no profit, the vast majority of firms are trying to make a reasonable amount of profit. They do this because the profit earned by a firm becomes income to the people who own the firm. If the firm doesn't make a profit, the owners may make little or no income and therefore would find it difficult to buy goods and services to satisfy their own needs and wants.

Source 3.1.1 Non-profit firms, or organisations, include private hospitals and sport and community clubs.

Identifying consumers

A **consumer** is any person who buys goods and services to satisfy their needs and wants. This means that all people are consumers: even if a child's parents are the ones actually buying food and other items for the child, the child is still described as a consumer because they are using, or 'consuming', the items bought for them.

Needs and wants

Some of the items purchased by consumers are essential for their survival, such as water, basic food and shelter. These are referred to as **needs** because the consumer must have, or 'needs', these items in order to survive. There are many other items that consumers buy because they 'want' them, such as movie tickets and chocolate; these are called **wants**. Consumers can survive without these items, but may get considerable satisfaction from having them. Wants have the following characteristics:

- They are unlimited: when one want is satisfied, we start wanting something else. There is no end to this process.

- They are competitive: we cannot satisfy all our wants at once, so we must choose between them to decide which to satisfy first.

- They can be satisfied: it is possible to satisfy a particular want, although it is not possible to satisfy all wants at once.

- They are complementary: many wants lead to other wants. For example, if you want to watch a movie, you may also want popcorn, or transport to the cinema.

- They can vary: different people want different things, and even the same person will want different things at different times.

No consumer can satisfy every single one of their wants. With the significant variety of goods and services available, even if a consumer could satisfy all their wants today, there would be other things they would want in the future. Even if wants didn't change over time, however, an individual is highly unlikely to be able to single-handedly produce everything they need, from water, food, clothing and shelter to cars and holidays. This means that consumers are reliant on producers.

Source 3.1.2 Our basic needs include food, shelter and clothing.

Interdependence

Consumers and producers are often described as being **interdependent**. This means that they rely on each other. Consumers rely on producers to make and sell the goods and services that consumers want to buy, while producers rely on consumers to buy the things they make so the producer can continue to operate.

The relationship between consumers and producers can be demonstrated using a diagram called the simple circular flow of income.

Simple circular flow of income

Consumers need to purchase goods and services from the producers, because no individual consumer can satisfy every single one of their needs and wants. This includes paying a plumber to fix a leaky tap, buying bread from a bakery and buying a ticket for a flight from Karratha to Perth. In order to pay for these items, consumers need to obtain money. They do this by working for a producer, who pays them an income. This includes the pay earned by a salesperson, a chef or an engineer.

Producers employ workers to make goods and services which will then be sold at a profit. For example, a bakery will employ bakers and salespeople to produce and sell a range of bread and pastry products. In order to encourage people to work for them, firms will pay their workers an income. The workers use this income to buy their desired goods and services.
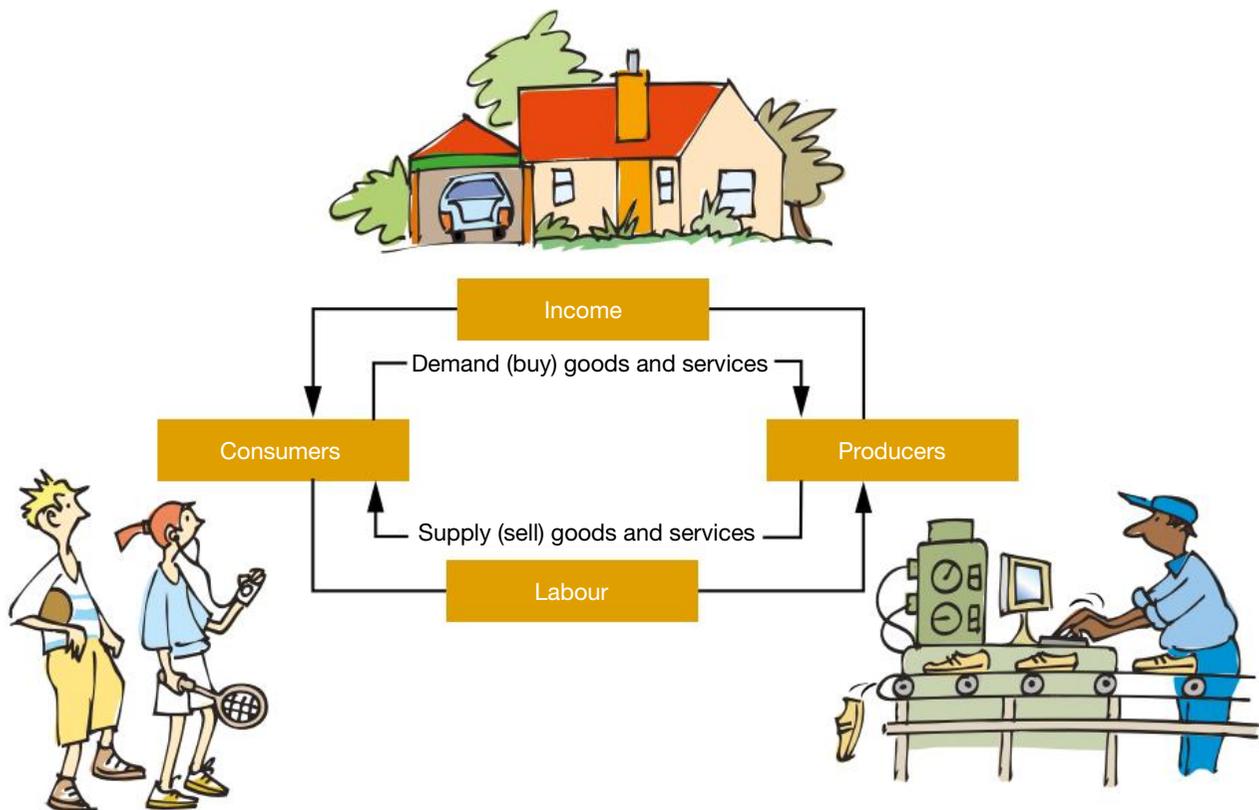
Source 3.1.3 The simple circular flow of income shows the relationships between consumers and firms. Consumers work for firms to earn income; they spend that income on buying goods and services to satisfy their needs and wants.

Consumer sovereignty

Consumers rely on producers to make the items that will help satisfy their needs and wants. However, producers also rely on consumers to buy their products so they can make a profit. A firm that produces something nobody wants to buy will not make a profit and therefore will not be able to survive. On the other hand, if consumers want something they will usually be prepared to pay for it and therefore firms may be able to earn a profit by providing the item.

Consumer sovereignty is the basis of the relationship between consumers and producers. A 'sovereign' is a ruler, like a king or queen; 'consumer sovereignty' means that consumers are rulers. In practical terms, this means that consumers' wants are the rulers of the economy: whatever consumers want, firms will be willing to provide if they can possibly make a profit by doing so. For example, few, if any, consumers want to buy flyscreens specially designed for submarines; as a result, this item is not produced by any firms.

Source 3.1.4 A business that produces something nobody wants will not make a profit.

ACTIVITIES

Remembering and understanding
1. Define the term 'consumer'.
2. How do firms make a profit?
3. Why are consumers and producers described as being interdependent?

Applying and analysing
4. Identify one impact of consumer sovereignty.
5. Show the similarities and differences between needs and wants in a Venn diagram.

Evaluating and creating
6. Create your own diagram to illustrate the simple circular flow of income.

Responding to consumer demand

Changing demand

Patterns of consumer demand can change considerably over time.

As fashions and consumer preferences change, firms may find that they struggle to sell products that were once very popular. In order to survive firms need to be able to respond to these changes by altering their products or introducing new options. Two areas where firms are responding to changing patterns of demand are the fair trade movement and the sale of reusable bottles and cups.

Fair trade chocolate

The **fair trade** movement arose from concern by consumers in the 1990s and early 2000s that farmers and workers in developing countries were being paid unfairly low prices for items which large corporations then sold in the developed world for a substantial profit. When a firm advertises its product as being 'fair trade' they are promising that the producers have been paid a 'fair' amount to cover the costs of producing that item sustainably.

Cocoa is the key ingredient used to make chocolate and is one of the focal points of the fair trade movement. Most cocoa is grown in West Africa, with around 90 per cent produced by small family farms. Supporters of fair trade argue that these small producers have little power to negotiate with the large companies who buy most of the cocoa beans. As a result, the farmers may be forced to sell their products for prices that require them to produce the cocoa beans as cheaply as possible, with little regard for the environment or the health and wellbeing of their workers.

Initially, fair trade chocolate was only sold by small, specialised firms and consumers had to pay relatively high prices. As consumer interest grew it became worthwhile for firms to shift their production processes to those countries. The majority of chocolate now sold in Australia is fair trade certified; the market leader, Cadbury Dairy Milk, has been certified by Fairtrade Australia since 2010.

Source 3.2.1 Cocoa beans are grown in hot, rainy areas near the Equator. The ripe pods are usually harvested by hand and then cut open to release the beans. This is a very labour-intensive process; workers can sometimes be paid wages that are so low they are unable to pay for their children's education.

Reusable water bottles and coffee cups

Australians spend over $500 million on bottled water each year. Until the 2000s, it was fairly rare for Australians to buy bottled water as they generally drank tap water, which was cheap and could be obtained very easily. Also, bottled water was relatively expensive and only sold by a small number of outlets. The rise in popularity of bottled water was linked to clever marketing by firms which suggested bottled water was healthier than tap water. While there was no evidence to support these claims, many increasingly health-conscious consumers were persuaded.

Today, there is a movement based on environmental considerations arguing against buying bottled water. Bottled water is usually packaged in plastic, which is produced using water. According to Clean Up Australia, it takes up to 2 litres of water to produce a plastic bottle which can hold 1 litre of water. Many people do not recycle the empty bottles and so they contribute to rubbish piles. In response to consumer concerns about these environmental and practical issues, reusable bottles are now widely available.

	Item description	Approximate %
1	Non-food packaging	24.0
2	Beverage containers	23.6
3	Food packaging	16.7
4	Beverage related rubbish	9.9
5	Chips & confectionery wrappers	6.7
6	Plastic bags	5.0
7	Other (non-identified) items	3.2
8	Sanitary items	3.1
9	Construction materials	2.4
10	Household items	2.3

Source 3.2.2 A snapshot of estimated rubbish reported by 2015 Clean Up Australia volunteers, showing the high amount of beverage containers removed.

A related development is the rise of reusable coffee cups: many cafes will now serve coffee in a cup provided by the customer. This is a response to consumers' increasing sensitivity to environmental issues as a result of millions of cups being thrown away each year.

Some companies have gone even further by developing designer bottles and cups that allow consumers to combine their environmental interests with a desire for unique, high-quality products. This demonstrates that as demand patterns change, existing firms may need to alter their products, but opportunities also arise for new firms to enter the market.

Source 3.2.3 A wide range of reusable bottles is produced today to cater for consumers' environmental concerns about disposable bottles.

ACTIVITIES

Remembering and understanding

1. What are two ways firms can respond to changing patterns of consumer demand?
2. When did the fair trade movement begin?
3. Describe how the fair trade movement arose.
4. How much money do Australians spend on bottled water each year?

Applying and analysing

5. Identify the reasons that a movement against the purchase of bottled water began.

Evaluating and creating

6. Develop an information campaign educating your school about Clean Up Australia and how to get involved in Clean Up Australia Day.

Price and demand

Setting prices

One of the biggest challenges for many businesses is deciding on the price to charge for their product. This decision can have a substantial impact on the amount of profit earned by a firm. If the price is too low, consumer demand may be greater than the firm can meet and profits could suffer. On the other hand, if the price is too high, consumers may not be willing to pay and the firm could lose customers and therefore make a smaller profit than if the price was set correctly.

Having established a price, businesses then need to be prepared to make adjustments in response to changing patterns of consumer demand. When determining the appropriate price to charge, businesses usually take the following factors into consideration:

- the resources used to make the good or service
- the amount of profit the firm wants to make
- what customers are prepared to pay.

Resources used to make the good or service

The more it costs to produce an item, the higher the price that the firm will need to charge. This depends on the amount and type of resources the firm uses. **Resources** are all the inputs into a firm's production process. There are four broad categories of resource:

- **Land**: all the gifts of nature, including water, trees and minerals
- **Labour**: the human effort used in the production process, such as the effort and skill of a bricklayer or a brain surgeon
- **Capital**: the human-made items used in the production process, such as tools and machinery
- **Enterprise**: the ability to combine the other three categories of a resource in a meaningful way, such as the strategic decisions made by a business manager.

Source 3.3.1 A diamond-coated drill bit used in the mining industry. It is made of synthetic diamonds, which are much cheaper than natural diamonds. This helps firms keep the prices of these drill bits reasonably low.

Relatively rare or unusual resources will usually cost more than very common items. For example, natural diamonds are very rare and therefore expensive, while synthetic diamonds are now fairly cheap to make. The synthetic diamonds have the same properties as natural diamonds, including the same strength and hardness, and can therefore be used instead of natural diamonds in a range of products including cutting tools and drill bits used by the mining industry. These products would be far more expensive if they were made with natural diamonds.

The amount of profit the firm wants to make

The owners of a firm usually want to earn money from the firm. As a result, most firms aim to make a reasonable amount of profit, and they are likely to take this into consideration when deciding what price they should charge. Many firms use a 'cost-plus' pricing strategy. This involves calculating the costs of producing the item, determined by the resources used, and then adding the desired level of profit.

Sometimes, however, a firm may decide to accept a lower level of profit for a short period of time or may even be willing to sell the item at a loss. Selling a product at a lower price than usual may help the firm enter a new market, introduce a new product or place pressure on competitors that face higher costs of production. In the longer run, this may allow the firm to earn a higher profit.

What customers are prepared to pay

If the firm sets their price too high, consumers will not be willing to purchase the item. Firms therefore need to find a balance between setting the price low enough to attract consumers and high enough to earn the firm an acceptable amount of profit. An important element here is the sensitivity of demand to changes in price: for some items even a small change in price can lead to a substantial change in demand.

Usually, the higher the level of demand for a firm's product, the higher the price they will be able to charge. This links closely with the level of competition: if there are many firms producing very similar products, a single firm may be forced to charge the same price as their competitors. If they charge a higher price the firm will lose customers to the competition; if they charge a lower price than their competitors they may not earn sufficient profit. To a certain extent firms can influence the amount that customers are prepared to pay. By advertising the product in a way that emphasises its quality or uniqueness, for example, the firm might be able to persuade customers that it's worth paying more.

Responding to shifts in demand

Many firms need to regularly review the prices they charge. As patterns of demand shift, the prices that were previously charged may no longer be appropriate. For example, customers may now be willing to pay more for an item that has become fashionable, or new firms entering the market may force an older firm to reduce its prices in order to remain competitive. Understanding, and even predicting, shifts in demand can give a firm a significant advantage when they set their price.

Did you know? Collusive behaviour

It is illegal for firms to work together to determine their pricing strategy. For example, while one firm can try to lower its price to place pressure on others, they cannot cooperate with other firms with the aim of controlling prices; this is called collusive behaviour. Collusion is illegal because it usually results in customers paying unfairly high prices in the long run. If found guilty of collusive behaviour, firms may have to pay very large financial penalties and the staff involved can face prison terms.

Source 3.3.3 The price of Christmas trees, ornaments, cards and wrapping paper falls significantly after Christmas as consumers no longer feel they 'have' to make purchases in time for Christmas Day.

Source 3.3.4 Businesses that are too slow to respond to changes in demand may find that they lose customers to other, more responsive firms. In the worst case, firms that no longer meet consumers' needs will have to close down as they will not be making a profit.

Source 3.3.5 Customer surveys can tell businesses about the needs of their customers and how they can improve their goods or services.

Source 3.3.6 Loyalty programs are one way firms can gather information about shifts in demand.

Market research

Ongoing market research can help firms fine-tune their pricing strategy. This includes any process of gathering and interpreting information about the needs and preferences of potential customers. Taking surveys of potential customers is a common and relatively cost-effective form of market research, so long as the survey is carefully designed to provide useful information to the firm.

The loyalty programs offered by many firms can also provide a form of market data. By providing customers with a card that is scanned each time they make a purchase at the store, the firm can assemble a significant amount of data about customer behaviour and preferences. Processing this vast collection of information can be time-consuming and costly, but it can provide up-to-date insights into even minor shifts in demand.

ACTIVITIES

Remembering and understanding

1 List the three factors businesses take into account when determining the appropriate price for their products.
2 What are the four broad categories of resource?
3 Name the pricing strategy that many firms use to decide on the price for their products.
4 Define the term 'collusive behaviour'.

Applying and analysing

5 Identify the impact of competition on a business's decision to set a price for a product.

Evaluating and creating

6 Study Source 3.3.3. Argue for or against the statement that it is unfair for businesses to reduce the price of Christmas products after Christmas Day.

Entrepreneurs

The characteristics of entrepreneurs

An **entrepreneur** is someone who contributes enterprise to a firm's operations. They are generally recognised as the owners or senior managers of successful firms; however, anyone in a genuine leadership role is required to demonstrate entrepreneurial ability. Most successful entrepreneurs demonstrate a combination of these characteristics:

- innovation
- initiative
- self-motivation
- willingness to take appropriate risks.

Source 3.4.1 The 'spray-on skin' developed by Professor Fiona Wood was an innovative response to many of the problems experienced by medical staff when treating patients with severe burns. The product is now used worldwide.

Innovation

Innovation refers to the process of developing new ideas. Successful entrepreneurs come up with creative solutions to problems faced by their firm. This might involve concepts that will help attract or retain customers, or measures to reduce the firm's costs and increase profits. It can also involve developing entirely new products, such as Professor Fiona Wood's development of 'spray-on skin', which she created while working at Royal Perth Hospital in the late 1990s and early 2000s. This product is now widely used to treat severe burns.

Initiative

Successful entrepreneurs have the ability to act or take charge of a situation before others do. This is essential for predicting and responding to changes in the market. For example, when Janine Allis was in the United States in 1999 she realised that the fresh juice and smoothie market was rapidly expanding there. Despite the similarities between US and Australian consumers, there were very few juice bars in Australia at the time. Realising that this provided considerable business potential, she seized the initiative and established Boost Juice.

Self-motivation

Successful entrepreneurs are motivated to develop their ideas or business, and to persevere when difficulties emerge. Thomas Edison is an example of an entrepreneur who persevered in the face of significant difficulties. In developing the first commercially viable light bulb in the 1870s, he needed to solve the problem of finding a suitable material for the filament, the thin wire that produces the light emitted by traditional bulbs. Edison led his team in testing more than 6000 possible materials before finding one that was suitable. Without Edison's perseverance and motivation it may have been many more years before a cost-effective light bulb was developed and put on the market.

Willingness to take appropriate risks

All entrepreneurs need to take risks, whether they are starting a new firm, developing a new idea or finding ways to reduce costs. Sometimes this may involve risking large amounts of money, time or reputation. The entrepreneur needs to be able to assess the likelihood of their project succeeding, and decide whether the potential benefits of the project are worth the risks.

Smiggle is an example of a company where the managers have taken carefully considered risks. The firm was founded in Melbourne in 2003 and soon experienced considerable success. In 2008 the managers took the risk of expanding into New Zealand, then to Singapore in 2011 and the United Kingdom in 2014. These expansions required the firm to spend significant amounts of money. To help manage the risks involved in each expansion, the firm engaged in a lengthy period of market research and planning; despite this careful planning, however, some risks and uncertainties remained. It was the task of the firm's managers and entrepreneurs to make the final decision about whether or not to proceed. While Smiggle's expansion has been successful so far, there are many other entrepreneurs who have not had this degree of success.
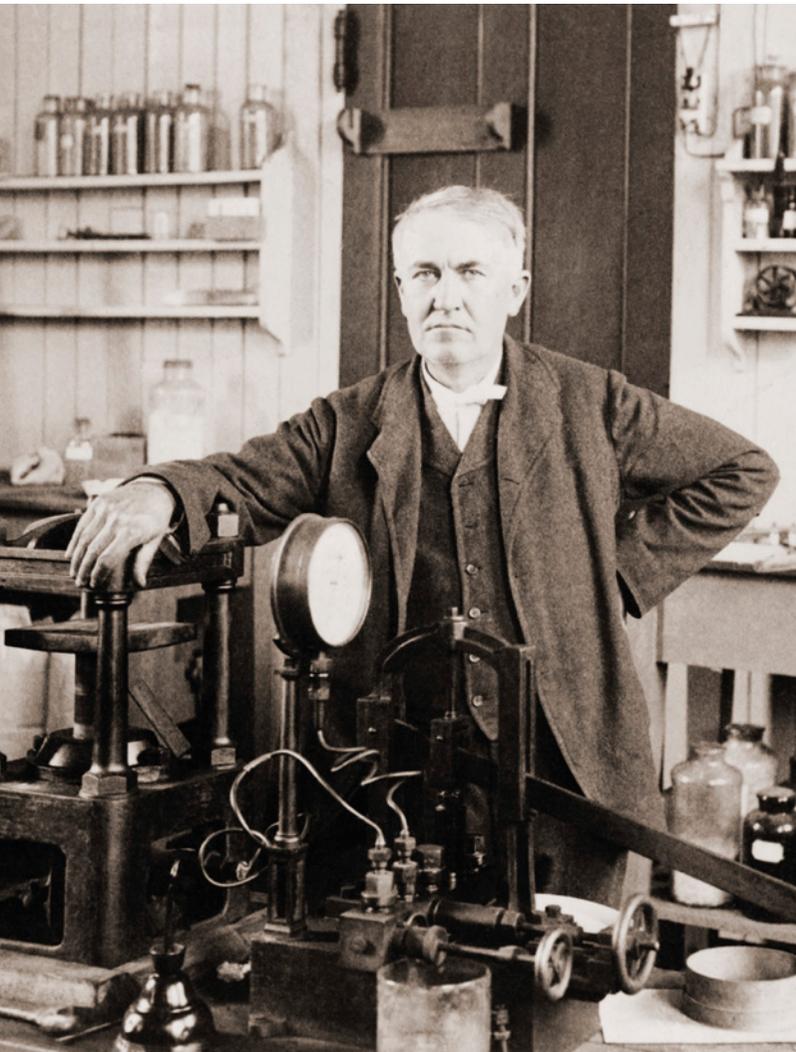
Source 3.4.2 Thomas Edison (1847–1931) was a notable entrepreneur, developing over 1000 products, including the first low-cost, long-lasting light bulb.

ACTIVITIES

Remembering and understanding

1 Define the term 'entrepreneur'.
2 What are the four characteristics most successful entrepreneurs demonstrate?
3 Name the business Janine Allis started when she showed initiative.
4 Where and when did Smiggle first expand its business?

Applying and analysing

5 Identify how Thomas Edison showed self-motivation and perseverance when he was developing the first commercially viable light bulb.

Evaluating and creating

6 Study Source 3.4.1. Research how and when Professor Fiona Wood developed 'spray-on skin'.

Inquiry tasks

Consumer needs and wants

Throughout the world, wealth, income and resources are distributed unevenly. In Australia, most people are middle class; in some societies, many people are very poor and few are very rich.

Design a poster (print or digital) containing magazine/newspaper cutouts, photos or illustrations in the following three sections:

1   Everyone's basic needs (approximately five).

2   What people living in poverty might want.

3   What people living in luxury might want.

When you have finished your poster, write a paragraph discussing the differences between the wants of a wealthy person and those of a poor person. Write a glossary defining any economic terms you use in your discussion.

Consumers and producers

a. Identify and describe the two key roles of producers and the two key roles of consumers.

b. Explore the problems that would occur if consumers stopped buying the goods and services produced and determine what actions producers would need to take.

c. Use internet resources to investigate how a producer of your choice has responded to the changing consumer demand for either environmentally-friendly products or healthy alternatives. Evaluate the reasons for the producer's response and, if possible, the outcome.

Cost of a hamburger

Use internet resources to investigate the following costs:

• the retail price of a hamburger at a fast food restaurant

• the costs involved in producing a hamburger: each part of the hamburger (e.g. bun, meat pattie etc.) and the hourly rate of a fast food employee.

Work out the estimated profit made on a fast food hamburger after land and labour prices. There are many other costs involved in producing a hamburger than those mentioned above, such as capital equipment, enterprise, advertising and electricity. These can be difficult to calculate, but you may wish to refer to them in your profit estimation.

Write an extended discussion on the relatively low price of hamburgers (considering the minimal profit) and the ways that fast food restaurants are able to maintain these low prices while still making a large profit.

Entrepreneurs: 'Shark Tank' presentation

In groups of two or three, design an adaptation to a good that will either solve a problem or make life easier for consumers. Then create a mock-up of the new good and an advertising campaign to present and promote it to your class.

• Start by brainstorming ideas. Once you have settled on your best innovation, think of a catchy name, determine the price and decide how you are going to pitch it.

• Allocate tasks: create a mock-up and produce an advertisement.

• When creating the advertisement campaign, consider your market and the best methods of reaching it, such as posters, television, internet or radio advertisements

• Use your work to create a three-minute presentation for a group of potential investors.

• Present your product to your class.

Source 3.5.1 Leigh Warren and Adam Dubrich appeared on the TV program 'Shark Tank' with their innovative idea of combining a set of cricket stumps with a cooler for people wanting to play beach cricket with a minimum of fuss. The money they received helped them to produce the product for the market.

GLOSSARY

capital human-made resources such as tools, vehicles, machinery and buildings

consumer a person or a group that is the final user of goods and services

consumer sovereignty the situation in the economy where the needs and wants of consumers control what is produced

enterprise the resource provided by people who organise, fund or manage production

entrepreneur an innovative person who sets out to build a successful business in a new field, often taking on risks to do so

fair trade trade in which fair prices are paid to the producers in developing countries to help reduce poverty

firm a business organisation that sells goods and services, usually for profit

innovation something new or different—can be an idea, a product or a process

interdependent describing the way consumers, workers, businesses and governments are connected to and rely on each other

labour the resource provided when people do work—physical and mental

land resources from the natural environment, including plants and animals

needs goods or services that are necessary for consumers to keep alive

non-profit firms business organisations that use surplus funds to achieve their goals rather than giving the profits to the owners

producer an individual or business that makes, grows or supplies goods and services

resources natural and made items that we value and use to produce goods and services that satisfy needs and wants

wants a good or service that is desired but is not necessary for survival or to meet the basic standard of living in a community

Work

For most people, some form of work is necessary so they can earn an income. This does not mean that work has to be a chore; instead, it can bring great happiness and satisfaction, as well as allowing the worker to buy goods and services they may not otherwise be able to afford. At some point, many workers choose to retire; the challenge here is to ensure they have enough income in retirement to allow them to continue enjoying the standard of living they are used to.

Source 4.0.1 Different jobs will appeal to different people. Some may find fixing cars very enjoyable; others may prefer to work as a paramedic or emergency services officer. Whatever work a person does, it can provide benefits beyond simply earning a wage or salary.

Why people work

What work offers

In Australia, there are over 12 million people who either have a job or are actively looking for work. While people choose to work for many different reasons, usually they are motivated by a combination of these factors:

- earning an income
- gaining access to a higher standard of living
- contributing to self-esteem
- contributing to happiness.

Earning an income

In exchange for working, employees receive money and sometimes other benefits, for example, the use of a company car. This is called the employee's **income**. Income is often the most obvious benefit of work: in each pay period the employee receives their pay and can then use the money as they wish. While accumulating money can be an end in itself, for many workers the appeal of earning an income lies in being able to use that income to purchase goods and services that raise the worker's standard of living.

Higher material standard of living

A person's **standard of living** is the level of wealth and comfort they can achieve. Being able to afford a greater number, variety or quality of goods and services makes a direct contribution to the individual's living standards. As income rises, the worker might decide to spend some of their money on improving their home, going on holiday or buying higher-quality foods.

Contributing to self-esteem

For many people working life offers a sense of purpose and of contributing to a common cause. These individuals are often described as having a vocation, or a strong sense that they are particularly well suited to serving others through a particular occupation. This can be experienced in any industry—just as a nurse may feel they are supporting others who are in poor health, a chef may feel they are providing enjoyment to their customers by creating dishes that are both delicious and beautifully presented.

Contributing to happiness

For many people, their work is a source of genuine happiness. They enjoy what they do, and this

Source 4.1.1 For many people, working in a pleasant environment with people they like can be a source of considerable satisfaction.

Source 4.1.2 Earning an income allows people to purchase goods and services. For some people, work may be a way to allow them to afford a holiday overseas.

enjoyment brings far greater rewards than simply providing an income. This may arise from the nature of their work; for example, a teacher might enjoy helping students to learn and understand concepts, while a journalist might enjoy the process of researching, writing and presenting a news story.

The nature of the work environment can also contribute to workers' enjoyment. If they have positive, supportive relationships with their colleagues and a pleasant physical environment to work in, workers are likely to feel that they are making a positive contribution beyond simply earning an income. The social element of work can give great satisfaction, allowing employees to meet new people and create new social and professional opportunities.

Work can provide meaningful challenges. The process of solving these challenges can be enjoyable in itself, so the employee can feel that their work is fun and interesting. Having a sense of responsibility can contribute to this, giving the worker some degree of ownership of the solutions and products that emerge from their efforts.

Changes over time

Even with the most exciting job there can still be days that are routine, and over time a person's

reasons for working may change. For example, a job that once provided great satisfaction and happiness may cease to offer a challenge, and instead be seen as just a way to make money until a new opportunity arises. Moving from one job to another may provide new challenges and renew the employee's interest in the work they do.

ACTIVITIES

Remembering and understanding

1   How many people in Australia either have a job or are actively looking for work?
2   List the four factors that combine to motivate people to choose to work.
3   Define the term 'standard of living'.
4   State two factors that may contribute to a person's happiness at work.

Applying and analysing

5   Survey two people who work, to determine what contributes to their happiness at work.

Evaluating and creating

6   Evaluate your own strengths to determine what work would contribute to your self-esteem and happiness.

Types of work

Work arrangements

There is considerable variety in the way that jobs can be arranged. While the standard working week involves 38 hours of work, many people work shorter or longer hours than this. The times at which people work can also vary, with some working a traditional 9 am to 5 pm day, while others may work at night or on the weekend.

A person's work can be classified as:

- full-time
- part-time
- casual
- from home
- contract
- volunteer.

Full-time work

In Australia, **full-time work** is based on a 38-hour week, with the employee having either a permanent position or a contract lasting for a fixed period of time. Usually, this involves working around eight hours per day for five days each week. However, it is possible to have 'averaging' arrangements, which are designed to ensure that over a given period of time the employee works an average of 38 hours per week. For example, workers on remote mine sites may have rosters that cover a period of time when they are on-site and work relatively long shifts, followed by a period when they are at home and don't work at all. This might take the form of 'two weeks on, one week off', to average at 38 hours per week. Full-time employees usually have a regular arrangement that determines the hours they work, whether this is the same each week or based on an averaging process.

Full-time workers are entitled to sick leave, parental leave, holiday leave and other benefits. The amount of leave they are allowed to take and the timing of it vary from industry to industry, but these must always be clearly explained in the employment agreement signed by the employee and the employer. Most full-time workers receive four weeks' annual leave each year, plus at least 10 days of sick leave.

Source 4.2.1 A science teacher and her students. Teachers can work on either a full-time or part-time basis.

Part-time work

Employees undertaking **part-time work,** on average, spend less than 38 hours per week at their job. Like full-time workers, they usually have a fixed arrangement determining their hours of work, and have either a permanent position or a fixed-term contract. The amount of leave they are entitled to each year is based on their 'full-time equivalent' or FTE; this is the proportion of full-time hours they work. For example, someone working 19 hours per week would be described as working a '0.5 FTE', and would receive half the leave allowances of a full-time worker each year.

Casual work

Casual employees do not have any guarantee of the number of hours' work they will complete each week. Usually, the hours they work will vary from one week, or even one day, to the next. **Casual work** may be determined by a weekly roster, but there is no certainty that this roster will be the same each week, and there is the possibility that the casual worker may be offered extra hours. The employer does not have to offer work to each employee each week, and a casual worker does not have to agree to work the hours that are offered.

Unlike full-time and part-time workers, casual employees do not receive sick leave or annual leave. If a casual worker is sick and unable to work they will not be paid for that shift. However, casual workers do receive a higher rate of pay per hour to take this into consideration; this is referred to as casual loading. The hospitality and retail industries employ large numbers of casual workers.

Work from home

An employee who works from home is not required to travel to an office or other work location. Instead, they complete their work while at home. These arrangements offer considerable flexibility about the hours of work: depending on the exact nature of the job, the employee may be able to structure their day so they are free at key times. For example, a work-from-home parent of school-aged children can organise their day so they can drop their children off and pick them up from school each day.

Work from home may be full-time, part-time or casual. Those working from home on a full-time or part-time basis are entitled to the same leave allowances as those working in offices and other formal workplaces. Industries that employ large numbers of people working from home include those that offer support services over the phone or internet, such as technical support officers and nurses providing health advice.

Source 4.2.2 Many workers in the hospitality industry are employed on a part-time or casual basis.

Source 4.2.3 Working from home offers flexible hours and can save the employee considerable time as they don't need to travel to a central office.

Contract work

A worker can be employed to complete a specific task without having any guarantee of work beyond that task. This is referred to as **contract work**. The worker, known as a 'contractor', agrees to complete the specified task by a particular date.

Source 4.2.4 Many information technology professionals work on a contract basis. Moving from one company to another can give them experience in many different environments and help to maintain their interest in their work.

Usually, the contractor has a greater degree of control over how the work is done than a regular employee would have, as long as they maintain the terms of the contract. The contractor has the ability to choose the hours they work, with the proviso that the agreed task must be completed by the agreed date. Contractors do not receive any paid leave.

Anyone with specialised skills can potentially complete contract work. For example, those who are skilled in database establishment and management can potentially organise their career and income around a series of contract arrangements.

Did you know?

The methods for looking for jobs and applying for them have changed over the years. Today, over 77 per cent of job seekers use mobile apps to search for jobs.

Volunteers with WA's State Emergency Service are not paid for their efforts, but provide a vital service to the community.

Volunteer work

Many people undertake to regularly complete particular tasks for others without being paid for their efforts. This is known as **volunteer work**. There are significant variations in the types of work done on a volunteer basis and the hours these commitments require. Examples include volunteering with the State Emergency Service, which involves a commitment to ongoing training and being available to assist in tasks, such as cleaning up storm damage and searching for missing people. Other opportunities for volunteer work include providing companionship and entertainment for elderly people, organising parent support groups at schools and assisting with soup kitchens and other services for the homeless. Many services to local communities could not be provided without the work of volunteers. While they do not receive any monetary pay, their contribution is vital to many aspects of modern Australia and it can provide individuals with a great sense of wellbeing.

ACTIVITIES

Remembering and understanding

1   List the six ways in which work can be classified.
2   What are three types of leave full-time workers are entitled to?
3   Define 'casual loading'.
4   What industry employs large numbers of people who work from home?

Applying and analysing

5   Using a Venn diagram, show the similarities and differences between full-time work and casual work.

Evaluating and creating

6   Investigate volunteer work that is carried out in your community and report on your findings.

Sources of income

Earning an income

Income refers to the money a person receives from working and from property, shares and other assets they own. This income can then be used to purchase goods and services that will contribute to the person's standard of living. There are many different sources of income, including:

- wages and salaries
- owning a business
- shares and other investments
- royalties
- welfare payments.

Wages and salaries

The most common forms of income are wages and salaries paid to workers. A **wage** is based on the number of hours worked by the employee; if they work longer hours, they take home more pay. A **salary** is a fixed amount of money the employee receives, usually calculated per year, regardless of the number of hours they actually work.

Wages and salaries are negotiated between the employee and their employer, although the federal government sets minimum levels for income and other conditions of work. In 2016 the minimum wage for adults was $17.29 per hour or $656.90 for a standard 38-hour week. Workers younger than 21 years earn less than this. Average earnings per week are around $1500.
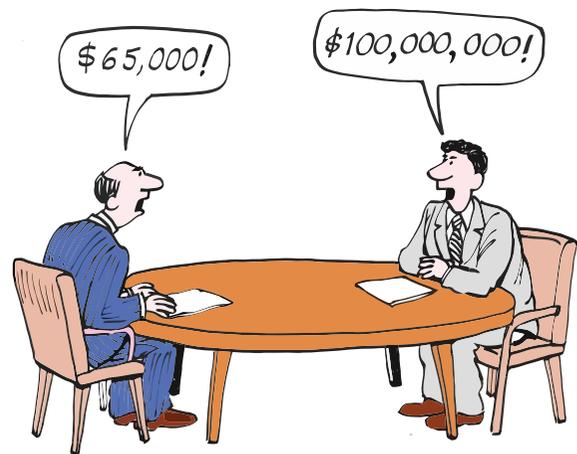
They were moving closer on salary.

Source 4.3.1 Wages and salaries are negotiated between an employee and their employer.

Young workers in Western Australia

In Western Australia, children are required to prioritise school over work. However, children of any age can work in a family business run by a relative, volunteer for a community group, or perform professionally as an actor or musician, for example, by appearing in a TV commercial.

Children aged 10 to 14 can start working in some jobs, but there are restrictions on the types of work they can do and their hours of work. From the age of 15 children have access to a much wider variety of employment options so long as they are satisfying the state government's education requirements.

Age	Work opportunities	Hours of work	Supervision
10–12	Delivering newspapers and pamphlets before and after school	Not before 6 am or after 7 pm	The child must be accompanied by a parent or another adult with written permission from the child's parents
13–14	Delivering newspapers, pamphlets or advertising material Working in a shop, fast food outlet or café Collecting shopping trolleys from a retail outlet or adjacent area	Not before 6 am or after 10 pm	The child must have written permission from their parents

Source 4.3.2 In Western Australia, children can start working at the age of 10, although there are significant restrictions on the work opportunities and conditions for young people.

Owning a business

People who own a business are able to earn an income from that business. **Profit** refers to the difference between the amount a business sells their product for and the amount it costs to make the product. When the business earns a profit, the owners can decide whether to pay themselves an income from that money or spend the money on improving the business.

The amount of money earned by business owners can vary greatly from one year to the next. If the business is doing well the owners may be able to earn a relatively high income; however, if the business goes through a more difficult period it is possible that the owners may not earn any income from it at all.

Shares and other investments

Investments are items that are expected to earn an income for the owner in the future. For example, a person may own a house which they rent out to others. This rent is a source of income for the property owner. Money deposited in a bank can also earn income as the bank pays interest on the amount of money in the account.

Shares are another type of investment. When a person buys shares they are buying a small part of a company and can therefore earn a small part of any profit that company makes. Shareholders have little input into the day-to-day operations of the company and therefore have little control over the amount of profit earned by the company. There is no guarantee that shareholders will receive any income; however, they do have the option of selling their shares at almost any time.

Source 4.3.3 Rental services, including car rentals, make a profit by loaning cars, appliances and other items to customers in exchange for a fee. The car rental industry in Australia alone earns over $1 billion in revenue each year.

Source 4.3.4 Share prices are continually changing; prices are displayed on electronic boards in share markets throughout the world. Those buying shares are advised to plan to hold them for some time as prices can both rise and fall very rapidly.
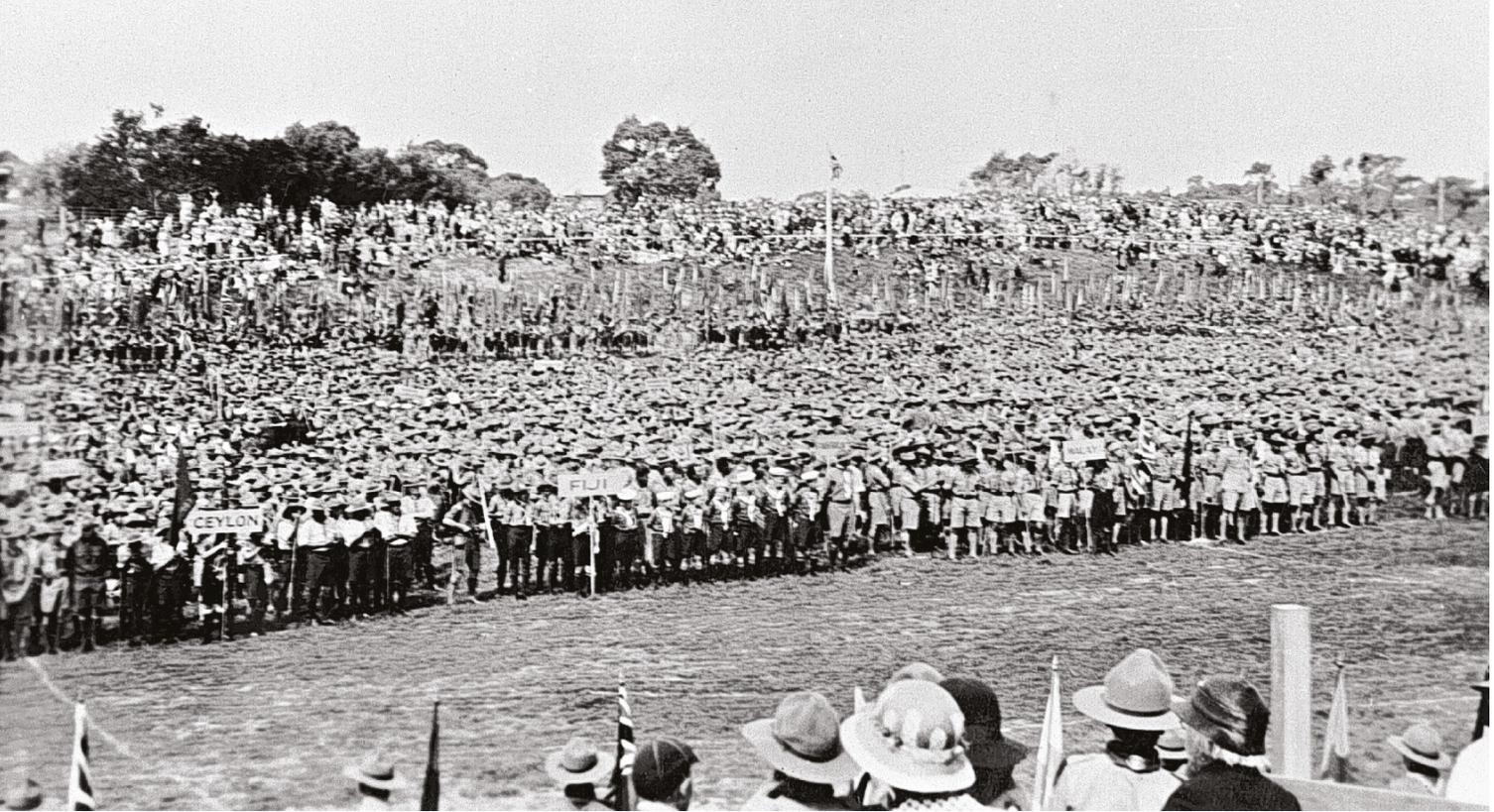
Royalties

A **royalty** is a payment that allows a person or group to use someone else's intellectual property. Intellectual property refers to things that are created within the author's mind, using their creativity. This includes writing books and music, inventing a new production process or developing a new logo for a particular brand. When other people want to use these items they must pay a royalty to the owner of the intellectual property.

The amount of royalty income earned can vary considerably. The author of an international best-selling novel that is made into a multi-award-winning movie could earn substantial royalty payments, as could the composer of a song that is used to advertise a popular product. Other holders of intellectual property may earn little or no royalties: if their invention is never used by anyone else they will not earn an income from it.

Protecting intellectual property

Using someone else's intellectual property without paying the appropriate royalties is known as plagiarism. This can include copying work from a book or website without acknowledging it, or using a musical composition without permission. Plagiarism can lead to very expensive penalties. In 2011, the Australian band Men At Work were forced to pay thousands of dollars in royalties to Larrikin Records on the grounds that the flute line in the band's iconic song 'Down Under' copied the tune of 'Kookaburra sits in the old gum tree'. The intellectual property of 'Kookaburra' is owned by Larrikin Records, who bought the rights from the song's composer Marion Sinclair.

Source 4.3.6 JK Rowling has earned millions of dollars in royalties from sales of her *Harry Potter* books.

Welfare payments

People who are experiencing difficult circumstances may be able to receive income payments from the government; these are referred to as **welfare payments**. This includes payments for families with young children, payments for elderly people with little or no other forms of income, disability support payments, and the Newstart Allowance for the unemployed.

Most of these welfare payments are not designed to be the recipient's only form of income.

Generally, they are a way to support people who are experiencing temporary difficulties and are paid at a rate that aims to encourage people to work if they possibly can. Many payments are **means tested**, which means that the amount paid to a particular person depends on that person's other income and the value of the items they own. Means testing is used to help ensure that the people receiving welfare are those who actually need it; welfare is not supposed to be a convenient alternative to working to earn an income.

Source 4.3.7 Centrelink is an Australian government agency that can deliver unemployment benefits and other services to people on a low income or without an income.

ACTIVITIES

Remembering and understanding

1 What are five sources of income?
2 State two restrictions placed on children aged between 10 and 12 being able to work.
3 Define the term 'investment'.
4 What does a royalty payment allow a person or group to do?

Applying and analysing

5 Rank the five sources of income in order of how certain you are to receive them.

Evaluating and creating

6 Argue for or against this statement: 'The minimum wage of $656.90 for a standard 38-hour week is not enough to live on.'

Retirement and income

Retirement

When a person goes into **retirement** they are leaving their job without any intention of returning to work in the future. This is usually associated with old age. Having stopped working, however, the retiree still needs access to money so they can continue purchasing a range of goods and services. The three most common sources of income for retirees are:

- the age pension
- superannuation
- private savings.

Age pension

The age pension is a form of welfare, a payment made by the government to people in need of income support. Australian residents may become eligible for the age pension when they reach 'pension age'. This is 65 years until 1 July 2017, but will then gradually rise so that people born on 1 January 1957 and later will not be able to receive the age pension until they are 67 years old. These increases in the pension age are necessary because people are living longer now than ever before, so the government has to encourage people to keep working and supporting themselves for longer than previously.

The basic pension rate is $794.80 per fortnight for a single person, or $599.10 per fortnight for each member of a couple. They may be able to receive additional payments to assist with rent and other costs. As at early 2016, people can earn up to $162 per week and still receive the full age pension. If they earn additional income, the amount they can receive will gradually fall. A single person earning $1909 per fortnight or couples earning $2922.80 per fortnight or more cannot receive the age pension.

Superannuation

Superannuation is a compulsory way of saving for retirement. A person's employer must pay 9.5 per cent of their wage or salary into a superannuation account; this will gradually rise to 12% in 2026. These amounts accumulate over the person's entire working life, and are invested by the managing superannuation fund so that they also earn returns.
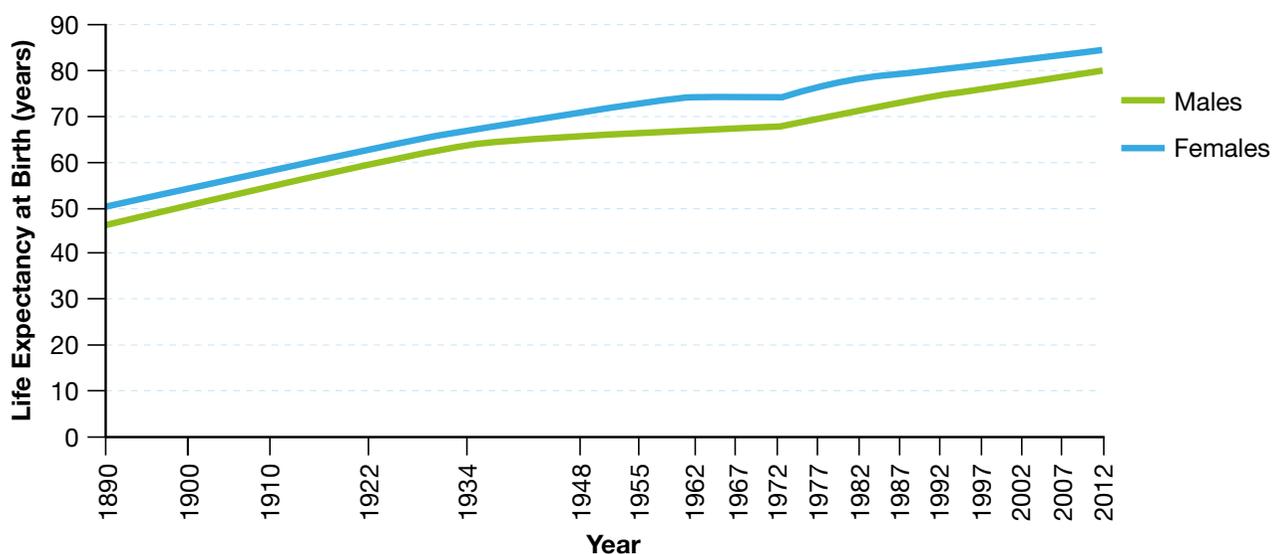
Source 4.4.1 As life expectancy rises, Australians need to plan carefully for their retirement as they may be able to live full and active lives for many years after they finish work.

Usually, a worker is not able to withdraw the money they have built up in their superannuation account until they are in their 60s. Once the person retires they can decide to be paid their entire superannuation amount all at once or they can receive a steady income stream.

Over their working lives, people can choose to make additional contributions to their superannuation. The more they save over their working life, the earlier they can afford to retire, or the more comfortable their retirement will be. It is important to manage this process carefully: the amount a retiree can receive from the age pension will fall if their income from superannuation or other sources rises above the minimum levels set by the government.

Private savings

Workers can build up savings aside from their superannuation. An individual has a far greater degree of control over their private savings than they do over their superannuation. Depending on how their savings are structured, it may be possible for the worker to access their saved money at relatively short notice, while they usually cannot receive their superannuation until they are in their 60s. These private savings can affect the size of age pension payments, so it is important to plan carefully and ensure that an appropriate balance is reached.

Planning for retirement

Carefully planning for retirement is very important. Depending on the individual's health and other circumstances, it is possible that someone who retires at 65 may need to have measures in place to support them for another 30 years or more. Understanding the relationship between the age pension and the amount of other income that a retiree receives can have a significant influence on the amount of income they can enjoy in retirement.

Source 4.4.2 With careful planning, most workers should be able to look forward to a fun retirement with enough money for reasonable spending on goods and services.

ACTIVITIES

Remembering and understanding

1 List the three most common sources of income for retirees.
2 Currently, at what age may Australian residents be eligible for the age pension?
3 How much of a person's wage or salary must an employee pay into a superannuation account?
4 What are two ways a worker can decide to be paid their superannuation?

Applying and analysing

5 Identify one impact on a retiree's sources of income as a result of Australia's ageing population.

Evaluating and creating

6 Study Source 4.4.1. Evaluate this statement: 'Workers need to plan for their retirement long before they retire'.

Inquiry tasks

Analysis

In an episode of *The Simpsons*, Homer Simpson hated work so much that he ate until he became morbidly obese and was able to stay home and work. He then used a drinking bird to do his job while he went to the movies. The bird bobbed up and down on the Y button of his computer to vent the gases at the nuclear plant he worked at. Of course, the bird fell over and the nuclear plant nearly blew up.

Reread Unit 4.1 'Why people work', and analyse how Homer's job meets or fails to meet each of the criteria. Write a paragraph for each criteria analysing to what extent it does/does not meet the criteria mentioned in the unit. Make sure you follow correct paragraph structure:

- **Topic sentence**—your basic answer as to why it does or does not meet the criteria.
- **Explanation**—a sentence or more which expands on and gives further clarity to your idea.
- **Example**—an example that supports your idea with facts, anecdotes or figures.
- **Tie back or link**—a statement that wraps up your ideas or signals the idea presented in the next paragraph.

Work arrangements

Create a table similar to the one below to use as a framework for assessing the different types of work arrangements. Use the information in the student book as well as conducting further research online.

Type of work arrangement	Key features	Pros	Cons

Create a profile of a worker that can be used to educate students about the types of work arrangements available. In your profile, describe the worker's occupation, their work arrangements, the way their work arrangements fit in with their lifestyle, and disadvantages they find resulting from their work arrangements. You may present this profile in the format of your choice, as agreed with your teacher; for example, video, poster, graphic organiser.

Government welfare payments

Investigate the various types of welfare payments that are available to Australian citizens. You can find this information on the Centrelink website via the Department of Human Services.

There are 12 main areas for which payments are made. These include for families, carers, older Australians and people with a disability.

a Read the description of one payment paid in each of the 12 areas.

b Choose one payment that interests you and research the following questions.

- Why does the payment exist?
- Who is eligible?
- How much is the payment? (fortnightly and per annum)
- What conditions apply?
- How do people apply for it?

c Use this research to create a digital information brochure about your chosen welfare payment. Ensure your information is clear and easy to understand. The reader should be easily able to locate relevant information. Consider your design and your use of headings, images, tables and graphic organisers.

Occupation presentation

Brainstorm types of work you might like to do when you finish your schooling. Research one occupation and identify the following:

- what type of work you would carry out
- what your responsibilities would be
- what main skills or knowledge you would need
- the typical hours involved
- how much you might be paid (on average)
- the benefits and disadvantages of the occupation.

Create a two-minute talk to present to your class on your chosen profession. After completing your research and listening to the presentations of your classmates, you may discover that another profession sounds more appealing to you or more suitable for you. Evaluate which of the professions you are most suited to, matching your skills, talents, characteristics and motivations to those required in the occupation.

Source 4.5.1 In the future, ways of working will be very different from now. One change might be that many people will work from home and collaborate via technology.

GLOSSARY

casual work work that has irregular hours and is not guaranteed for the worker, who gets no paid sick leave or annual leave

contract work where a person is employed to complete a specific task without having any guarantee of work beyond that task

full-time work ongoing employment that lasts, on average, around 38 hours each week

income money or other benefits an employee receives in exchange for working

investments items that are expected to earn an income for the owner in the future

means tested based on measurement of a person's income

part-time work regular, ongoing employment that lasts, on average, less than 38 hours each week

profit the difference between the amount a business sells their product for and the amount it costs to make the product

retirement the period after you have permanently stopped working

royalty a payment that allows a person or group to use someone else's intellectual property

salary a fixed amount of money received by the worker, usually based on a yearly rate, regardless of the number of hours they actually work

standard of living level of necessities, wealth, material goods and comfort a person can achieve

superannuation a regular payment made into a fund by an employee towards a future pension to use when they have retired

volunteer work unpaid work or tasks for others, often regular

wage income based on the number of hours worked by the employee

welfare payments monetary aid from the government

Water in the world

Water is a precious natural resource; we can't live without it. As the world's population has increased, so have the demands of agriculture, leading to an increase in water use. Growing populations have also resulted in the earth's water sources becoming more polluted. Approximately one-sixth of the earth's people do not have access to safe drinking water.

The increased population, the uneven distribution of water and the variability in water sources and water quality all mean that as a resource, water must be very carefully managed. As a global community, efficient water use to prevent the negative effects of water scarcity, including access to clean water, is essential.

In this chapter we focus on the importance of water, the water cycle, the distribution of water resources and how these relate to water use and management.

Source 5.0.1 A woman carries water in Africa.

Environmental resources

Defining environmental resources

An environmental or natural resource is anything in the biophysical environment that people use. Humans cannot make these resources; instead, they gather them from the earth. Examples of natural resources include the earth's air, wind, water, forests, plants and animals; the sun's energy; mineral ores such as iron ore; and fossil-based fuels such as crude oil, coal and natural gas.

Natural resources		
Renewable	**Non-renewable**	**Continuous**
• **Fresh air** • **Fresh water** • **Fertile soil** • **Plants and animals** (biodiversity)	• **Fossil fuels** (coal, oil, natural gas)	• **Direct solar energy** • **Winds, tides, flowing water** • **Heat of the earth's interior** (geothermal energy)
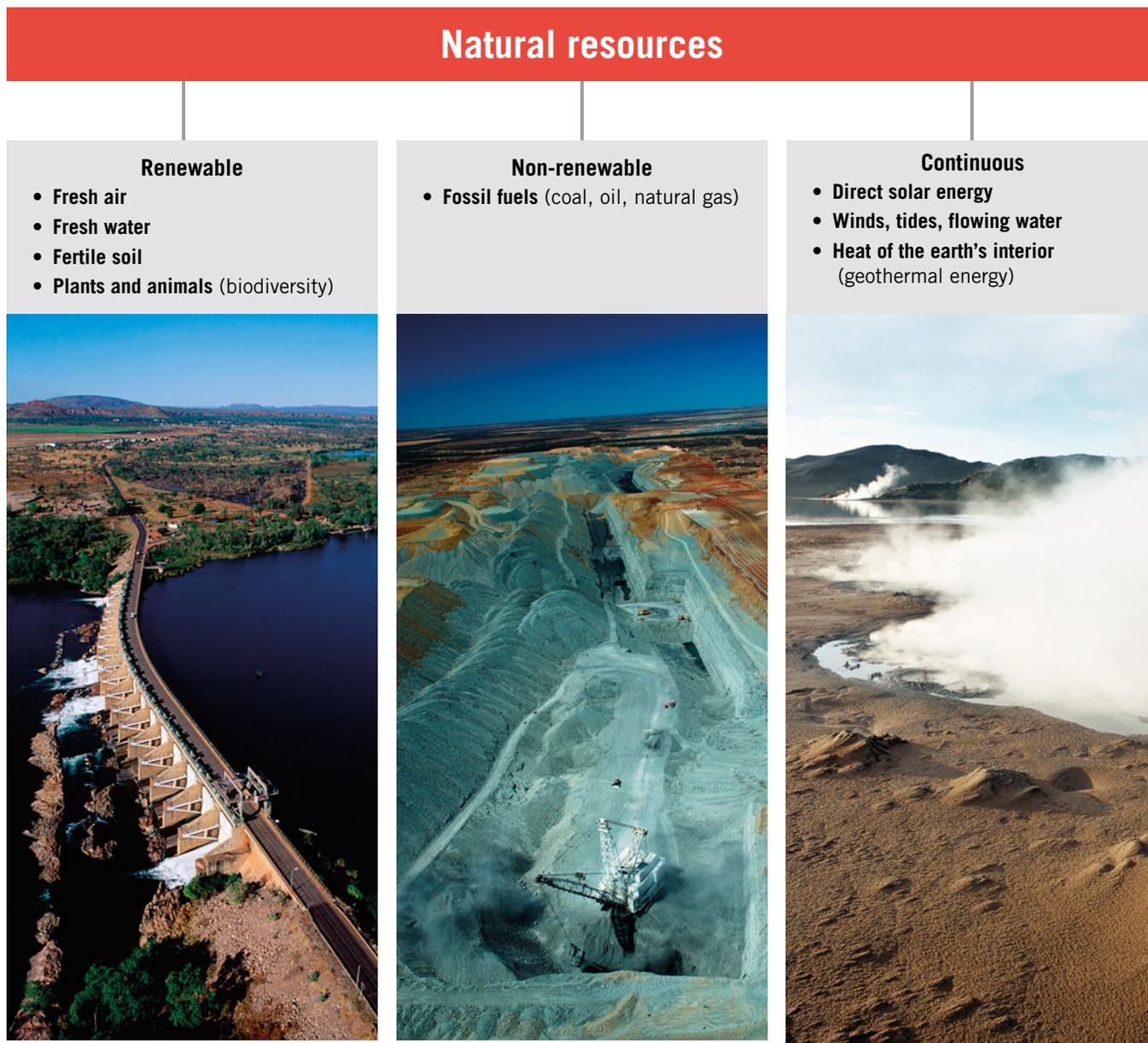
Source 5.1.1 Environmental resources, classified by type. Left: The Ord River Dam and Lake Argyle, Western Australia; Centre: A giant open-cut coal mine in the Bowen Basin, Queensland; Right: Steam and mud in Krisuvik geothermal fields, Iceland.

Types of environmental resources

We often classify environmental resources or natural resources as being either renewable, non-renewable or continuous, as shown in Source 5.1.1.

A renewable resource can be exploited or used again and again, as long as it is managed sustainably. Examples include fresh water and air, forests and the earth's fisheries.

A non-renewable resource is a resource that cannot be replaced once it has been used. When coal is mined, then burnt for electricity and energy, we reduce the amount available for future use. It cannot be replaced. Non-renewable resources cannot be recycled.

A continuous resource is a renewable resource whose availability is not affected by human activity. Examples of continuous resources are solar energy, the winds and tides, and the heat generated by the earth's interior. Each of these can be used to generate power without reducing the amount of the resource available for future generations.

For many non-renewable resources there are renewable or continuous resources that could be used instead. For example, alternatives to coal-fired electricity production include solar, wind, tidal and geothermal power (power generated by harnessing the earth's internal heat).

Because the supply of non-renewable resources is limited, they need to be conserved. The conservation of resources involves managing them carefully to maximise the benefits for present and future generations, while also protecting the environment. Renewable resources should be managed in ways that allow the resource to be used forever. However, this is not always what happens. Forests, for example, should not be exploited for their timber at a rate faster than the trees can regrow.

Resource distribution

Some natural resources (for example, air) are found everywhere, while others (for example, mineral ores, oil and coal) are found only in specific locations. In other words, they are unevenly distributed across the earth's surface.

When people do not have access to a natural resource they need, they can either use an alternative

Source 5.1.2 Robbing from future generations

resource or trade with other people, often in another country, to get the resource. Some natural resources are more common than others. The rarer the resource, the more it tends to cost.

ACTIVITIES

Remembering and understanding

1 Define what we mean by the term 'natural resource'.
2 Explain the difference between renewable, non-renewable and continuous resources.
3 Identify two outcomes of the uneven distribution of the earth's natural resources.

Applying and analysing

4 Construct a table similar to Source 5.1.1 and list three examples for each type of natural resource from Australia.

Evaluating and creating

5 a In pairs, brainstorm and list some strategies for reducing your school's use of non-renewable resources.
  b Share your ideas with the class.
6 Study Source 5.1.2.
  a Write down the idea that the cartoonist is trying to communicate in this cartoon.
  b Do you agree with the cartoonist? Explain.
  c What is an alternative viewpoint to that of the cartoonist?

The water cycle

A closed system

The **water cycle** is often referred to as a 'closed system' because the same water has been circulating since the earliest days of the planet. No water is added and none is taken away. Humans interact with the water cycle in many ways, some of which pollute the water and disrupt the cycle.

Source 5.2.1 The water cycle

Movement and change

Water is always moving and changing: it changes its form (ice and snow, liquid water or water vapour) and its location. Water can be used by humans, animals and plants during its journey through the cycle, but it always goes back to nature.

Since the beginning of industrial civilisation, the uses people have made of water have multiplied. The water cycle (or hydrological cycle) is shown in Source 5.2.1.

Evaporation
The process by which water is changed into water vapour. Water can evaporate from any moist surface, but about 84 per cent of the water vapour in the atmosphere comes from the oceans.

Transpiration
The process by which the water absorbed by plants passes into the atmosphere from the plant surface, mainly from the leaves

Condensation
The changing of water vapour into droplets of liquid water in the form of dew, fog or clouds

Precipitation
Any or all of the forms of water, whether liquid (e.g. rain) or solid (e.g. hail, snow), that fall from clouds and reach the ground
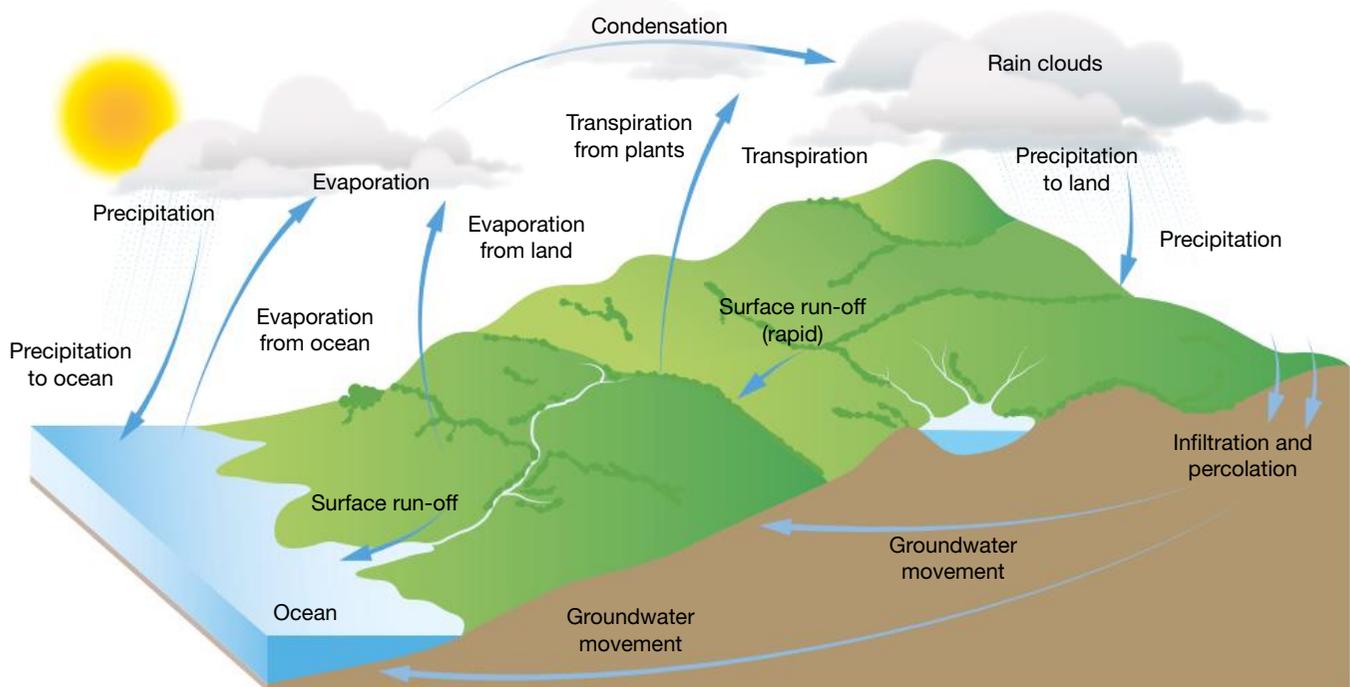
Infiltration
The movement of water from the land surface into the soil

Groundwater
Water beneath the earth's surface that fills pores between materials such as sand, soil and gravel

Groundwater movement
The slow underground movement of water. Subsurface water may eventually return to the surface (e.g. as a spring) or seep into the oceans, lakes or river channels.

Run-off
The movement of surface water down slopes

Source 5.2.2 A snow-making machine, or 'snow gun', Thredbo, New South Wales

Human impacts

Humans interact with the water cycle in a variety of ways, by:

- building structures, such as levee banks, to protect farmland and settlements from flooding
- storing water in dams in areas where rainfall is unreliable
- using canals and pipelines to transport water from one area to another
- sinking wells and bores to extract groundwater
- using water and gravity to generate hydro-electricity
- using large bodies of water, such as oceans or lakes, to dump sewage and pollutants
- clearing land for agriculture, mining and urban development
- creating artificial precipitation; for example, snow-making (see Source 5.2.2).

Precipitation

Definition of precipitation

Precipitation is the term given to any form of moisture that reaches the earth's surface from the atmosphere. Rain, hail, snow and dew are all forms of precipitation.

Rain

Rain occurs when growing cloud droplets become too heavy to remain in the cloud and, as a result, fall towards the earth's surface. Rain can also begin as ice crystals that join together to form large snowflakes. As the falling snow passes through the freezing level into warmer air, the flakes melt to become raindrops.

The smallest raindrops reaching the earth's surface must be over 10 times the size of the average cloud droplet. Coalescence is the merging of the smallest cloud droplets to create larger droplets of water. These larger droplets then fall as rain or snow.

Source 5.3.1 A storm bringing rain to farmland in Carnamah, Western Australia.

Hail

Hail is made up of hailstones, or large, frozen raindrops that are produced in intense thunderstorms. As water droplets rise rapidly in a storm they form ice pellets that continue to grow until they begin to fall under the force of gravity. On reaching the bottom of the cloud, some of these ice pellets are carried back to the top of the cloud. As the ice pellets once again fall through the cloud, another layer of ice is added and the hailstone grows even larger. Once the hailstone becomes too heavy to be supported, it falls out of the cloud towards the earth's surface. The hailstone reaches the ground as ice since it does not spend enough time in the warm air to melt before it lands.

Snow

Snowflakes originate as tiny ice crystals in clouds where the temperature is at or below freezing point (0°C). As an ice crystal rises and falls within a cloud it grows by combining with other ice crystals, and takes on the six-sided shape of a snowflake, shown in Source 5.3.2. When the snowflake becomes heavy enough, it falls towards the ground. If the temperature in the lower atmosphere and at ground level is at or below 0°C, snow will gather. In places where the temperatures remain mostly below zero, fallen snow is compressed to form an ice sheet or a glacier, and can sometimes be stored in this form for thousands of years.

Source 5.3.2 The snowflake is made up of hundreds of tiny ice crystals.

Dew

Water vapour in the air will form droplets known as dew (see Source 5.3.3) when the air comes into contact with a cold surface. The temperature at which this occurs is known as the dew point. When temperatures are low enough, dew becomes ice and is called frost.

Source 5.3.3 Dew forms when moist air comes into contact with a cold surface.

Rising air and precipitation

Under normal conditions, the temperature of the air decreases as altitude increases. Cold air cannot hold as much moisture as warm air. Any water vapour that the rising air cannot hold condenses into water droplets (or ice crystals) and forms clouds. Warm, moist air is pushed up into the atmosphere and forms rain in three ways: through frontal and orographic uplift, and convection.

Did you know?

Approximately 505 000 cubic kilometres of water fall as precipitation each year; 398 000 cubic kilometres of this falls over the oceans. Given the earth's surface area, this means that the globally averaged annual precipitation is 990 millimetres.

a

Direction of cold frontal movement

Warm, moist air is forced to rise, resulting in cloud formation and rain

Frontal surface

Denser, colder air moves in and under lighter, warmer air

Heavy rain as front is passing

Cold air mass

b

Direction of warm frontal movement

Warm air is forced to rise

Warm air mass

Cold air

Frontal surface

Light, prolonged rain ahead of passing front

Source 5.3.4 Frontal rainfall associated with the passage of (a) a cold front and (b) a warm front

Frontal rainfall

Frontal rainfall occurs when a cold and a warm air mass meet. The point at which they meet is known as a front.

When a cold air mass meets a warm air mass, the cold air, which is heavier or denser than the warm air, forces the warm air to rise. As the warm air is pushed upwards, it cools.

When the air rises and is no longer able to hold all its water as water vapour, it begins to condense and form clouds. This often results in heavy precipitation associated with the passing of storms, as shown in Source 5.3.4a.

When a warm air mass meets a cold air mass, the warm air mass (which is lighter and less dense than the cold air) rises above the denser and heavier cold air mass. This resulting rainfall extends over a wide area, as shown in Source 5.3.4b.

Orographic rainfall

Orographic rainfall (shown in Source 5.3.5) occurs when a moist body of air is forced to rise by a mountain range. As the air rises, it cools. The water vapour then begins to condense and form clouds, and finally falls as rain or snow. Only a little rain makes it beyond the mountain range, producing what is called the rain shadow effect.

Source 5.3.5 Orographic rainfall

Orographic rainfall occurs when a moist body of air is forced to rise by a mountain range

Rising air cools and condenses

Rain shadow

Precipitation

Little rain falls inland

Cool, dry air; warms as it descends

Orographic uplift

Mountain range

Warm, moist air; cools as it rises

Warm, dry air

Desert

Forest
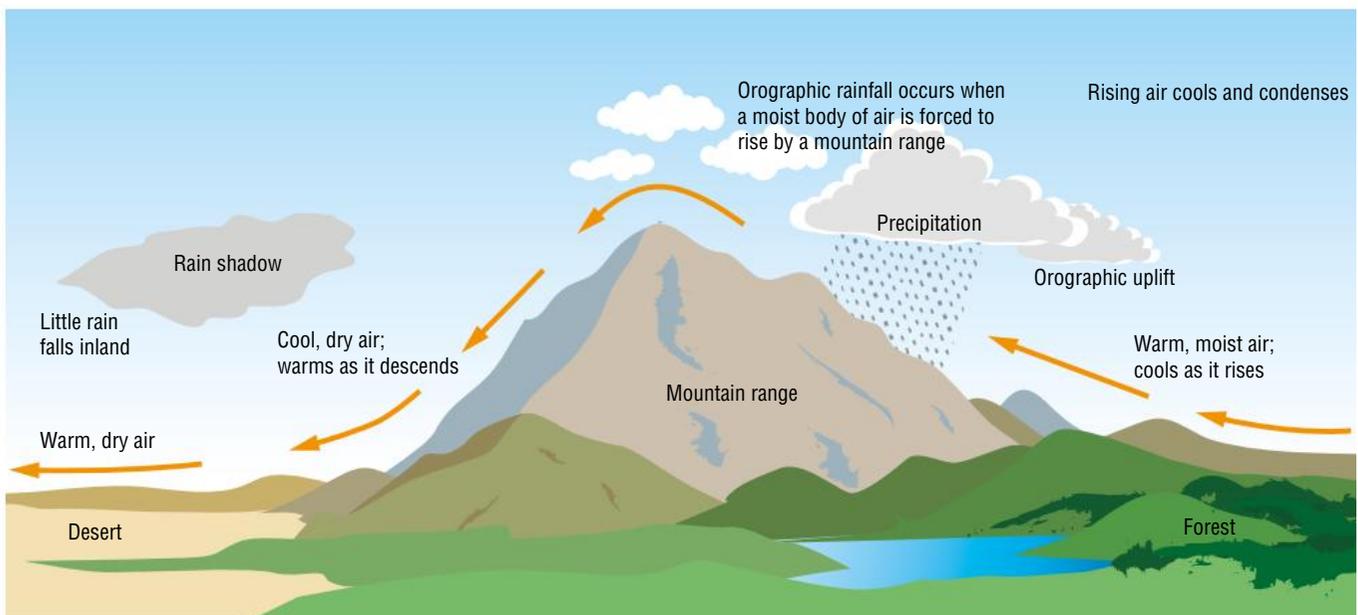
Convectional rainfall

Convectional rainfall, outlined in Source 5.3.6, occurs when the energy of the sun heats the earth's surface and causes water to evaporate (changes it from a liquid to a gas). Warm, moist air then rises, cooling as it does so. Eventually, the air reaches a point called the **condensation level** (or dew point), where it has cooled to such an extent that the water vapour condenses and turns back to a liquid form. This process of condensation high in the atmosphere results in the development of clouds. As the clouds continue to grow, the weight of the water droplets increases, eventually leading to precipitation.

Condensation

Precipitation

Warm updraft   Cold downdraft
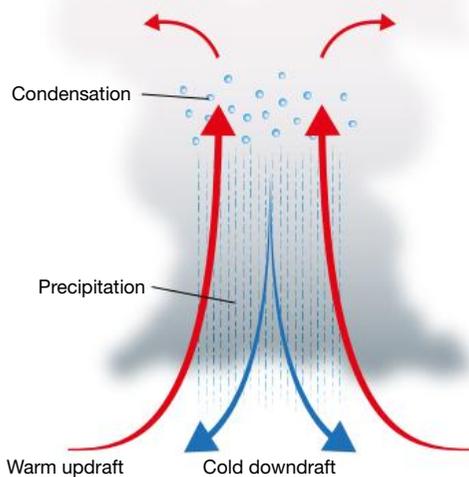
Source 5.3.6 Convectional rainfall

Rainfall in Australia

The topography of the land, distance from the Equator and presence of ocean currents all influence the location of rainfall in Australia. Source 5.3.7 shows the types of rainfall that different parts of Australia experience. Note that some locations experience more than one type of rainfall.

Darwin

Great Sandy Desert

Alice Springs

Great Dividing Range

Sturt Stony Desert

Brisbane

Kati Thanda–Lake Eyre

Great Victoria Desert

Darling River

Great Dividing Range

Perth

Adelaide

Sydney

Canberra

N

Murray River

Melbourne

☐ Convectional rainfall
☐ Cold frontal rainfall
☐ Orographic rainfall

0   200   400 km

Hobart
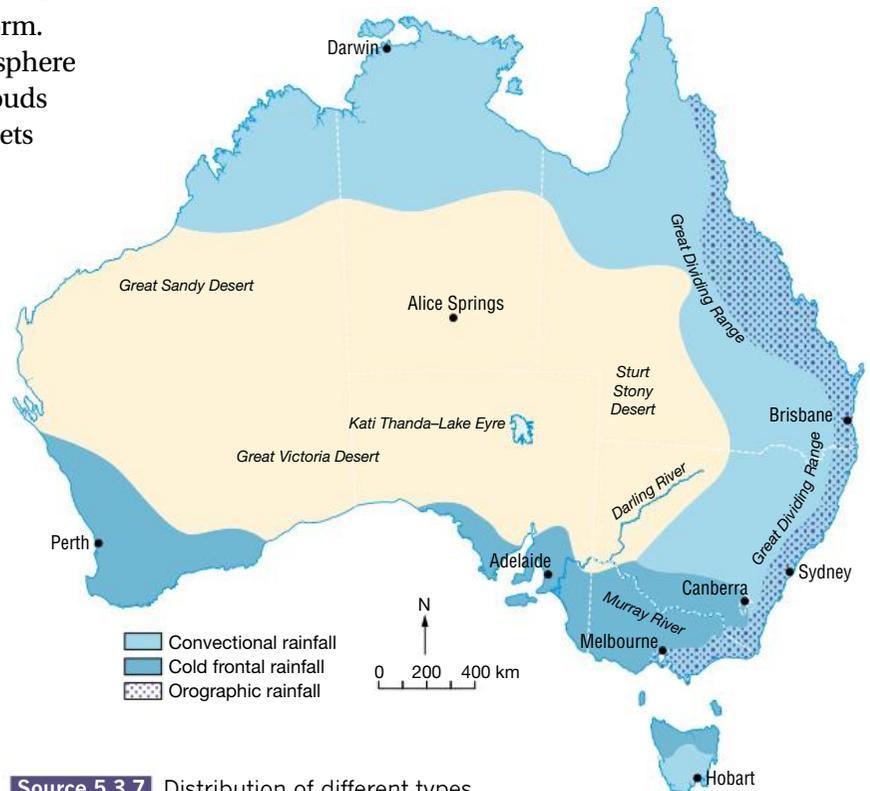
Source 5.3.7 Distribution of different types of rainfall in Australia

ACTIVITIES

Remembering and understanding

1 List the forms of precipitation.
2 Describe the conditions under which rain develops.
3 Explain the process of coalescence.
4 Explain how dew forms.
5 Explain why rising air is important to the process of precipitation.

Applying and analysing

6 Construct an annotated sketch or flow chart explaining convectional rainfall.
7 Draw a raindrop, a hailstone and a snowflake. Next to each, describe the conditions required for its formation and explain how it forms.
8 Study Source 5.3.4. Outline how precipitation differs depending on whether it is associated with the passage of a cold front or a warm front.
9 Study Source 5.3.7, then complete the following tasks.
   a Find your present location and name the type of rainfall that occurs there.
   b Describe the locations where the three different types of rainfall are experienced in Australia.
   c Name the type of rainfall that is not found in Australia.

Distribution of water

The world's water

The earth's oceans hold 97 per cent of the world's surface water. The other 3 per cent of the earth's water is fresh water. The amount of fresh water is more than enough to meet people's needs, but it is not evenly distributed around the world.

Location of fresh water

Of the world's store of fresh water, 79 per cent is stored in glaciers and the polar ice caps. A further 20 per cent is stored as groundwater, soil moisture, swamp water and permafrost. Just 1 per cent is easily accessible fresh water. Source 5.4.1 shows the distribution of the earth's water.

While the amount of available fresh water may seem small, the total amount is far greater than the earth's population requires. Unfortunately, it is not evenly distributed across the earth's surface. Some areas are critically short of water while others have plenty.

Water storage

The length of time that water is stored varies. Source 5.4.2 shows the estimated time that water spends in storage in the world's water resources.

Water loss

Source 5.4.3 shows the amount of precipitation (in cubic kilometres) for each continent, and the percentage of that water lost to evaporation or that becomes **run-off** and flows into streams, creeks and rivers, or underground, to become groundwater. Factors that influence the type of water loss are:

- **climate**—warm or hot climates will have greater evaporation than cooler climates
- **vegetation**—types of plants and plant cover; for example, there will be more evaporation in the grassy paddocks of a sheep farm than in denser vegetation that holds moisture
- **soil type**—some soils are more permeable than others (they allow water to soak in)
- **topography** (shape of the land)—steep areas will have more run-off than flatter areas

- **location**—hard surfaces, such as roads and pavements, lead to greater evaporation than unpaved surfaces, so there is greater evaporation in cities and towns than in rural locations.

All water
Oceans 97%
Fresh water 3%

Fresh water
Ice caps and glaciers 79%
Groundwater 20%
Easily accessible surface fresh water 1%

Easily accessible surface fresh water
Soil moisture 38%
Lakes 52%
Atmospheric water vapour 8%
Accessible water in plants 1%
Rivers 1%
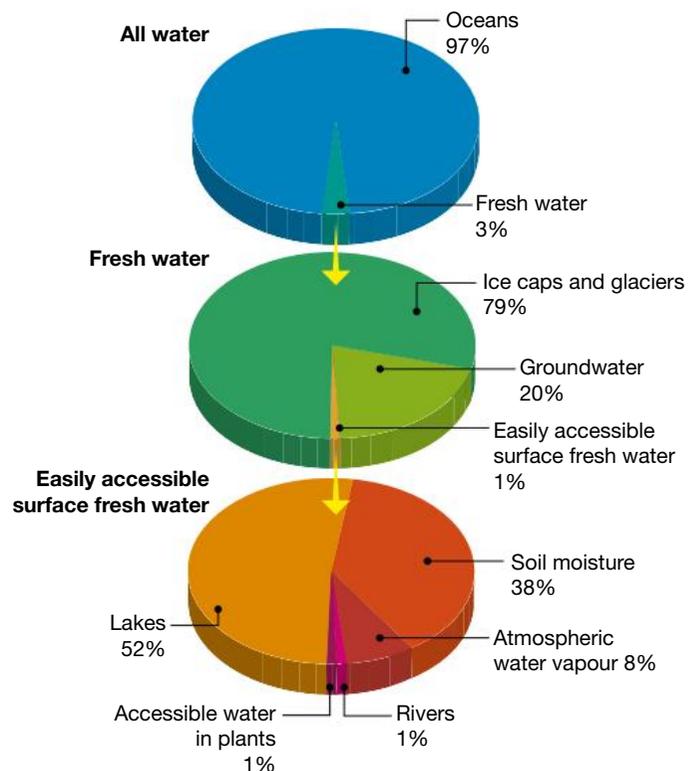
Source 5.4.1 The global distribution of the earth's water resources

Water resource	Time held in storage
Biospheric water*	1 week
Atmospheric water	1.5 weeks
River channels	2 weeks
Soil moisture	2 weeks to 1 year
Swamps	1 to 10 years
Lakes and reservoirs	10 years
Ice caps and glaciers	1000 years
Oceans and seas	4000 years
Groundwater	2 weeks to 10 000 years

* Water held in animals and plants

Source 5.4.2 Estimated time in storage of the world's water resources

Precipitation (km³) **Evaporation** (%) **Run-off** (%)

North America
18 300 km³   55%   57%

Europe
8290 km³   65%   80%

Asia
32 200 km³   55%   45%

South America
28 400 km³   45%   43%

Africa
22 300 km³   35%   20%

Australia and Oceania
7080 km³   65%   35%
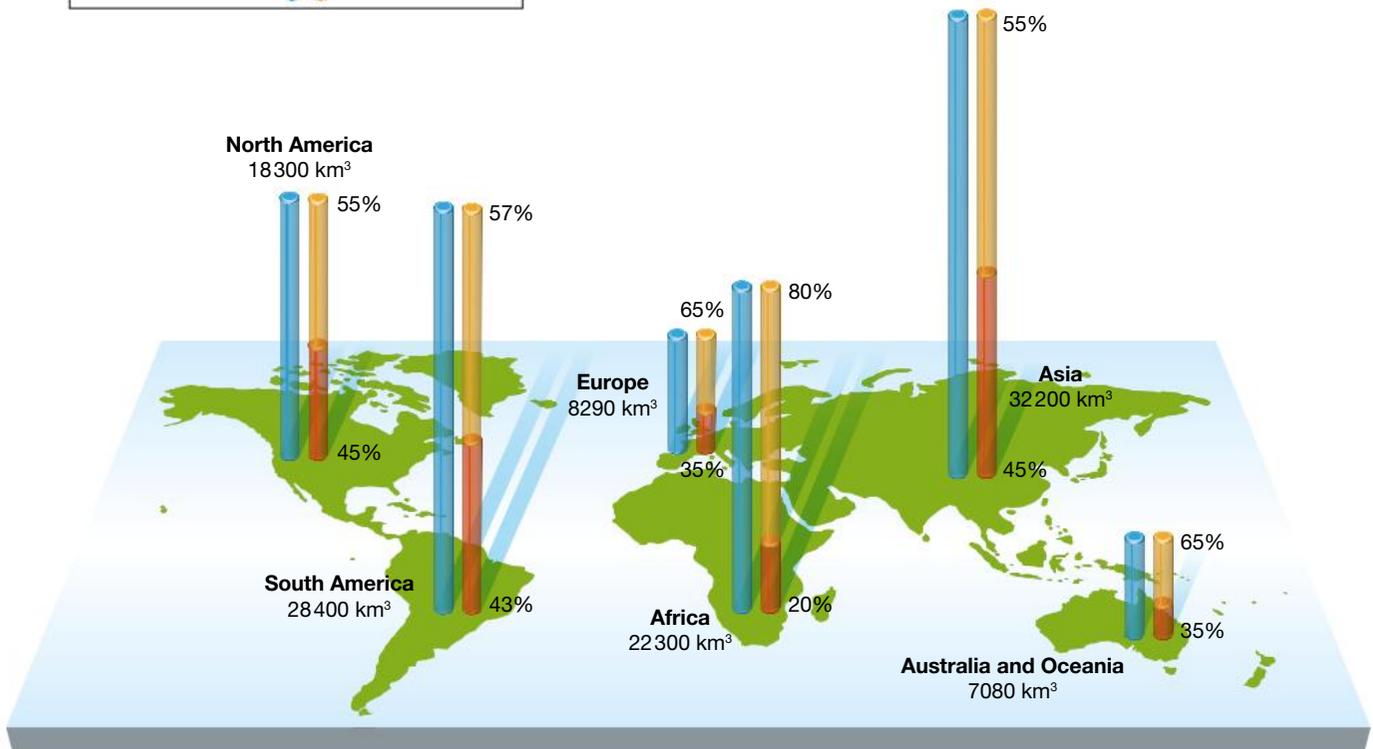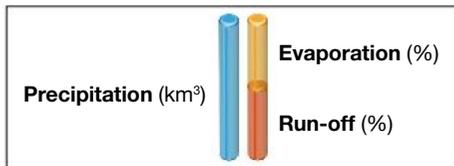
Source: UNEP/GRID-Arendal

Source 5.4.3 Annual average precipitation, evaporation and run-off by region

ACTIVITIES

Remembering and understanding

1 What percentage of the earth's fresh water is stored on the surface in storages such as rivers, wetlands and lakes?

2 Study Source 5.4.1 and then answer the following questions.
   a State the proportion of the earth's water that is fresh (i.e. not salty).
   b State the proportion of the earth's fresh water that is easily accessible. Of this, how much is stored as soil moisture?
   c State the amount of the world's fresh water that is stored as groundwater.

Applying and analysing

3 Study Source 5.4.2 and present the information in the table in a graphic form.

4 Study Source 5.4.3, then answer the following questions.
   a Which continental landmass has the largest annual average volume of run-off?
   b What is the average annual volume of run-off on the driest of the continental landmasses shown on the map?
   c By how much does the average annual volume of run-off in South America exceed that in North America?
   d Which region receives the greatest precipitation?
   e Which region has the least precipitation?
   f Which region has the greatest rate (percentage) of evaporation?
   g What are the implications of this data for agriculture in Africa?

Surface water

Catchments

When precipitation falls to the ground, water moves over the land and finds its way into streams or down into the ground. While some of this water evaporates into the atmosphere, and some is stored as groundwater, the rest is slowly discharged into rivers, creeks and lakes. This is why rivers continue to flow even when there is no rainfall or precipitation. A **catchment**, or drainage basin, is the area of land where the surface water meets, as a result of the landscape. Source 5.5.1 shows a catchment in a mountainous area. It also shows a **watershed** (also known as a drainage divide) separating neighbouring catchments. In flat areas, the watershed may be difficult to identify.
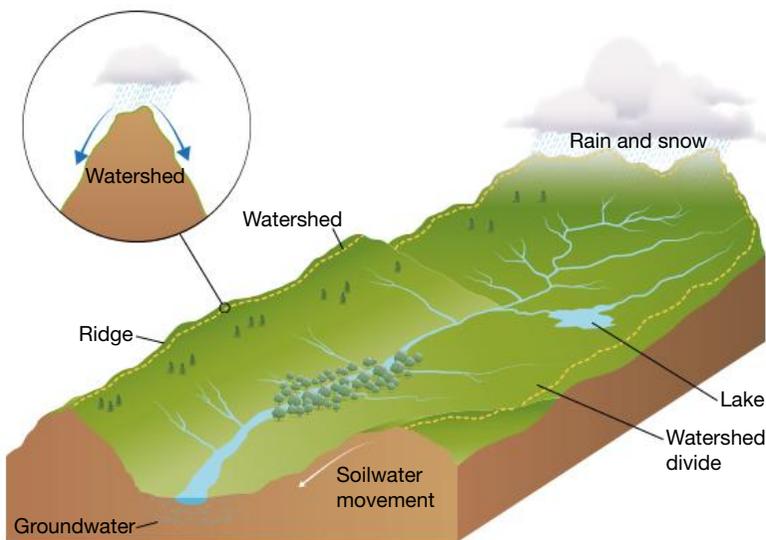
Source 5.5.1 A catchment and dividing watershed. A watershed is the point at which precipitation falls and flows into either one of two neighbouring water catchments.

Catchment sizes

Catchments vary greatly in the area they cover. They range from small urban or coastal catchments to catchments covering thousands of square kilometres. The Amazon River Basin in South America covers approximately 7 050 000 square kilometres. The Murray–Darling catchment covers parts of three states and an area of 1 061 469 square kilometres, or approximately one-seventh (14 per cent) of the total area of the Australian continent. In comparison, Perth's Swan River catchment covers 2090 square kilometres (see Source 5.5.2), while the catchment area of the Swan River and Avon River combined covers 126 000 square kilometres.

The importance of catchments

In a river catchment (or drainage basin), soil, plants, animals and water all function together. Any change affecting one of these elements will have an impact on the others. The protection and management of catchments is important because they are where all our food is grown and where our drinking water comes from. Catchments are therefore part of our life support systems.
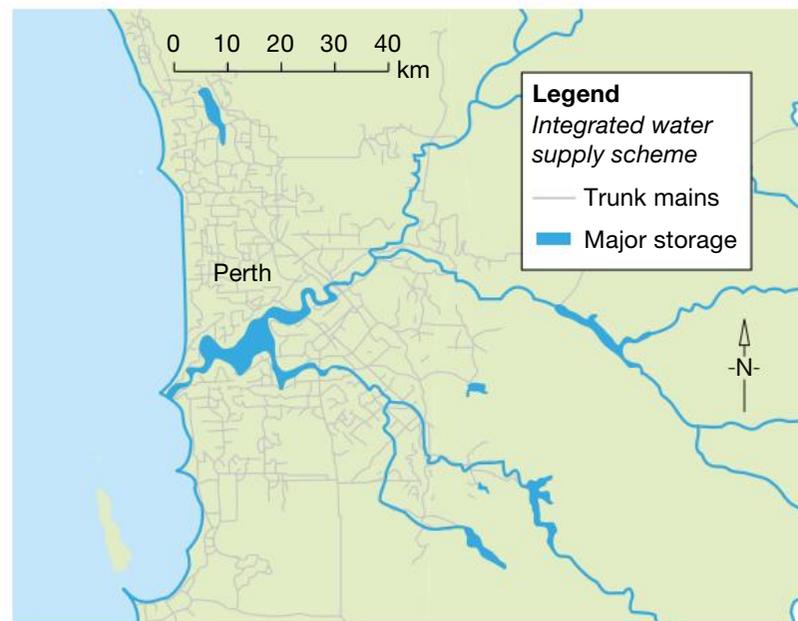
Source 5.5.2 The Swan River catchment area, the major water storage for Perth, highlighting Perth's catchment region.

Storing water

Because Australia's rainfall is so unreliable and variable, water run-off needs to be collected and stored in dams, moved to where it is needed and used with care in drier times. Australia has 447 large dams and, as Source 5.5.3 shows, they store nearly 84 000 gigalitres (GL) of water—equivalent to 168 Sydney Harbours. This water is used mainly to meet urban needs and for irrigation, flood mitigation and the production of hydro-electricity (see Source 5.5.4). Australia also has several million farm dams, which are estimated to contain 9 per cent of all stored water.

Source 5.5.3 Storage capacity of large dams by state or territory

State or territory	Storage capacity (GL)
Australian Capital Territory	120
New South Wales	24 629
Northern Territory	280
Queensland	10 657
South Australia	258
Tasmania	23 652
Victoria	12 109
Western Australia	12 148
Australia	83 853

Source: National Water Commission, 2012

The biggest 'store' of water is Australia's vast underground aquifers. These aquifers provide 25 780 GL of groundwater a year. This water is suitable for farming and domestic use, and for irrigated agriculture.

Source 5.5.4 The 140-metre-high Gordon Dam, on Tasmania's Gordon River, is the tallest dam in Tasmania. It stores water for the production of hydro-electricity. The associated Gordon Power Station is Tasmania's largest power station.

ACTIVITIES

Remembering and understanding

1 Explain the difference between a catchment and a watershed.
2 Discuss why catchments are important.
3 Why do rivers continue to flow even when it has stopped raining?

Applying and analysing

4 Study Source 5.5.3. Explain why the amount of stored water varies from state to state.
5 Choose one dam in Western Australia. Write a list of eight dot points about its main features. Make sure to include information about its capacity, catchment area and size.

Evaluating and creating

6 We all have an important role to play in protecting and managing our catchments.
   a In small groups, brainstorm two lists of direct and indirect ways you and people in your community interact with the land and water resources in your catchment area (e.g. clearing land for housing, growing crops, waste disposal, watering the garden, fishing and camping).
   b Determine some simple changes people can make to their interactions that will help better maintain the catchment area. Create a poster to encourage these changes.

Groundwater

The source of groundwater

When precipitation reaches the earth's surface, some of it flows into streams or lakes, some of it is used by plants, some evaporates and returns to the atmosphere, and some soaks into the ground and becomes groundwater.

Groundwater

Groundwater is water found below the earth's surface in soil pore spaces and cracks in rock structure. The layer of soil and rock in which the water is found is called an **aquifer**. The depth at which soil becomes completely saturated with water is called the **water table**, as shown in Source 5.6.1.

Throughout the world, groundwater is pumped or drawn from wells drilled or dug down into aquifers. This water is used for agricultural, domestic and industrial purposes. If it is used at a rate that is slower than the rate at which the aquifer can be replenished (or recharged), groundwater can sustain communities indefinitely. If groundwater is used at a rate faster than the rate of recharge, the water table falls and collecting water becomes more difficult.

Today, an estimated 2.2 billion people, or one-third of the world's population, rely on groundwater as their main source of water. In rural India, 50 per cent of **irrigation** water and 80 per cent of drinking water come from underground through three million hand-pumped wells. In Europe, 75 per cent of the water used comes from aquifers. The next biggest users are the United States (51 per cent) and Asia (32 per cent). Twelve cities of more than 10 million people—including Bangkok, Shanghai, London and Kolkata—rely on underground water reserves. Fifteen per cent of the water used in Australia comes from groundwater sources (see Source 5.6.2).

Water surrounds surfaces of rock particles
Creviced rock   Gravel
Air   Approximate level   Air
      of water table
All openings below water table full of groundwater

Precipitation
Evaporation
Infiltration
Groundwater flow
Water table
Underlying impervious rock

a

Precipitation
Evaporation
Toxic spill
Tank
Groundwater flow direction
Groundwater flow
Water table
Underlying impervious rock

b

Source 5.6.1 (a) Groundwater in natural conditions; (b) exploited groundwater resources
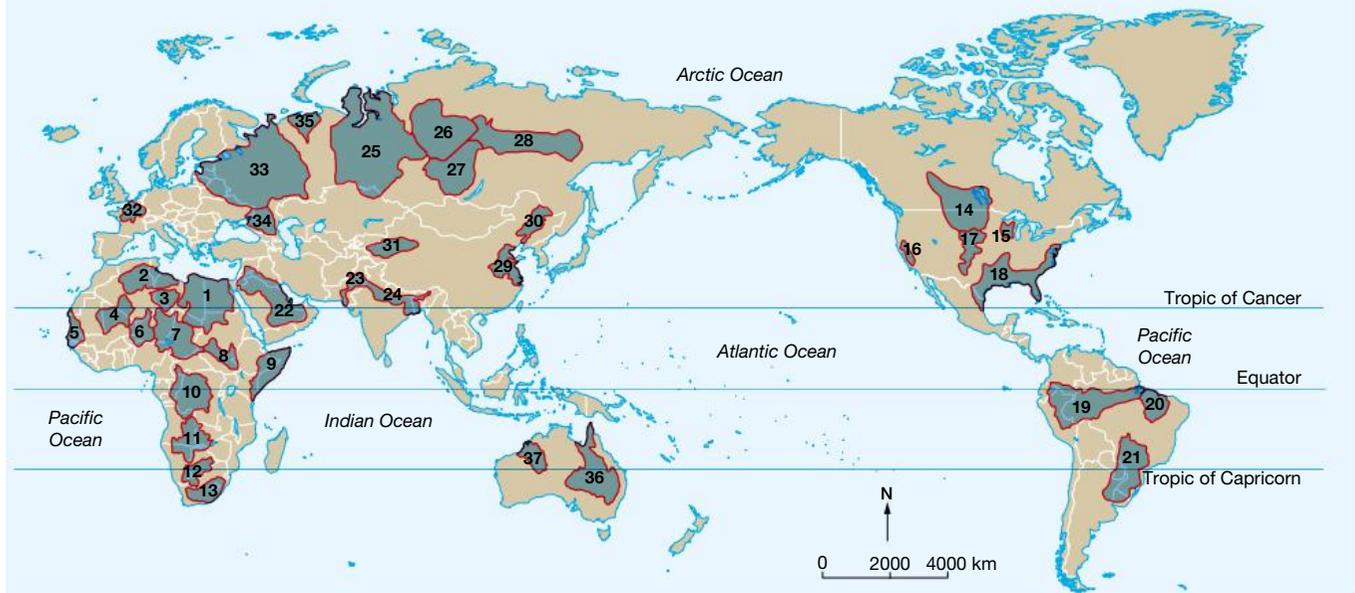
Large aquifer systems

1 Nubian Aquifer System	11 Northern Kalahari Basin
2 North-west Sahara Aquifer System	12 South-east Kalahari Basin
3 Murzuk–Djado Basin	13 Karoo Basin
4 Taoudeni–Tanezrouft Basin	14 Northern Great Plains Aquifer
5 Senegalo-Mauritanian Basin	15 Cambro-Ordovician Aquifer System
6 Iullemeden–Irhazer Aquifer System	16 California Central Valley Aquifer System
7 Chad Basin	17 High Plains–Ogallala Aquifer
8 Sudd Basin	18 Gulf Coastal Plains Aquifer System
9 Ogaden–Juba Basin	19 Amazonas Basin
10 Congo Intracratonic Basin	20 Maranhao Basin

21 Guarani Aquifer System	31 Tarim Basin
22 Arabian Aquifer System	32 Parisian Basin
23 Indus Basin	33 East European Aquifer System
24 Ganges–Brahmaputra Basin	34 North Caucasus Basin
25 West Siberian Artesian Basin	35 Pechora Basin
26 Tunguss Basin	36 Great Artesian Basin
27 Angara–Lena Artesian Basin	37 Canning Basin
28 Yakut Basin	
29 North China Plain Aquifer System	
30 Songliao Basin	

Source 5.6.2 The world's large aquifer systems

Groundwater as a renewable resource

If the rate of groundwater extraction is equal to, or less than, the rate at which it is replenished, groundwater can be classified as a renewable resource.

Advantages of groundwater

Groundwater is a popular source of water in many parts of the world. It has the following advantages:

- It is a reliable source of water because it is not affected by drought (at least in the short to medium term).
- It can be accessed in the place where it is needed. There is no need for expensive infrastructure such as pipes to transport water.
- Because the quality of groundwater is usually high, the expense of treating water to a standard fit for human consumption is minimised.

Threats to groundwater supplies

There are a number of threats to the quantity and quality of groundwater. These include the following:

- Excessive pumping from an aquifer can allow salt water to seep in and pollute the groundwater. This is called saltwater intrusion.

- Overuse can cause the water table to drop below the base of a well. The well then needs to be dug deeper or the settlement that relies on the well may have to be abandoned.
- Excessive withdrawals of groundwater can cause the ground above the aquifer to subside (drop).
- The aquifer can become polluted by toxic chemicals, including pesticides and fertilisers. These can enter the food chain, where they can cause birth defects and other serious medical conditions.

Solutions

Different ways of increasing the water supply are:
- extracting more groundwater
- building dams and reservoirs

Extracting groundwater

Most aquifers are a renewable resource unless the groundwater they contain either becomes contaminated or is removed faster than it can be refilled by rainfall. At present, water tables in many places are falling because water is being withdrawn faster than the rate of natural recharge.

A bore taps water from the Great Artesian Basin.

Australia: The Great Artesian Basin

The Great Artesian Basin is the largest and deepest confined aquifer in the world. It covers an area of 1.7 million square kilometres, or 23 per cent of the Australian continent (see Source 5.6.3). The basin is 3000 metres deep in places and is estimated to contain 64 900 cubic kilometres of groundwater.

Water infiltrates the exposed sandstone aquifers along the western slopes of the Great Dividing Range, and is confined within the aquifers by impermeable layers of rock (layers that water cannot penetrate). For the most part the trapped water flows towards the south-west. In the northern section of the basin, however, some water flows towards the north-west and north (see Source 5.6.3).

Natural discharge from the Basin occurs at springs—the points at which groundwater flows at the surface. These springs helped to sustain groups of Aboriginal people for tens of thousands of years and are a valuable resource for wildlife.

Because the aquifer is confined between impermeable layers of rock, it is held under pressure. When a bore is drilled into an aquifer, the pressurised water rises to the surface. When water flows from the bore without assistance, the bore is described as an 'artesian' bore. If the water has to be pumped to the surface, the bore is described as 'subartesian' (see Source 5.6.4).

Other large aquifers include the Ogallala Aquifer in the United States; the Guarani Aquifer underlying parts of Argentina, Brazil, Paraguay and Uruguay; the Arabian Aquifer System in Saudi Arabia and the North-west Sahara Aquifer System in Africa.

Source 5.6.3 Location of Australia's Great Artesian Basin
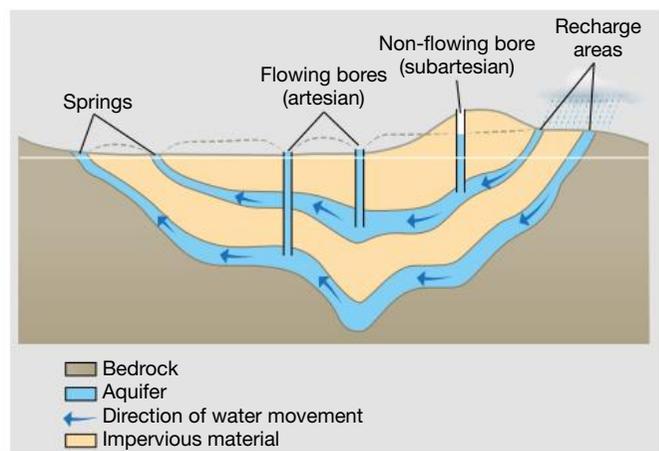
Source 5.6.4 Cross-section of the Great Artesian Basin
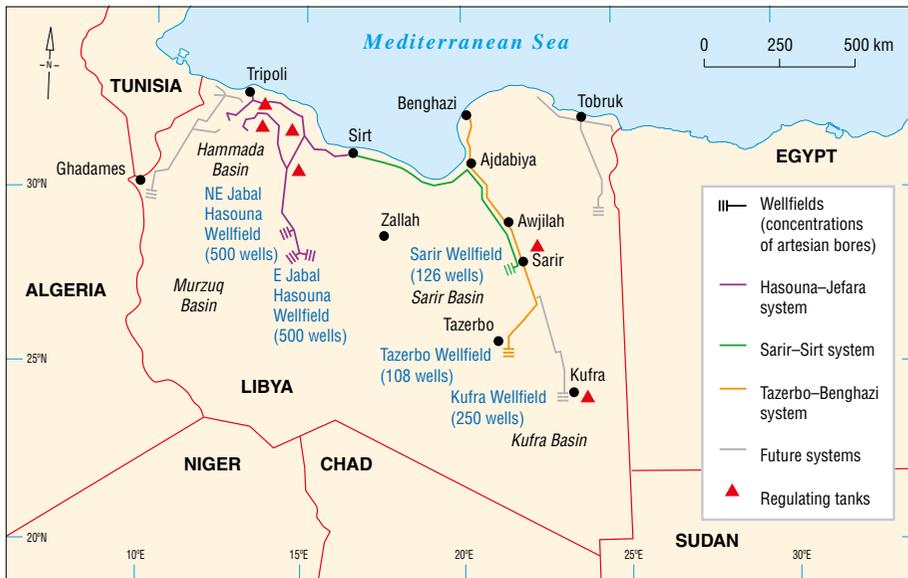
Source 5.6.6 Libya's Great Man-Made River Project. Libya is a hot, dry country. The rainfall that does fall is limited to a narrow coastal zone. Seventy per cent of Libya's five million people live in the coastal cities of Tripoli and Benghazi.
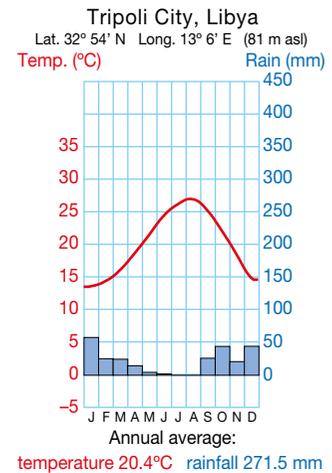
Source 5.6.7 Climate graph for Tripoli

Libya: The Great Man-Made River Project

While drilling for oil in Libya in the 1960s, engineers discovered huge reserves of water in aquifers beneath the Sahara Desert. This vast store of water had accumulated over some 70 000 years, much of it at a time when rainfall in northern Africa was much higher than it is now (see Source 5.6.7).

To develop its economy, Libya needed to use this water. In the 1970s, the country made huge profits by exporting oil to the countries of the developed world. Much of this money was invested in the Great Man-Made River Project. Construction started in 1983 and is still in progress. When completed, the project will improve access to water for over five million people and will irrigate dry areas so that the country can become self-sufficient in food production. The project will also generate electricity, which will help to promote industrial development.

To extract the water, more than 1300 wells, most over 500 metres deep, have been dug, and a network, some 3500 kilometres long, of pipelines 4 metres in diameter has been partially built and is still under construction. Three major reservoirs (at Ajdabiya, Sirt and Benghazi) store 35 gigalitres of water. The project has made 135 000 hectares of land available for production. Large quantities of fruit and vegetables, as well as 270 000 tonnes of crops and 760 000 tonnes of fodder, are now grown on irrigated land.

ACTIVITIES

Remembering and understanding

1. Explain how groundwater is stored below the earth's surface and used around the world.
2. Describe the threats to groundwater resources.

Applying and analysing

3. Study Source 5.6.1. Outline the impact that water extraction can have on groundwater. Explain how a toxic spill in one part of the catchment can affect people's drinking water in another.
4. Study Source 5.6.4.

   a. Describe the flow of water within the Basin and identify the area where aquifer recharge takes place.
   b. Estimate the greatest distance the water travels from the intake area.

Evaluating and creating

5. 'The Great Artesian Basin is more important to South Australia than New South Wales, Queensland and the Northern Territory'. Discuss.
6. Select one of the other aquifers listed in 'Australia: The Great Artesian Basin'. Undertake internet research. Write a report that is similar in structure. Remember to include a map.

Variability of water resources

Water availability: Australia

Australia's rainfall is unreliable and highly variable. Average annual rainfall is 469 millimetres per year (see Source 5.7.1). While this is not very low, only 12 per cent of the water runs off into rivers. The remaining 88 per cent either evaporates or soaks into the ground.

In the more populated south-eastern states, water in dams, rivers and lakes is being used at a high rate. In response, all Australians, both in the city and in rural areas, are being encouraged to use less water. Strategies that encourage people to use less water and to use water more wisely include increasing the price of water and promoting water recycling and water trading.
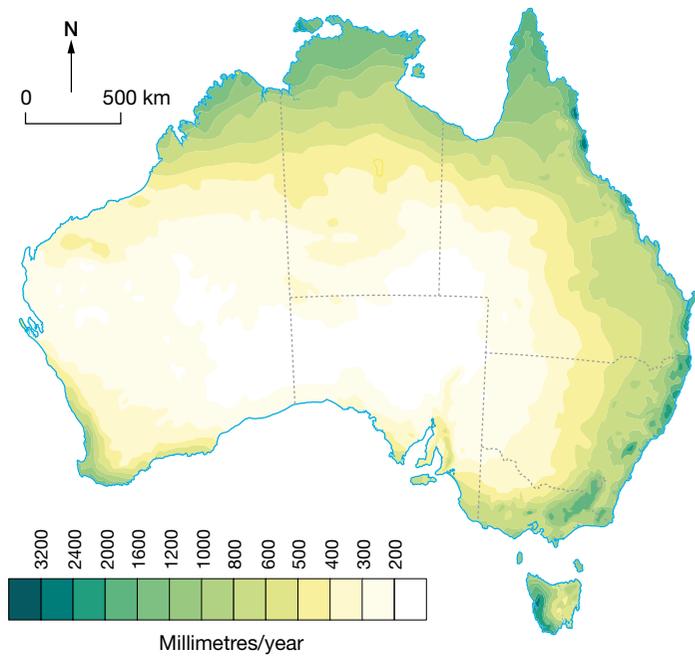
Source 5.7.1 Average annual rainfall in Australia
Source: Bureau of Meteorology

In northern Australia, a large number of river systems have not been dammed. This means that the wetlands, rainforests, eucalypt savannas and native grasslands associated with these river systems do not lose access to a water supply. As Source 5.7.2 shows, nearly two-thirds of Australia's water run-off occurs in this northern region. However, rainfall in northern Australia is highly seasonal, with heavy rains in summer and little rain in winter. The water that falls there is a potential resource, but it would have to be stored and transported to where it is needed. Building dams and pipelines to transport water would be very expensive.
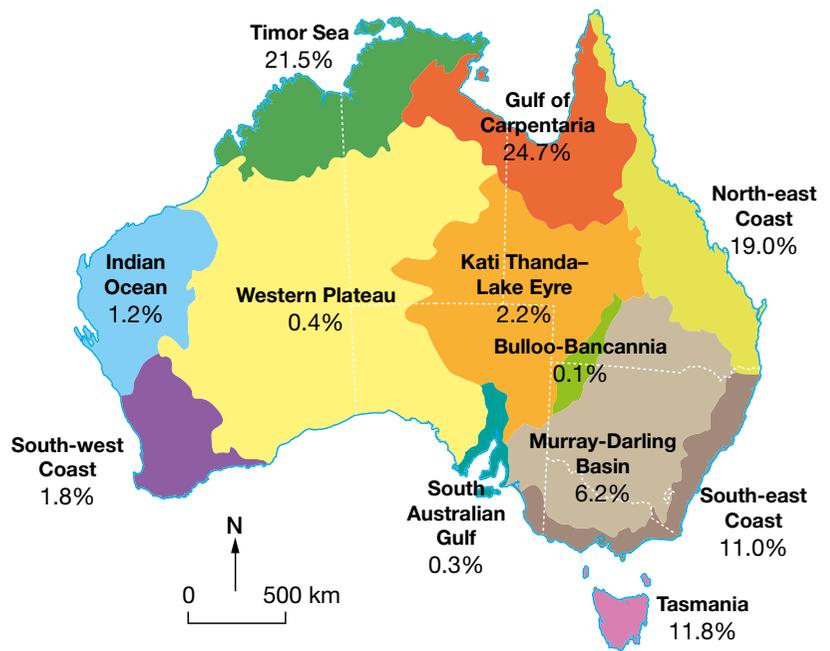
Source 5.7.2 Rainfall run-off by major drainage division
Source: *Australian Natural Resources Atlas*

Water availability: Africa

Water availability varies throughout Africa. The tropical central and western areas have greater rainfall and therefore greater water availability. In the northern, southern and eastern regions of Africa, water is more scarce.

In regions where rainfall is less than 400 mm per year, there is very little run-off into rivers and dams. These regions have to depend more on groundwater for access to fresh water. If the groundwater crosses country borders it can cause disputes over who owns the water and who should have access to it. When the population grows rapidly and urban and industrial development occurs as it has in Africa, water availability becomes even more of a problem.

As a result of climate change, water availability throughout the continent is becoming even more variable. Rainfall in dry areas is declining and the occurrence of floods and droughts is increasing. In 2015–16, Southern Africa, including Zimbabwe, Botswana, Mozambique and Madagascar, have had the driest seasons for 35 years. South Africa's annual rainfall of 403 mm in 2015 was the lowest since recording began in 1904.

Scientists predict that in the future water availability in Africa will be even more variable. One study has forecast abnormal weather events to double in frequency by the end of the century. Source 5.7.3 shows the predicted changes to rainfall throughout Africa by the end of the 21st century.

Predicted change in African rainfall

- Drop by 10–20%
- Drop by up to 10%
- Increase by up to 10%
- Increase by 10–20%
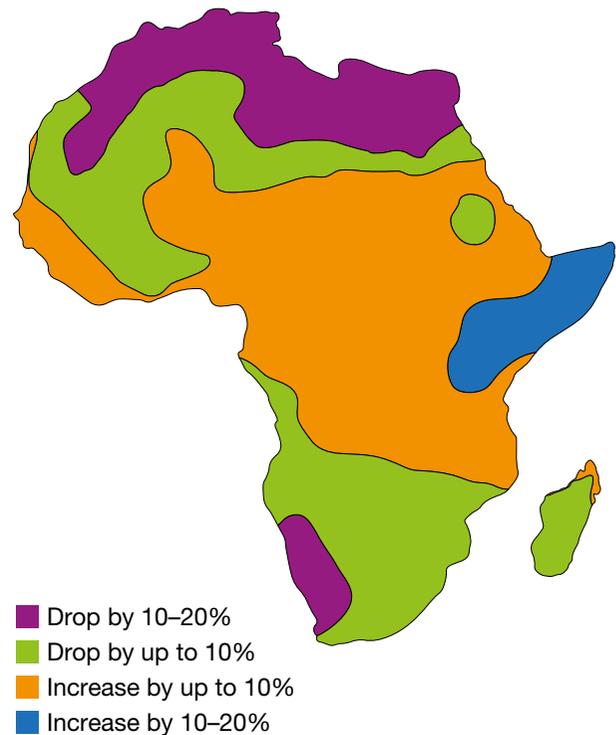
Source 5.7.3 Rainfall changes predicted to occur throughout Africa during the 21st century

ACTIVITIES

Remembering and understanding

1. State the factors that complicate the management of water resources in Australia.
2. State why so little run-off finds its way into Australia's rivers.
3. Explain why the run-off from Australia's northern rivers is best described as a *potential* resource for use in other parts of Australia.
4. Identify Australia's principal stores of water.

Applying and analysing

5. Study Source 5.7.1. Describe the general pattern of annual rainfall in Australia.
6. Study Source 5.7.2. Identify the drainage divisions with the highest and lowest run-off rates. What are the implications of this for the management of Australia's water resources?

Water scarcity

Types of scarcity

Water scarcity occurs when the demand for water exceeds the amount available. Water scarcity can lead to water stress. **Water stress** is the negative effect of limited water supply on people and environments. Africa has the largest number of water-stressed countries. Most of these are found in North Africa.

Water scarcity can occur in areas where there is plenty of rainfall. The quality of the water available determines whether there is enough to meet the needs of households, farmers, industry and the environment.

Source 5.8.1 shows water availability in the world. Approximately 1.2 billion people, or almost one-fifth of the world's population, live in parts of the world where water scarcity is already a problem, and 500 million people are approaching that situation. Another 1.6 billion people face water shortages due to a lack of infrastructure to extract water from rivers and aquifers. Rapid population growth, urbanisation and increases in water use by households and industry are making the situation worse. The total amount of available fresh water is changing due to climate change, which is causing glaciers to recede, river flows to reduce and lakes to shrink. Many aquifers have been over-pumped and are not refilling quickly.

Effects on water quality

Water scarcity results in people having to rely on unsafe sources of drinking water. Maintaining personal hygiene is difficult. There is often not enough water to bathe in or clean clothes properly. Much of the world's fresh water has become too polluted or salty for use in households, industry and agriculture.

Availability of fresh water, cubic metres per person per year

Scarcity
Stress
Vulnerability

0
1000
1700
2500
6000
15 000
70 000
68 4000
No data available
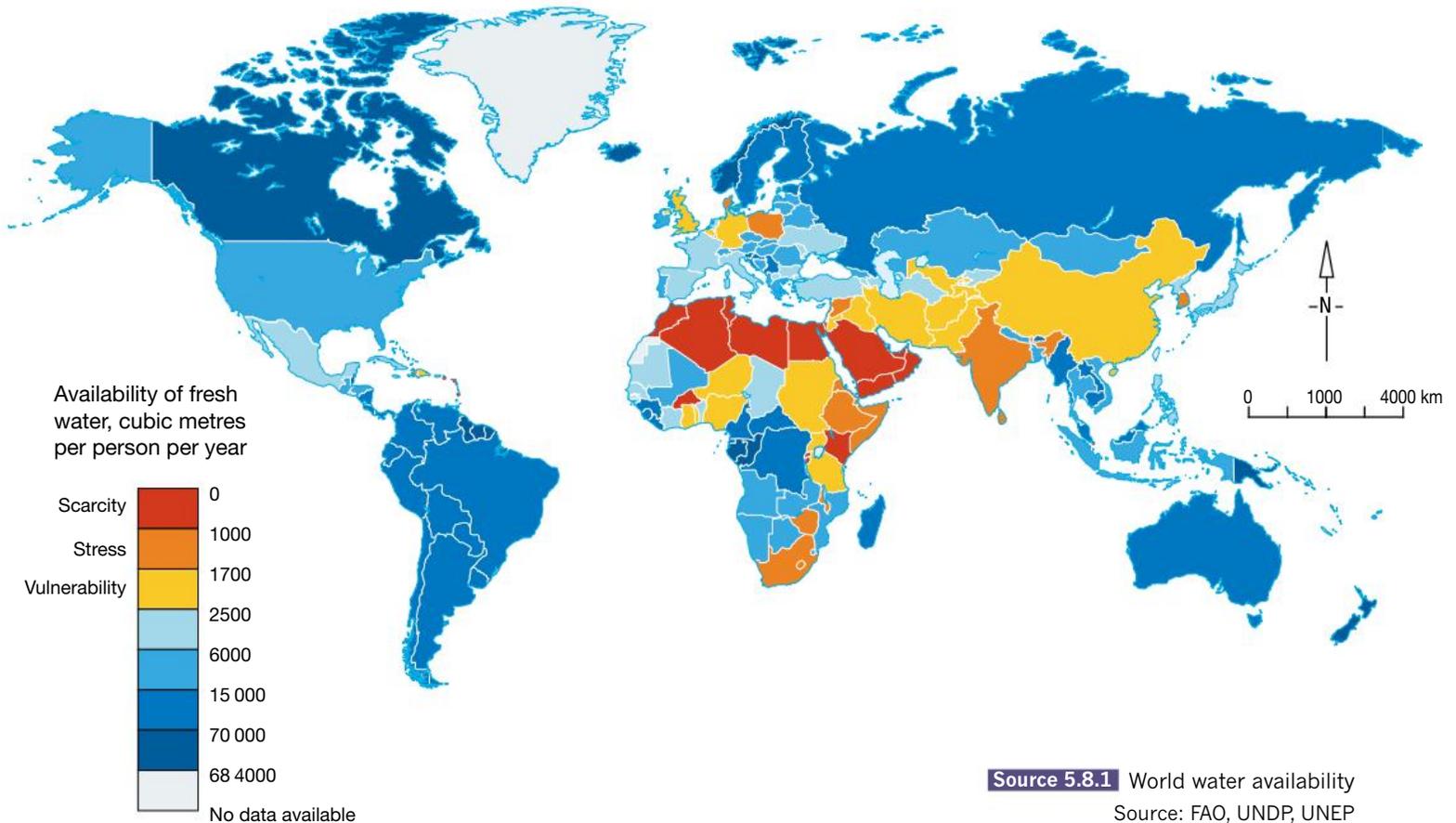
Source 5.8.1 World water availability
Source: FAO, UNDP, UNEP

Contaminated water also increases the risk of infection from waterborne diseases such as cholera, typhoid and dysentery. Water scarcity can lead to diseases such as trachoma (which can lead to blindness), plague and typhus. Contaminated, stagnant water provides a breeding ground for mosquitoes, which are carriers of diseases such as dengue fever and malaria.

The use of wastewater in agriculture is growing and puts people at risk from crop contamination. More than 10 per cent of the world's people consume food grown using wastewater that contains various chemicals or disease-causing organisms.

Solutions

To avoid a global water crisis, industries and cities will need to find ways to use water more efficiently. Farmers will have to increase productivity to meet growing demands for food without greatly increasing their water usage. People need to take personal responsibility and learn how to conserve and protect water resources.

Target 10 of the United Nations Millennium Development Goals, developed in 2000, was to halve the proportion of people without access to safe drinking water and basic sanitation by 2015 and was successfully achieved. The new Sustainable Development Goals set for 2030 look to build on this work and further increase access to safe water and water for sanitation through more efficient water use and local and global cooperation.

Water scarcity in Africa

Fourteen countries in Africa already experience water stress. Another 11 countries are expected to join them by 2025. By this time, an additional 50 per cent of the continent's estimated population of 1.45 billion people will experience either water stress or water scarcity. In sub-Saharan countries, nearly 51 per cent of the population (300 million people) lack access to a supply of safe water, and 41 per cent lack adequate sanitation.

Source 5.8.2 Searching for water in a dry riverbed in northern Kenya

ACTIVITIES

Remembering and understanding

1 Describe the nature and extent of water scarcity in Africa.
2 List the percentage of the world's population that is affected by water scarcity.
3 List the types of water issues that affect people around the world.

Applying and analysing

4 Can places with high rainfall experience water scarcity? Explain.
5 Study Source 5.8.1.
   a List the continents experiencing water scarcity, water stress or water vulnerability.
   b List the continents not experiencing water scarcity, water stress or water vulnerability.
   c List reasons for the different answers to parts **a** and **b**.

Water use

The amount of water people use increased sixfold during the 20th century. This is more than twice the rate of population growth.

Types of water

Blue water is a term commonly used to describe the earth's fresh surface water and groundwater—that is, the water in freshwater lakes, rivers and aquifers.

The term **green water** is used to describe water stored in the soil or present in vegetation.

Grey water is wastewater. It comes from domestic activities such as washing clothes, washing dishes and bathing. Grey water can be recycled and used to water gardens and sporting fields.

Did you know?

A chicken is made up of 75 per cent water. For an elephant, the figure is 70 per cent.

Where water is used

About 69 per cent of all available fresh water is used for agriculture (see Source 5.9.1). A further 21 per cent is used in industry. Major industrial users are power plants, which use water for cooling, or as a source of energy for hydro-electricity; refineries, which use water for cooling; and manufacturing plants, which use water as a solvent. It is estimated that just 10 per cent of worldwide water use is for household purposes. These include drinking, bathing, cooking, **sanitation** and watering of gardens.

Per capita water use

Water consumption can be very high. The amount used per person per day is 575 litres in the United States, and 193 litres in Germany. Compare this with the 20–30 litres per person per day that is considered enough to meet basic human needs in developing countries. Source 5.9.2 shows past, current and predicted water consumption by continent.

Domestic 10%
Industrial 21%
Agriculture 69%

Source 5.9.1 Global water use by sector: agriculture, industry and domestic uses

Asia
North America
Europe
Africa
South America
Australia and Oceania
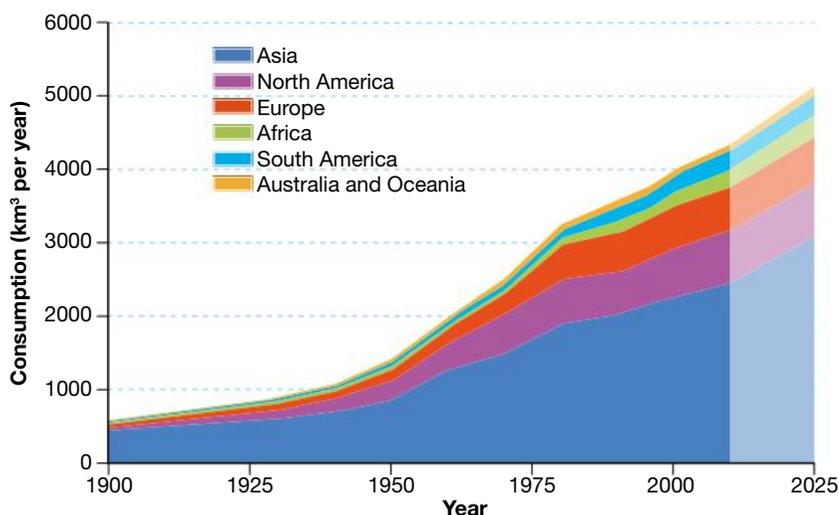
Source 5.9.2 Global water consumption, 1900–2025

Water use in Australia

Australia has one of the highest per capita (or per person) rates of water use in the world. The largest consumer of water in Australia is the agriculture sector. While two-thirds of all the people on earth use less than 60 litres each of water a day, the average Australian uses more than twice that amount during a single shower, and about 493 litres a day in total.

Source 5.9.3 shows water use in Australia by different sectors of the economy, and Source 5.9.4 further analyses water use in Australian households.
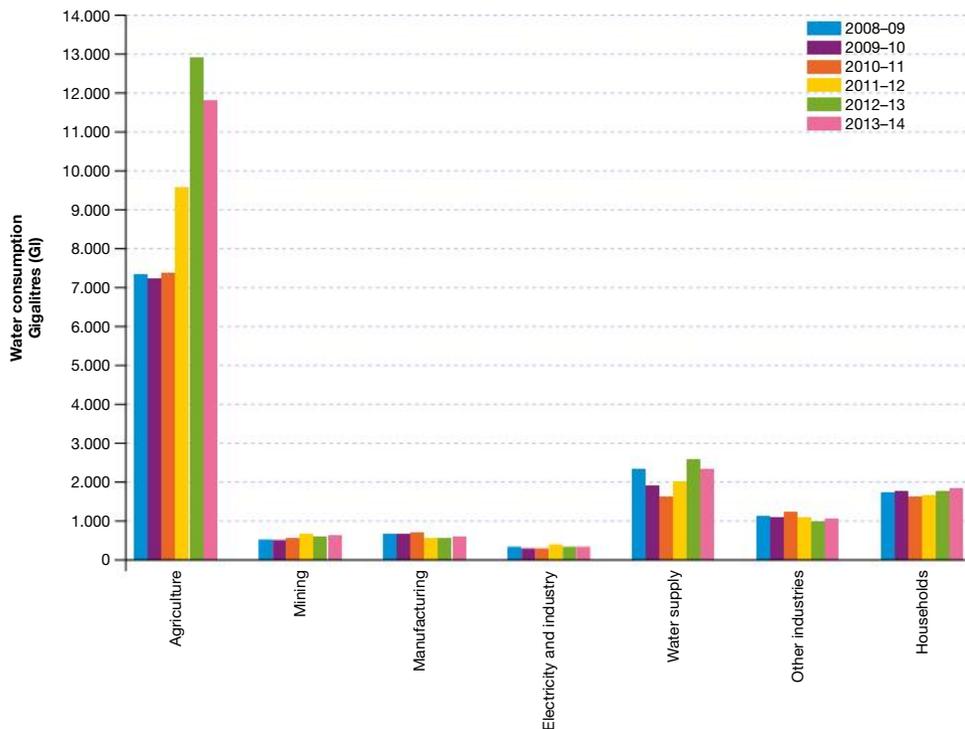
Source 5.9.3 Water consumption by state and territory, 2015. ABS
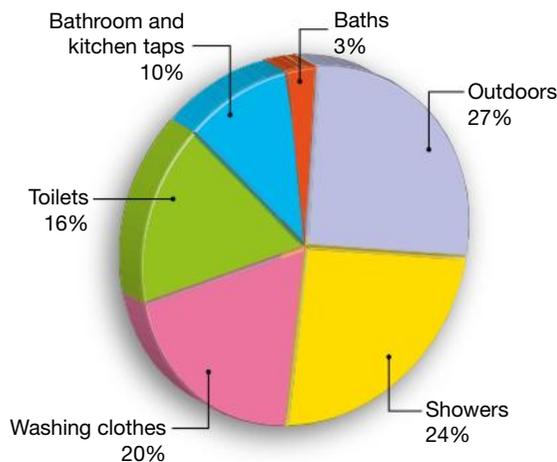
Source 5.9.4 Typical household water use in Australia

ACTIVITIES

Remembering and understanding

1 State the estimated basic water need of people. How does this compare with the average Australian household water use?
2 Distinguish between 'blue', 'green' and 'grey' water.

Applying and analysing

3 Study Source 5.9.2. Describe the change in global water consumption since 1900. Suggest reasons for this.
4 Study Source 5.9.4. Identify the three largest areas of household water use in Australia. Do you think these would be the three largest areas of water use in your household? Explain.

Evaluating and creating

5 Develop a plan to reduce household water use in Australia. Your plan should include reasons for your decisions and an explanation of how the plan should work.

Water management

Tackling water scarcity

The global demand for water will continue to increase as the world's population heads towards 7.9 billion in 2025. Not only will we need to increase the amount of fresh water available, we will also need to use existing supplies more carefully.

Water for Australia's cities

Most of Australia's large urban centres are located along the coastline. These coastal areas receive higher rates of rainfall than inland Australia. Even so, most cities face a challenge to meet the water needs of a growing population. In recent years, Brisbane, Sydney, Melbourne and Adelaide have all had to place restrictions on how and when people can use water. Many smaller cities and towns have also had to impose water restrictions.

Source 5.10.1 summarises some of the strategies beginning to be used to secure water supplies for the future.
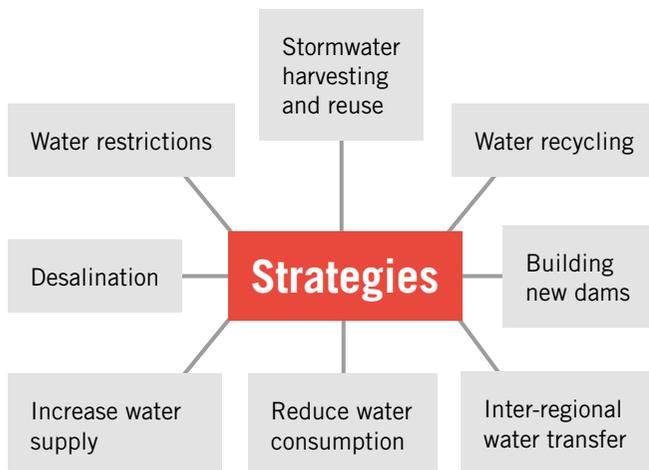
Source 5.10.1 Some of the strategies used in Australian cities to secure water supplies

Due to changing climate and increasing demand for water, Australia faces major challenges in ensuring that it has a sustainable water supply. Any program aimed at securing Australia's future water security will include taking action on climate change, using water wisely, securing additional sources of water and supporting healthy river systems.

Total catchment management

The best way to protect water quality in our waterways is to manage the whole catchment. Sources of pollution need to be identified, and pollutants (such as sewage, industrial pollution, agricultural fertilisers and pesticides, and salty groundwater) need to be captured and treated before they find their way into a catchment's waterways.

There is also a need to manage the amount of water taken from rivers for irrigation and for urban and industrial uses. Scientists now talk of maintaining an adequate **environmental flow** to protect the health of river and wetland ecosystems.

Source 5.10.2 Two views of the Snowy River, showing the level of the river (a) when most of its flow had been diverted into the Murray–Darling Basin and (b) after water was released to simulate environmental flow

The world's deep aquifers

The world's deep aquifers are a largely untapped potential source of additional groundwater. Tests indicate that some of these aquifers hold enough water to support billions of people for centuries. Unfortunately, deep aquifers are not considered a renewable resource because they have taken millions of years to reach their current state and cannot be replenished on a human timescale. In addition:

- little is known about the impact that withdrawing this water would have on the geology of the area
- some deep aquifers underlie more than one country, which makes them a potential source of conflict
- the cost of tapping this resource would be very high.

Increasing water storage capacity

There are now more than 45 000 large dams worldwide (22 000 of these are in China). Together, they capture and store about 14 per cent of the world's surface water run-off, provide water for almost half of all irrigated crop land, and supply more than half of the electricity used in 65 countries. These dams have increased the reliable availability of water for human use by nearly one-third.

Large dams have both benefits and drawbacks. While they greatly increase water supplies in some areas, they also disrupt ecosystems and displace people.

Transporting water

Water can be transported over long distances using dams, pumps, tunnels, pipelines and lined canals, or aqueducts. The California Water Project in California, United States, is one of the world's largest water transfer projects. It moves water from water-rich northern California to water-poor southern California, where it is mainly used in agriculture. In Australia, the Snowy Mountains Scheme takes water from the Snowy River, on the eastern side of the Great Dividing Range, and diverts it westwards

into the Murray and Murrumbidgee river systems (see figure 5.10.2), where it is used for irrigation. There are some people in Australia who argue in favour of building large dams in northern Australia and piping the water south into the Murray–Darling river system.

Did you know?

- Worldwide, big dam construction has displaced up to 80 million people from their homes and flooded an area of productive land equivalent to twice the size of Victoria.
- Only 21 of the earth's 177 longest rivers run freely from their source to the sea.

ACTIVITIES

Remembering and understanding

1 Explain why it is important that water resources are carefully managed in Australia.
2 'Total catchment management' refers to protecting waterways. What needs to be identified so that this protection can commence?
3 Explain the concept of an environmental flow.

Applying and analysing

4 Study Source 5.10.1. Write a paragraph outlining the strategies used in Australian cities to manage water resources.

Evaluating and creating

5 Working in small groups and taking the perspective of a government department responsible for managing water in your town or city, prepare either a brochure, a digital presentation or the script for a television or radio advertisement about strategies that could be used to reduce water usage.

Water footprint

The make-up of a water footprint

A **water footprint** is the total volume of fresh water used by an individual, a household, a business, a community or a country. For an individual, it includes water used directly (for example, for drinking, bathing, cooking and washing clothes) and water used indirectly (for example, in producing things such as food, paper, electricity, steel and cotton clothes).

Using a water footprint

The water footprint of countries can be used to determine and compare global water use. National water use consists of two parts:

- the internal water footprint, which is the water used inside the country
- the external water footprint, which is the water used to produce goods and services that are imported from other countries.

Source 5.11.1 shows internal and external water use for selected countries.
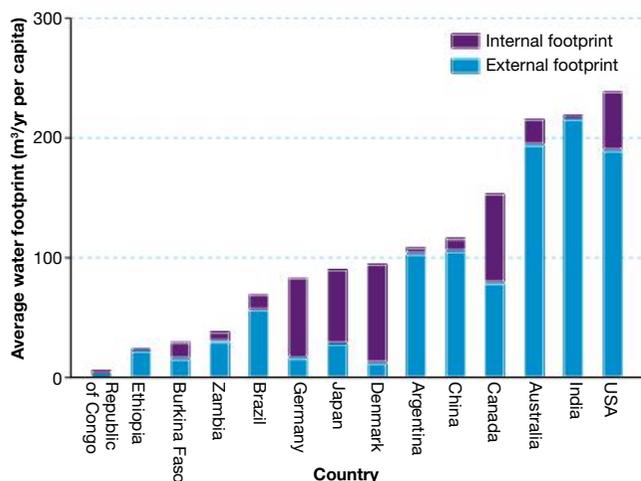
Source 5.11.1 Average water footprint and proportion of water use sourced externally, for selected countries

Water use includes virtual water. The virtual water content of a product is the amount of fresh water that is used when the product is created. An example of virtual water is the water used in coal power stations (see Source 5.11.2). Countries can both import and export virtual water.

If, for example, your family buys an imported car (which uses approximately 150 000 litres of water during the production process), you are using another nation's water. As a general rule, the more economically advanced a country, the greater both its internal and its external water footprint.

Source 5.11.2 The Kwinana Power Station in Western Australia has reduced its daily consumption of fresh water through efficient water practices. It uses seawater for the cooling process during electricity generation and recycles liquid wastes.

Australia's water footprint

In 2013–2014, Australia's total water use was 18 644 gigalitres (1 gigalitre is approximately the amount of water in 500 Olympic swimming pools).

This is an increase from 2008–2009, when 14 061 gigalitres of water were consumed and water use was lower because of drought and the introduction of water restrictions over this period.

Average household water use in 2014 equalled 79 491 litres worked out based on ABS statistics.

A family's water footprint

Water supply authorities want to reduce the amount of water used by households. They do this in various ways:

- through public education campaigns
- through the price they charge for water
- by installing water-efficient appliances
- in some cases, by imposing water restrictions.

An Australian 'water wise' household's water use is shown in Source 5.11.3. Individual figures will, of course, vary. The amount your household uses depends on such things as how much time you spend at home, how often you have visitors, the size of your garden and whether you have a pool.

To encourage people to use less water, there are a number of online water footprint calculators. There are also apps you can download onto your mobile phone that calculate your water footprint, tell you how much water is used in the production of selected goods and track your use of water, gas and electricity.

People per household	Water consumption
1	239 litres/day
2	360 litres/day
3	458 litres/day
4	542 litres/day
5	619 litres/day
6	689 litres/day

Source: Sydney Water

Source 5.11.3 Water consumption of a 'water wise' Australian household

Did you know?

The total global water footprint is 7450 billion cubic metres per year. This is an average of 1240 cubic metres per year for every person on earth.

Reducing water use

There are many ways in which households can reduce their direct water footprint (that is, their home water use).

Examples include:

- installing dual-flush toilets and water-saving showerheads, dishwashers and washing machines
- turning off the tap when brushing your teeth
- using less water in the garden (for example, by planting drought-resistant plants, mulching garden beds and using drip irrigation)
- collecting rainwater and using grey water for irrigation.

ACTIVITIES

Remembering and understanding

1 State what is meant by the term 'water footprint'.
2 Distinguish between a country's 'internal' and 'external' water footprint.
3 State what the term 'virtual water' refers to.
4 Discuss why Australia's water footprint has been decreasing.

Analysing and applying

5 Develop your own example of the trade in 'virtual water'.
6 Study Source 5.11.1, then answer the following questions.
   a List the five countries with the highest water footprint per capita.
   b Compare the internal footprint of each of those five countries with its external footprint.
   c Identify the countries that have a larger external water footprint than internal water footprint. Provide reasons why this might be so.
   d The United States has the third-largest population of all the world's countries but the highest water footprint per capita. Discuss why this is so.

Evaluating and creating

7 Access one of the many online water footprint calculators. Calculate your water footprint.

Reducing water use

Conserving water

Conserving water is almost always more effective and less costly than trying to provide a new supply of water. The key idea in water conservation is that there are many ways in which we can use water resources more sustainably.

Price

Increasing the price of water is one way to reduce water use. When water is cheap, people do not use it wisely; when the price of water rises, people use it more carefully. But, while higher water prices encourage conservation, they can make life difficult for farmers and households on low incomes.

In irrigation

About 60 per cent of the water used in agriculture does not make it to the plants. Flood irrigation systems of agriculture (for example, paddy rice cultivation) typically lose 40 per cent of their water through evaporation, seepage and water run-off. With advanced systems of centre pivot irrigation and drip irrigation, between 90 and 95 per cent of the water gets to the crops.

Strategies for reducing irrigation water waste include:

- using the most efficient irrigation technology available (for example, drip irrigation)
- lining canals to reduce seepage
- irrigating at night to reduce evaporation
- monitoring soil moisture and only applying water when necessary
- avoiding growing water-thirsty crops in arid areas
- irrigating with treated grey water
- pricing water at a level that encourages conservation.

In industry and at home

While agriculture is the biggest user of water, industrial and domestic consumption is also significant. In developing countries, between 30 and 60 per cent of the urban water supply is lost through leaking water mains. Even in the cities of the developed world, leakage can account for between 20 and 30 per cent of the water supply. Fixing these leaks is cheaper than building additional storage capacity.

Strategies for reducing water waste in urban and industrial settings include:

- redesigning manufacturing processes so that they use less water
- recycling water, especially in industry
- landscaping public parks and private gardens with plants that have low water needs
- using drip irrigation systems in gardens
- fixing leaking water mains
- using water-saving fixtures in commercial and residential properties
- collecting domestic grey water and using it to water lawns and non-food plants
- purifying and re-using water from homes and commercial buildings
- pricing water at a level that encourages conservation.

Personal responses

There are a number of actions individuals can take to reduce water consumption (see Source 5.12.1). These include:

- installing water-saving household appliances, showerheads and toilets
- taking shorter showers
- turning off the tap when cleaning your teeth
- washing clothes only when you have a full load
- using grey water on lawns and gardens
- washing the car using a bucket rather than a hose
- fitting timers to all garden hoses
- planting plants and grasses with low water demand
- watering lawns and gardens early in the morning or late in the afternoon
- installing drip irrigation systems.

Sustainable water use

In addition to personal responses, there are a range of programs to use the earth's fresh water more sustainably. These include:

- wasting less water and promoting water conservation through education programs
- researching and developing new technologies for efficient water use and recycling
- ensuring that aquifers are used sustainably
- maintaining water quality by protecting forests, wetlands and other natural systems that store and release water
- developing agreements between countries that share water resources
- slowing population growth
- pricing water at a level that encourages conservation (the higher the price, the less water will be used).
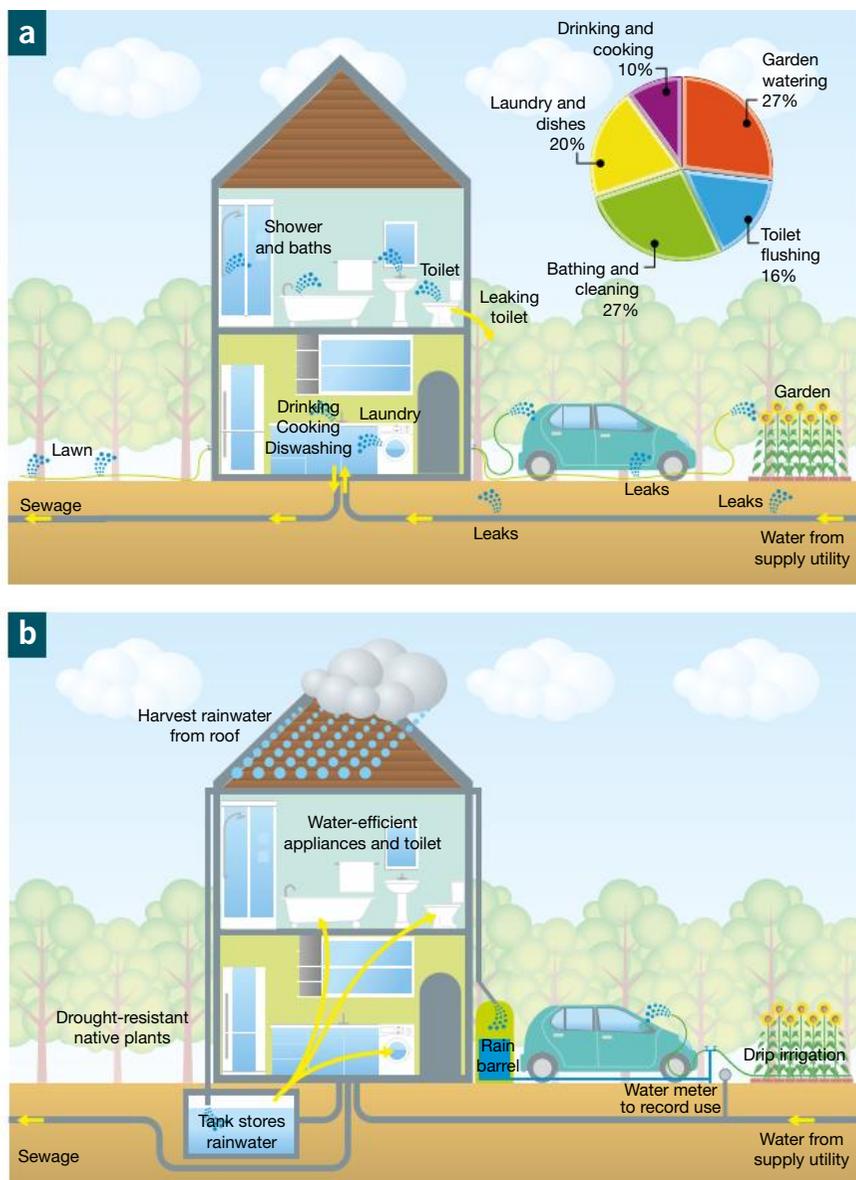
Source 5.12.1 Making your home water wise: (a) before, and (b) after

ACTIVITIES

Remembering and understanding

1 State what is meant by water conservation.
2 Describe how water pricing can be used to reduce water waste.
3 Discuss how irrigation water can be used more effectively.
4 State the ways in which the sustainable use of water can be promoted.
5 Study Source 5.12.1. Identify the ways in which this Australian household has become more water wise.

Evaluating and creating

6 Draw up a poster promoting water conservation in one of the following locations.
   - an urban environment
   - an industrial setting
   - a rural environment
7 Respond to the following statement: 'I am only one person. How will changing my behaviour make a difference when it comes to water conservation?' Give your response as an oral presentation. Include images, data and other resources to support your response.

Inter-regional water transfer

Water scarcity in Australia

Australia is a continent of extremes. There is an abundance of water in the tropical north, where few people live, and relative scarcity in the more populated southern parts of the continent. In addition, neither north nor south receives reliable rainfall all year round.

Addressing past mistakes

Poor management of water resources has led to an over-allocation of water to farmers (irrigators), especially in the Murray–Darling Basin. There is also increasing competition between irrigators and mining, urban and industrial users of water. As a result, there has been a major deterioration in the health of many river systems and their environments throughout Australia.

For Australia to have environmentally sustainable and productive river systems, water needs to be managed better and used more efficiently. Water buybacks (paying irrigators to give back some of their allocated water) and the use of more efficient irrigation technologies are two strategies that could help to guarantee an environmental flow for river systems. Such plans are difficult to implement. Irrigators and river-dependent communities fear that their economic wellbeing will be affected.

Grand plans

Since European settlement, many proposals have been put forward to transport water from the north of Australia to the south. Some notable examples are described below.

The Bradfield Scheme

In 1938, John Bradfield, the designer of the Sydney Harbour Bridge, presented a plan to the Queensland government to divert water from northern Queensland's coastal rivers across the Great Dividing Range into central Australia. The aim of the scheme was to droughtproof much of inland Queensland and South Australia.

South-east Queensland water grid

In 2007, the Queensland government commissioned a report on a proposal to transport water from the north-east of Australia by diverting it from the Burdekin River to south-east Queensland, where it could be moved between various storage dams by pipelines.

Northern New South Wales

It has been suggested that water from coastal rivers of northern New South Wales could be diverted into river systems west of the Great Dividing Range.

The Kimberley–Perth Canal

Plans to build a 2500-kilometre canal from Western Australia's Kimberley region to Perth (see Source 5.13.1) received considerable media and political attention between 2006 and 2008. At this time, Perth was suffering one of its worst-ever droughts. The Kimberley region receives higher rainfall than Perth at different times of the year, as shown in Source 5.13.2. Rivers in the region could also supply water.
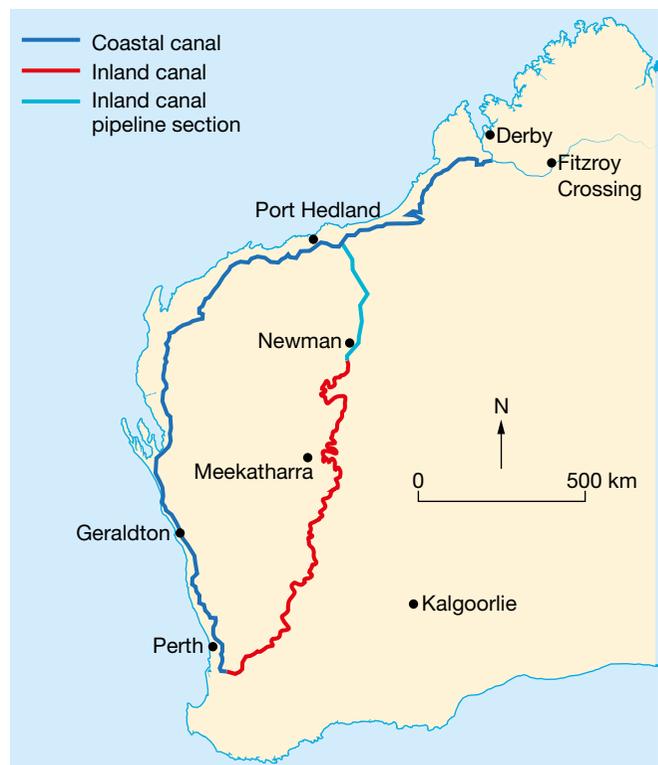
Source 5.13.1 The Watering Australia Foundation's proposed route for the Kimberley–Perth Canal
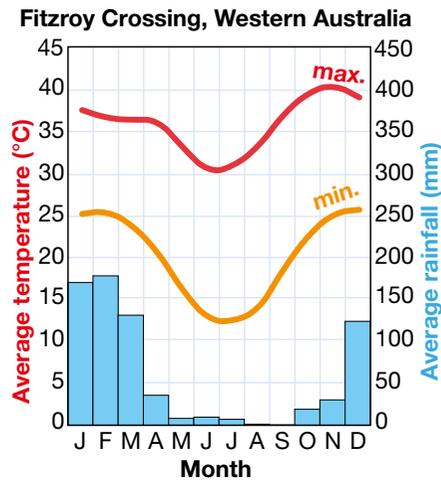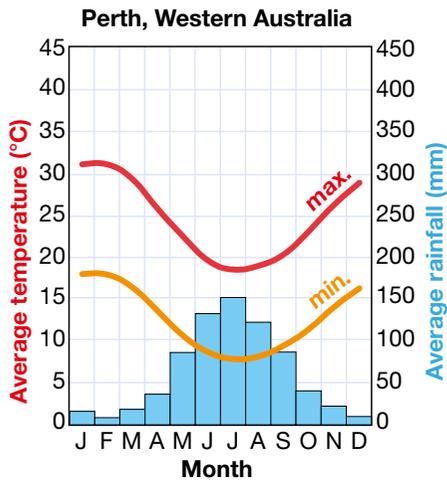
Source 5.13.2 Climate graphs for Perth and Fitzroy Crossing, WA. The Kimberley's summer rains could be diverted by canal to meet Perth's water needs.

Alternatives to the canal proposal included a pipeline to transport the water from north to south and transporting the water by sea, in tankers or in large water bags towed by tugboats. The construction of a desalination plant proved to be a cheaper alternative.

Reality check

The cost of capturing and storing water, then transporting it from north to south would be enormous. Even if cost were not an issue, the concept is not without its problems. These include:

- the lack of suitable locations for building a dam, given that much of northern Australia is flat
- the variability of rainfall across northern Australia
- environmental impacts in the catchments being harvested
- the current and potential uses of the north's water resources.

Alternatives

Alternative ways of addressing the issue of water scarcity in Australia include:

- reducing consumption by improving efficiency of rural and urban water use
- pricing water at a level that discourages waste
- recycling and desalination.

ACTIVITIES

Remembering and understanding

1 Explain why effective water management is essential in Australia.
2 Outline the aim of John Bradfield's water diversion scheme.

Applying and analysing

3 Create a PMI chart about moving water from the north of Australia to the south. Consider the economic, environmental and social costs.
4 Study the climate graphs in Source 5.13.2.
   a Describe how the climates of Perth and Fitzroy Crossing differ.
   b What is the link between the seasonal pattern of rainfall received by each station and proposals to transport water from the north to the south?

Desalinate, reuse and recycle

Desalination

Desalination is a process that involves removing the dissolved salt from ocean water. The process most commonly used is called reverse osmosis. This involves forcing water, under high pressure, through a filter that is fine enough to remove the salt (see Source 5.14.1). Today, there are more than 14 500 desalination plants operating in more than 125 countries. Australia has six desalination plants.

Desalination plants are very expensive to build and operate, and they use enormous amounts of electricity. They can have a serious impact on nearby marine ecosystems from either the toxic chemicals used to kill algae or the brine, or concentrated seawater by-product, that has to be dumped back into the sea. Almost half of Perth's water is supplied by its two desalination plants. A solar farm and two wind farms power the two plants, and an ocean monitoring program is carried out.

Step 1
Seawater intake

Step 2
Screening

Step 3
Filtration

Step 4
Reverse osmosis removes salt and other impurities from the seawater

Step 5
Treatment to drinking water standard

Step 6
To drinking water supply

Step 7
Seawater concentrate is safely returned to the ocean

Intake tunnel

Outlet tunnel
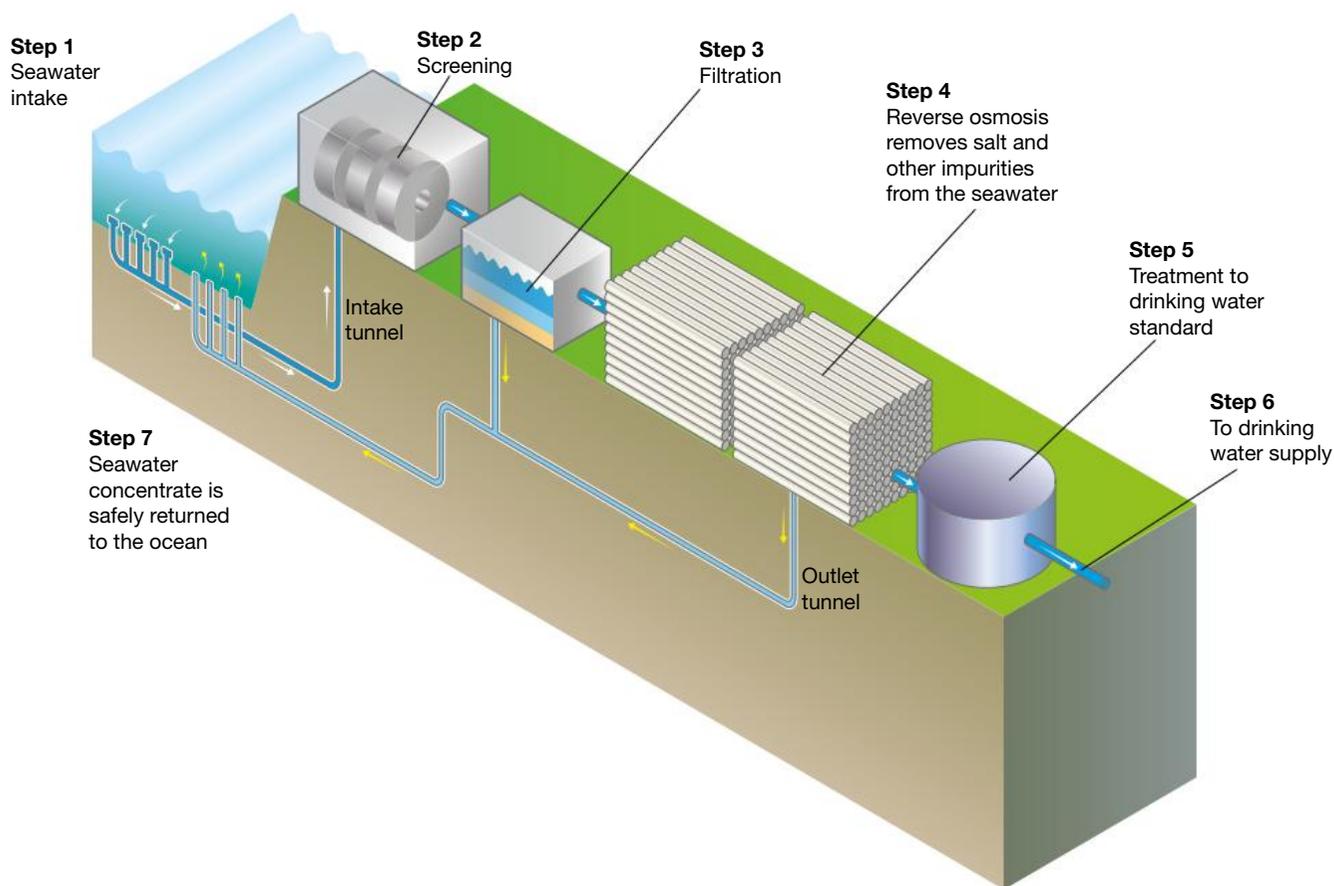
Source 5.14.1 The desalination process

Reusing and recycling water

Recycled water is wastewater that has been treated. The source of the water and the purpose for which it will be reused, determine whether or not and to what extent the water will need to be treated. Rainwater can often be reused without treatment at a water recycling plant for purposes such as watering domestic gardens. However, treatment at a plant is sometimes required for stormwater and often required for grey water and sewage. Although using recycled water comes with greater risks and consumes greater energy than using surface water, such as dam water, it is an important part of managing water scarcity.

Stormwater harvesting

Stormwater is rain that lands on surfaces, such as roads and pavements, which then runs off from this surface. This is why stormwater harvesting is usually associated with urban areas. Stormwater harvesting includes collection, storage, treatment and use of stormwater.

Stormwater can be collected in various ways, including through porous surfaces, such as pavement, in garden beds or through drains (see Source 5.14.2). Recycled stormwater is commonly reused for irrigating green spaces, such as parks, and in toilet flushing because treatment requirements are low. As with any water source, monitoring must occur constantly to ensure contaminated water is not distributed or does not reach other waterways. Onsite stormwater reuse is in place in many local Western Australian urban sites. Larger scale stormwater recycling, involving storage and treatment, is not yet in use in Perth, but may occur in the future.

In urban areas, it is particularly important to consider using stormwater because it has the potential to affect natural flood patterns, flow rates in natural waterways (in turn, affecting species in these ecosystems), cause erosion and pollute waterways should it pick up oils, chemicals or pathogens as it runs over the ground. Stormwater harvesting not only assists with the negative impacts of stormwater in urban areas but can also reduce the strain on other water supplies, especially supplies which can be used for drinking water. In recent years, stormwater harvesting has become increasingly utilised in water management.
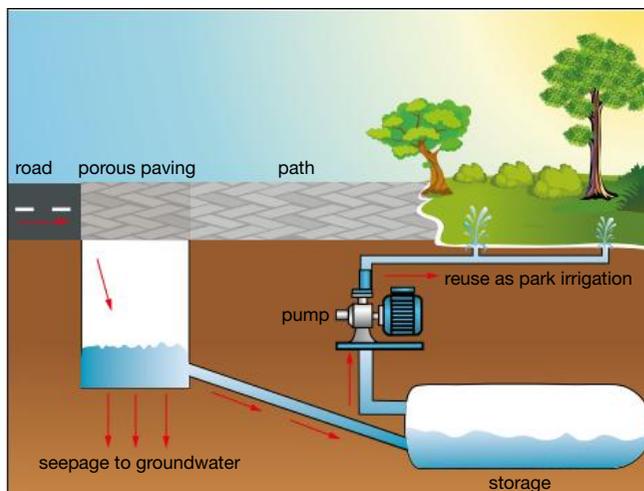
Source 5.14.2 An example of stormwater harvesting for irrigation, showing collection, storage and reuse without treatment.

ACTIVITIES

Remembering and understanding

1 Study Figure 5.14.1. Explain the process of desalination.
2 Explain the different types of water that can be recycled and the risk levels associated with each type.

Applying and analysing

3 Draw a diagram depicting the ways in which stormwater can affect the environment in a built area. Annotate the diagram with solutions to each of these effects.

Evaluating and creating

4 Investigate one of Australia's desalination plants. Why was it built? Is it necessary? What are the environmental impacts of the plant?
5 Conduct some research and find an urban area in Western Australia that is reusing or recycling stormwater. Evaluate the reuse or recycling. What have been the benefits, the negative impacts and the potential risks?

Water resources in Africa

Managing water resources

The distribution of fresh water resources in Africa is uneven and unreliable. Areas such as the Sahara and the Sahel in the north, and the Kalahari in the south, suffer from long periods of drought, while the tropical belt of mid-Africa has plenty of water.

The problem

Water scarcity has always been a problem in Africa. Africa's share of the world's population is 14 per cent, yet its share of global fresh water is about 10 per cent. With its population projected to double from just over 1 billion in 2012 to 2 billion in 2050, the situation can only get worse.

- Most Africans living in rural areas do not have safe and reliable access to water. On average, Africans use only 30 to 40 litres of water per day for domestic consumption.
- More than 300 million people in Africa still lack access to safe water and adequate sanitation. In sub-Saharan Africa, just 51 per cent of the population has access to safe water and 45 per cent to sanitation.

- Africa is a dry continent. More than 40 per cent of Africa receives less than 200 millimetres of rainfall a year. Drylands and deserts together cover 60 per cent of the entire land surface.

The challenges

The water-related challenges facing Africa are enormous.

- Africa needs to reduce the proportion of people without access to safe water by 50 per cent.
- Africa needs to increase the area of irrigated land.
- To meet the increased demands of agriculture, hydro-electric power, industry, tourism and transportation, Africa has to increase the development of its water resources by 25 per cent by 2025.
- Africa has to manage droughts, floods and desertification more effectively.
- It is a priority is to restore the environment through the supply of sufficient water for environmental sustainability and the conservation of watershed ecosystems.
- Efficient water management systems need to be implemented, including rainwater harvesting.

A contemporary response

There are three broad approaches to water management. The main approach taken by most African governments is storing more water. The second is to conserve water; for example, through efficient irrigation techniques. The third is to use the water available differently; for example, building reclamation or recycling plants such as the one in Namibia shown in Source 5.15.1. Africa's groundwater stocks are enormous (see Unit 5.6), but they could be depleted if they are used faster than they can be replenished. Sustainable approaches to water management is essential.

Source 5.15.1 Water reclamation in Namibia. Water is re-used for irrigation and domestic consumption.

The San people of the Kalahari

The San people (sometimes referred to as the Bushmen of the Kalahari; see Source 5.15.2) are the indigenous people of southern Africa. Traditionally, they have lived as hunter-gatherers, hunting game with poisoned arrows. In their dry environment the San get their water from baobab trees, plant roots (as shown in Source 5.15.3) and desert melons. They often store water in springbok bladders and the blown-out shells of ostrich eggs. They also dig sip wells—holes that they dig in the earth and fill with soft grass. A reed is used to suck water from the hole, and send it bubbling up the reed to fill an ostrich egg.

Source 5.15.2 For more than 20 000 years, the San have occupied a vast territory spanning parts of modern-day South Africa, Zimbabwe, Zambia, Botswana, Namibia and Angola.

Source 5.15.3 San Bushman drinking sap squeezed from a tuber

ACTIVITIES

Remembering and understanding

1   List the water-related challenges facing Africa.
2   Explain how the San people of the Kalahari learnt to live with water scarcity; that is, with having only a small amount of water.

Applying and analysing

3   Explain how the three broad approaches to water management will help ease Africa's water problems.
4   Study Source 5.15.2. Name the countries in which the Kalahari Desert is located.
5   Describe the living conditions of the San people with the help of Source 5.15.3 and the information in this unit.

Inquiry tasks

Water transportation in Australia

Since European settlement many proposals have been put forward to transport water from the north of Australia to the south. Some notable examples are discussed in Unit 5.13. They include:

- the Bradfield Scheme
- South-east Queensland water grid
- Northern New South Wales
- The Kimberley–Perth canal

Using an atlas and a blank outline map of Australia, complete the following tasks:

a Label the location of each of the grand plans mentioned above.

b Annotate the map with a very brief description of the aims of each grand plan. Remember to use the BOLTSS acronym (border, orientation, legend, title, scale and source).

c Which of the grand plans do you think would be the most successful? Explain why.

d Which of the grand plans do you think would be the least successful? Explain why.

Comparing water availability

a Many countries around the world experience water scarcity and stress. A variety of strategies have been developed to help manage water supply. Investigate these strategies and complete the PMI chart shown above-right.

b Investigate the quantity and variability of water supply in Australia and two other countries. Each country must be on a different continent. Your investigation needs to include the following information:

- a map of the country showing rainfall, major cities and rivers
- a map of the country showing access to safe water and sanitation
- an overview of water issues
- per capita water usage.

	Plus	Minus	Interesting
Building new dams			
Transporting water			
Extracting ground water			
Desalination			
Recycling water			
Harvesting stormwater			
Cloud seeding			
Increasing the price of water			
Using water-saving devices, e.g. dual-flush toilets			
Irrigation developments			
Planting crops that use less water			
Personal responses			
Other			

c Respond to the following question: 'Which water management strategies from Activity A would you suggest each country adopt to solve their water stress issues?' Present your findings as a multimedia presentation.

Desalination investigation

Desalination plants are expensive to build and operate. However, they are seen by many as a solution to the growing demand for water at a time when rainfall is becoming less reliable due to climate change.

Your task is to investigate the advantages and disadvantages of desalination. Your investigation should consider the following:

- the process of desalination
- the reasons why desalination plants are being built
- the location of desalination plants in Australia and worldwide
- the economic, social and environmental benefits and impacts of desalination.
- Other relevant information.

After examining the advantages and disadvantages, write an extended response to the following statement: 'Desalination is the best response to meeting the water needs of a growing urban population'.

Reclaimed water

Reclaiming or recycling water consists of removing solids or other impurities from water and using the water for irrigation or putting it back into the water table. In Victoria, reclaimed water has been used on market gardens in Werribee. In Singapore, reclaimed water is safe enough for human use, but it is mainly used in industry. Around the world, some cities are planning to use reclaimed water and add it to their water supply so the water can be used for human consumption.

Develop a marketing and advertising campaign to promote water recycling in your city, state or local area. The campaign can include one or more of the following formats:

- a poster
- a short multimedia presentation
- a social media plan
- a short video.

Reducing household water usage

Conserving water is almost always more effective and less costly than trying to provide a new supply of water. The key idea in water conservation is that there are many ways in which we can use water resources more sustainably.

Your task is to imagine you have been asked to create a short children's book that aims to educate primary school children about the importance of reducing household water usage. The children's book must be presented in an engaging manner. It should include:

- an introduction with facts and figures about household water usage in Australia
- reasons for the importance of reducing household water usage
- images
- possible management ideas, solutions or responses.

GLOSSARY

aquifer a layer of rock capable of storing significant quantities of water

blue water fresh surface water and groundwater, i.e. lakes, rivers and aquifers

catchment the area drained by a river and its tributaries; a river basin or drainage basin

condensation level when water vapour turns into liquid water as dew, fog or cloud droplets

convectional rainfall rainfall that occurs as warm, moist air rises and cools forming clouds

desalination the removal of salts from seawater or other saline (salty) solutions

environmental flow the amount of water that must flow in a river to maintain healthy, nature ecosystems

green water water temporarily stored in or on the soil, or on vegetation

grey water water from domestic activities, e.g. laundry, dishwashing, bathing

groundwater water beneath the earth held in pores or tiny spaces of sand, soil or rock

irrigation watering crops by artificial means

run-off the movement of surface water down slopes

sanitation infrastructure that collects and disposes of sewage (human waste)

water cycle water circulates between the earth's oceans, atmosphere and land

water footprint the total volume of fresh water used by an individual, household, business, community or country

water scarcity when the demand for water is greater than the amount available

watershed the boundary between catchments

water stress the negative effect water scarcity has on people and environments

water table the level at which under-rock strata are saturated by water

Place and liveability

Choosing where to live is one of the most important decisions we will make during our lives. There are many factors that will influence such decisions. Our perception about the liveability of places is one factor. The term 'liveability' is used to describe the extent to which a place (town, city, or neighbourhood) is able to support a quality of life that maximises residents' wellbeing. Liveability, however, has different meanings to different people. The majority of the world's people have little choice in where they live. For people who have the means to choose where they live, liveability of places is important. People want to live in a neighbourhood that is a good place in which to raise a family. They want a choice of housing types, recreational activities, shops and services within walking distance, and easy access to quality schools and open space.

Source 6.0.1 Aerial view of Perth CBD

Deciding where to live

The decision

Some people live out their entire life in the village, suburb, town or city in which they were born. Others migrate to distant places to start a new life. Australians move home, on average, every seven years.

There are many factors that people think about before choosing where to live. Some of these are emotional; some are responses to circumstance at a particular time. Because the decision-making process is such a personal one, there is no complete list of factors. The following are some of the most common factors affecting the choices people make about where to live.

Attachment to place

We all develop an attachment to places that are special to us. It may be the place in which we were born and grew up. It may be a place we visited on holidays. It may be somewhere we have always wanted to live. These are powerful forces that influence the choices we make.

Distance from family and friends

Being close to family and friends is a powerful factor influencing people's decisions about where to live. Family and friends provide emotional and practical support and meet one of our most basic social needs—the need for companionship.

Employment opportunities

Earning an income to support yourself and your family is an important factor in deciding where to live.

Affordability

The greater a person's income and/or wealth, the wider the range of options they have for where to live.

Source 6.1.1 (a) Fremantle (b) Broome and (c) Kalgoorlie—examples of places to live

The wealthy can afford to buy or rent housing in the most desirable suburbs. The choices of people on lower incomes are limited to areas where housing is relatively cheap or rents are affordable. This accounts for the **spatial inequalities** we see in Australia's large cities.

Stage of life

The factors influencing people's decisions about where to live change throughout the life cycle. When you are young, you live where your parents decide to buy or rent a home. In your 20s, you may live in rented group housing with friends.

For many people, especially older people, access to quality health care is important. For young families, access to good schools may be important. Some people will buy a house in a particular suburb so that their children can attend a well-regarded school nearby.

Lifestyle considerations

The way of life a person aspires to is an important influence. Some people opt to live in the country; others find the casualness of the coastal lifestyle more appealing; still others like the buzz of the inner city. Some people like areas that are diverse, crowded and colourful, while others seek out places that are quiet, isolated and natural.

Personal safety

Perceptions about the level of crime in an area influence people's decisions. People who can afford to live elsewhere avoid areas with high crime rates.

Environmental factors including climate

People's decisions about where to live are sometimes influenced by climate, **aesthetics** and environment. The increasing number of people moving to the south-eastern corner of Queensland can be linked to Queensland's climate and beaches. Others move to the hills and mountains surrounding some of our large cities for their scenic beauty, milder temperatures and lower humidity.

Culture and ethnicity

New immigrants often settle in suburbs with an established community of people from a common cultural or ethnic background. This provides them with a support network that makes settling into their new homeland easier. As a result, parts of our cities become associated with people of particular cultural backgrounds.

Travel time and transport options

Some people choose to live close to where they work. Others are willing to travel, sometimes over long distances, to live in a place that is more affordable or appealing. Access to public transport is an important factor for people living in large, congested cities.

The choices people enjoy

For a majority of the world's population, the choice of where to live is restricted by issues such as poverty, culture, human rights and individual freedoms. For many people, there is little choice. Life is a daily battle for survival. In some places, conditions in rural areas have deteriorated to a point where people have been forced to migrate to large cities.

Did you know?

Of all Australians aged 15 years and over, 27 per cent have been living in their current home for 15 years or more, 30 per cent have been there for 5–14 years, and 43 per cent have moved within the last 5 years.

ACTIVITIES

Applying and analysing

1   Draw a mind map showing the factors that influence people's decisions about where to live.
2   Write down each of the factors affecting where people choose to live on a separate piece of paper. Rank these from the most important to the least important. Compare your ranking with those of others in the class. Explain your reasoning.

Evaluating and creating

3   Interview your parents or guardian. What factors did they take into account when selecting the place in which you live?

Liveability of places

Perceptions of liveability

Some cities, towns and neighbourhoods are seen as being better places to live in than others. These **perceptions** differ from person to person depending on what each one considers to be important. The way a person sees the world around them is influenced by factors such as their age, gender, income or wealth, ethnicity and family type.

The **liveability** of a city, town or neighbourhood depends on the environmental and social quality of the area and how it is perceived by residents, workers, customers and visitors. The term '**quality of life**' is sometimes used as an alternative to 'liveability'. Some of the factors people take into account when they judge a place's liveability can be seen in Source 6.2.1.

The liveability of places is largely affected by public places where people interact with others in the community. These places include streets, parks, sporting facilities, shopping centres, schools, public transport interchanges and other public facilities. This means that the liveability of a city, town or neighbourhood is influenced by public policy and planning decisions.

The liveability of a place has a direct impact on the people who live, work or visit there. In areas considered to be 'nice' places in which to live and work (that is, as having high liveability), property values and levels of business activity are higher. In neighbourhoods that are perceived to have low levels of liveability, housing is cheaper because people are less likely to choose to live there.

Aesthetics—how visually attractive an area is

Safety and health (personal security, public health, traffic safety)

Opportunities for recreation and entertainment

Local environmental conditions (cleanliness, noise, dust, air and water quality)

The quality of social interactions (community identity and pride, neighbourliness)

The existence of unique cultural and environmental resources, such as historic structures

▪	Building
S	School
PO	Post office
▫	Shop
—	Pier
×	Dangerous rocks
┼┼┼┼	Railway
ST	Station
F	Fish processing plant
LO	Lookout
R	Restaurant
H	Hospital
TH	Town hall
P	Police station
○	Sports ground
▲	Camping ground
⚘	Farm
♀	Orchard
HT	Historic town
Pwr	Power generation plant
	Mangrove
▌	National park boundary

Sandy Bay

Elizabeth Town

Cecil Creek

Gordon River

Pwr

N 0   4 km

Contour interval: 10 metres

30 — Contour line in metres

— Sealed road

⋯⋯ Unsealed road

⋯⋯ Rivers and streams

Source 6.2.1 Topographic map of Elizabeth Town (population 10 000)
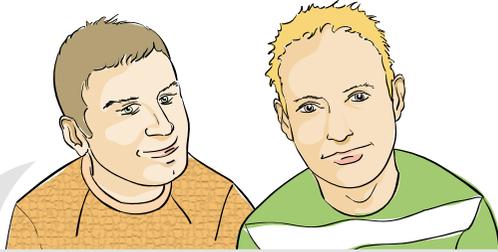
We moved to the inner city to be closer to work. The other big attraction was being close to the cafes, nightclubs and bars we hang out at. We can walk to work and we hardly ever use our cars.
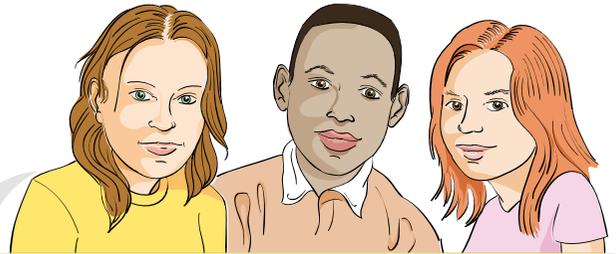
Being able to get about easily is important. It's boring at home. We can hang out with our friends or go to movies. We can get to the beach by train in summer. Riding the train can be a bit scary late at night, so our mums and dads will often pick us up after the movies. Otherwise it's OK, especially when we go out as a group.

I live in the inner city, close to where I practise law. I enjoy living in the city, but I often find my thoughts wandering back to the traditional lands of my people—my Country. It's difficult to explain to non-Indigenous people.

Lifestyle factors are important. We fled the city five years ago. Life here in this small coastal community is much simpler. We have a lot of time to spend as a family doing the things we enjoy: swimming, surfing and tennis. There is hardly any traffic, except in summer when the city people come for holidays. We would never go back to the city!

We settled here because this is where people of our cultural background have settled for some time now. Their support has made it easier to adjust to living in Australia. There are doctors, lawyers and community workers who speak our home language, and it's good to meet with others who come from the same place we do, and share our experiences. We often help each other out.

Source 6.2.2 Different people perceive the world differently. They base their perceptions of liveability on many factors.

ACTIVITIES

Remembering and understanding

1 Define 'liveability'.
2 List the factors that help determine people's perception of the world around them.

Applying and analysing

3 Study Source 6.2.1.
   a List the community facilities in Elizabeth Town and the surrounding area.
   b Would you describe Elizabeth Town as a liveable place? Explain.
4 Study what the people in Source 6.2.2 say about the places they live in. Identify each of the different groups represented. As a class, discuss how each person's perception of liveability differs, and the reasons why these differences might exist.

Evaluating and creating

5 Write two short statements outlining the liveability of the place you live in from:
   a your parents' or guardians' perspective
   b your perspective.
   Compare your answers with those of others in the class. What factors do the answers to part **a** have in common with the answers to part **b**? What differences are there?
6 List the liveability criteria you would use to describe the ideal place in which to live.

Perceptions of liveability

Different priorities, different choices

Different people use different criteria when making judgements about the liveability of places. The factors that influence people's perceptions include their age, income, household type, gender, cultural background and education.

Age

A person's age is one of the most important factors affecting their perceptions of liveability. Adults, for example, are most likely to focus on factors such as good transport links and access to work and shops. Teenagers might be more likely to value entertainment and sporting facilities, and access to shopping malls. While some factors appeal to all age groups, others are perceived as more or less important depending on people's individual needs.

Household type

Household type is also important. People without children may have different liveability preferences from those with children. Access to childcare, playgrounds and schools are often important considerations for parents. People without children might prefer inner-city living with access to work, restaurants and entertainment venues.

Source 6.3.1 The annual agricultural show is a major community event across rural Australia.

Income and education

Income is another important consideration. The higher someone's income, the greater the range of choices they have about where to live. People often choose the most liveable suburb or neighbourhood where they can afford to buy or rent a property. People with the lowest incomes are often forced to live in those parts of the city perceived to be the least liveable.

Source 6.3.2 Christmas markets are an important community event in many European cities.

Cultural background

People's cultural background can also influence their perceptions of liveability. Immigrants, for example, often see ethnic-based community support networks as an important consideration. It is not unusual to find people with a common ethnic background living in a particular neighbourhood.

Liveability ratings

Some general categories that can be used to assess liveability are:

- perception of public safety
- housing affordability
- friendliness and consideration
- community cohesion (the degree to which residents cooperate and interact)
- attractive and well-maintained public spaces
- walkability and its impact on how people interact and experience their neighbourhood
- **accessibility** and transport choices that reduce commuting times and allow people to access goods and services and recreation facilities
- quality of independent mobility (for example, special buses) for children, the elderly and people with special needs
- recreational facilities, such as sportsgrounds, restaurants and cinemas
- utilities (electricity, water, sewerage systems)
- educational facilities
- health services and facilities
- environmental factors, such as climate, open space, air and water quality
- telecommunications infrastructure, especially broadband and mobile phone coverage.

City versus country

Many people have a strong preference for living in either the city or the country. Those who live in the city might say they prefer living there because of:

- the greater range of jobs available
- access to a wide range of shops and service providers
- greater choice of schools

- more entertainment choices
- the excitement of a faster pace of life
- access to a wide range of medical facilities.

People who live in the country might say they prefer living there because of:

- the space around them and the lack of crowds
- cleaner air and less pollution
- safer and friendlier neighbourhoods
- cheaper housing
- more opportunities for outdoor activities.

Some of the preferences listed above are being influenced by the spread of technologies such as the National Broadband Network (NBN). The use of the internet for work, educational, medical and social needs is changing the reasons why some people need to live, or want to live, in a particular place. It is, for example, making **telework** possible. Telework involves the use of telecommunications technologies as a substitute for physical travel. Thanks to telework, people who are self-employed may be able to work from a home office. This can help improve liveability by reducing traffic congestion.

ACTIVITIES

Remembering and understanding

1   Outline the factors that affect people's perceptions of liveability.
2   Contrast the different perceptions of liveability for the following groups.
    a older people and teenagers
    b people with children and people without children
3   Describe how a person's income can influence the liveability choices they make.

Applying and analysing

4   Study the lists of factors focusing on the differences in liveability between the city and country. Some of these contrasts in preference are based on facts and others are based on opinions. Copy the table below and place each factor in the correct column.

Fact	Opinion

Environmental quality and liveability

Environmental factors

People consider environmental factors when deciding about the liveability of places. The type of environment is one of the factors people think about when choosing where to live. For some people the biophysical environment is important, while for others it is services and **infrastructure**.

The positive and negative

A good way of thinking about the ways in which environmental factors affect liveability is to classify them as either push or pull factors. Places in which the pull factors outweigh the push factors are normally regarded as being more liveable. As a result, people compete to buy homes in these areas and houses become more expensive.

Areas in which the push factors dominate are often seen as being less desirable places in which to live. Housing therefore tends to be more affordable (relatively low-cost). High-income, wealthy individuals and families are able to afford to live in the most environmentally favourable places. For example, waterfront suburbs or residential areas with spectacular views are often popular and thus more expensive places in which live.

Pull factors

Lifestyle

Some people rank lifestyle-related factors above all others when they make judgements about the liveability of places. Some are attracted by the lifestyle attractions of the coast, while others prefer the mountains or bush. Some people prefer a rural lifestyle. Common to all these places is the attraction of the biophysical environment and the often quieter, slower-paced lifestyle that these places offer.

Aesthetics

For some, an aesthetic appreciation of the biophysical and constructed environments is a major factor in rating the liveability of places. Many people feel that their quality of life is made better by what they see and how they interact with a place. In many instances, aesthetic considerations are closely related to people's lifestyle considerations. Winter sports enthusiasts, for example, may find the beauty of mountain landscapes inspiring and a key to their emotional wellbeing.

Urban design

Good-quality urban design contributes to the liveability of cities. A well-designed city, town or suburb will attract people to visit, live and work. Good urban design can have a positive influence on physical and mental health by providing opportunities for better lifestyles and community interaction. Darwin's Wave Lagoon, shown in Source 6.4.1, is an example of a community facility that attracts people to an area.

Special places

People often have places that are special to them. Indigenous Australians, for example, have a strong spiritual attachment to the place in which they were born—their Country. Others have places they associate with enjoyable times in their past, perhaps a place where they spent holidays when they were young.

Climate

While many people have a preferred climate that influences their perceptions of the liveability of places, most will seek to avoid climate extremes— places that are either very hot or very cold; or very dry or very wet. Places with warm summers and mild winters are popular with many people, but especially retirees. The shift of people to Queensland's Gold and Sunshine Coasts from the southern states can be explained, at least in part, by the attractions of the region—warm climate, beaches and a relaxed lifestyle.

Recreational spaces

Many people rate a place's recreational spaces highly in terms of liveability. These are places where people can engage in sporting and leisure activities. The range and quality of these places are important and are closely related to people's preferred lifestyle choices.

Heritage

Protecting the unique heritage values of an area is important for some people's perceptions of a

Source 6.4.1 Darwin's Wave Lagoon is a safe, stinger- and crocodile-free wave and swimming lagoon.

place's liveability. For example, in some suburbs planning laws ensure that the architectural heritage of the constructed environment is maintained. In others, whole streetscapes, street plantings and long-established parks and gardens are protected to retain an area's 'leafy' and historical character.

Push factors

Pollution

Air and water pollution affect not only people's health, but also their perceptions of a place's aesthetics and amenities. Air pollution is associated with large cities and industrial complexes. While the quality of air in Western cities has improved as a result of the shift away from heavy industry and manufacturing, and advances in fuel and engine technologies, air pollution remains a major environmental issue in the cities of the developing world.

Congestion

Traffic congestion, often a result of under-investment in public transport, robs people of time with their families or participation in sport and leisure activities. It also has an economic cost because it adds to the expense of doing business. Traffic congestion has a negative impact on people's perceptions of the liveability of places.

Climatic extremes

People will normally avoid living in places where there are extremes of climate. Many people find hot and humid climates unpleasant to live and work in, while very cold climates affect people's ability to engage in a range of day-to-day activities, especially in winter.

Vulnerability to natural disasters

People are aware of the risks associated with living in particular places. They will, whenever possible, avoid living in places that are vulnerable to natural disasters. If they do choose to live in such places they will seek to reduce the risk. They can, for example, live in homes designed to resist the forces of nature.

Water shortages

A shortage of water places limits on the number of people a place can support. It also affects lifestyle-related activities of people, such as gardening and water-based recreational activities. Water shortages can also affect affordability.

ACTIVITIES

Remembering and understanding
1 Discuss the difference between push and pull factors.

Applying and analysing
2 Rank push and pull factors from the most to the least important. Explain why you ranked the factors in this order.
3 Identify any additional environmental factors that affect people's perceptions of the liveability of places.

Access to services and facilities

Goods and services

The ability to access the goods and services needed to support an acceptable standard of living is an important factor in determining the livability of places. It is also an important consideration for where people choose to live.

A good is a tangible (or touchable) thing that meets a human need. A **service** is a non-tangible good—this is, it cannot be touched, held, handled, looked at, smelt or tasted. The term 'accessibility' refers to the extent to which a product, device, service, or environment is available to as many people as possible. Accessible goods and services include:

- childcare facilities and schools
- cultural and entertainment venues
- healthcare services
- public transport
- aged care facilities and residential care services
- recreational and sporting facilities
- service stations and motor mechanics
- clubs, restaurants and cafes
- banks and other financial institutions
- high-speed broadband
- legal advice
- shopping malls and other retail outlets
- road systems
- places of worship
- sporting and leisure venues
- police, ambulance and fire services.

Changing needs

People's needs change throughout their lives. An important marker of liveability is how well cities support the wellbeing of people at different life stages. There are some goods and services that all people need access to, such as shops. There are others that relate to a person's stage of life or circumstances. For young families, childcare, schools and healthcare services are important. For retirees, healthcare services, aged care and other support services are an important consideration.

For young people, access to public transport, shopping malls and entertainment venues might be important. For those with a disability, accessible public transport and buildings, and the support services they need, are important. For those in the workforce, access to public transport or an uncongested road network may be important.

Older Australians

An increasing proportion and number of older people will require different housing, better access to health and transport services, more accessible public transport and pedestrian areas that are easier for people with poor mobility or disabilities to manage. In Australia, the proportion of the population that reported a disability in 2012 was 18.5 per cent, or just over four million people.

Locational disadvantage

Locational disadvantage results when households find it difficult to access the goods and services that enable them to improve their wellbeing over time. Those living in the poor neighbourhoods of large cities are most at risk of experiencing locational disadvantage. Most of these neighbourhoods are found on the outer edges of cities, where housing is more affordable. These suburbs are the most likely to be isolated from many of the services people depend on, such as healthcare, child-support agencies, counselling, public transport and legal aid.

The concentration of the economically and socially disadvantaged in such neighbourhoods often results in these areas becoming associated with high rates of crime, drug dependency, domestic violence, urban decay and vandalism. In some neighbourhoods the problem becomes so bad they become known as 'no-go' areas.

Source 6.5.1 Those living in public housing estates in the outer suburbs of large cities are at risk of experiencing locational disadvantage.

ACTIVITIES

Remembering and understanding

1 Explain why accessibility to goods and services is an important element of liveability. How does the concept vary from person to person depending on their age or life circumstances?
2 Explain what is meant by the term 'locational disadvantage'.

Applying and analysing

3 Working in groups, brainstorm a list of the goods and services you have consumed in the last two weeks.

   a Create a mind map of the goods and services you have used.
   b How well serviced is the place in which you live in terms of the goods and services you listed? For how many did you have to leave the place in which you live?

Evaluating and creating

4 Interview an aged person or a person with a disability. Ask them to outline the types of goods and services they use regularly and whether they are available in the place in which they live. Also ask them to assess the accessibility of the goods and services.

Measuring liveability

Liveability

The term 'liveability' refers to the qualities of a place (city, town, suburb or neighbourhood) that contribute to the quality of life experienced by those who live or visit there. Indicators of liveability typically include political stability, availability of goods and services such as health care and education, low personal risk and efficient infrastructure.

Liveability surveys

There are a number of liveability rankings published each year that compare cities around the world. The London-based Economist Intelligence Unit (EIU) publishes one of these. Each city is given a rating on 30 criteria across five broad categories:

- *stability*—the city and country are free from war and conflict, crime rates are low and the government is stable
- *health care*—access to hospitals and doctors is good
- *culture and environment*—air and water pollution are low, and there are green spaces, restaurants and entertainment facilities
- *education*—there is good access to high-quality schools and universities, and high levels of literacy for both males and females
- *infrastructure*—roads, public transport, telecommunications and power sources are accessible and reliable, and there is access to good sanitation and a safe water supply.
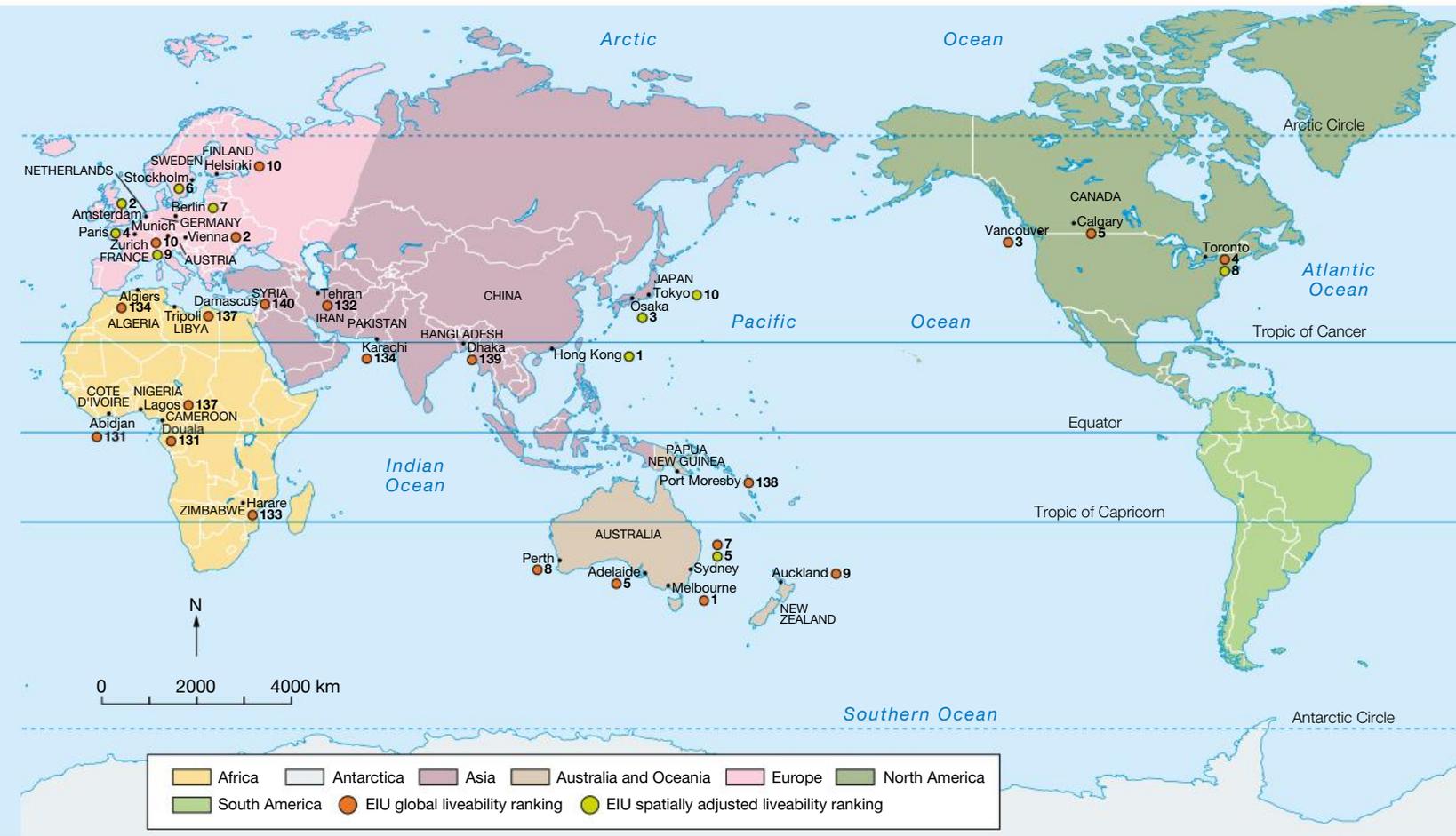
Source 6.6.1 The world's 10 most liveable and least liveable cities, as ranked by the Economist Intelligence Unit, 2012

The ratings are then totalled to give each city a score.

The EIU's 2012 liveability report ranked cities in Australia, Austria, Canada, Finland and New Zealand as the top 10 most liveable cities in the world. Cities in Africa, Papua New Guinea and South Asia were ranked among the least liveable cities. See Source 6.6.1.

New criteria

In 2012, the EIU experimented with an alternative method of ranking cities, which added new spatial criteria:

- population density (urban sprawl)
- connectivity (proximity to other cities)
- green space
- air quality.

The new method compared only half as many cities overall, and Melbourne, Vancouver and Vienna, among others, were not considered. European cities filled five of the top 10 positions, with three from Asia, one from North America and one from Australia. Hong Kong (see Source 6.6.2) was ranked first, and Sydney came in fifth.

Alternative surveys

Another annual survey is the quality of living survey conducted by the New York–based firm Mercer, the world's largest human resource consulting firm. European cities dominate Mercer's ranking, with

Source 6.6.2 The EIU's new spatially adjusted liveability ranking judged Hong Kong the world's most liveable city in 2015.

cities in Australia, New Zealand and Canada also ranked highly. Vienna, the capital of Austria, was Mercer's top-ranked city in 2015. At number 26, Singapore was the top-ranking Asian city.

The London-based lifestyle magazine *Monocle* has published an annual list of the most liveable cities since 2007. Tokyo, Japan, was ranked the most liveable city in 2015, followed by Vienna, Austria. Melbourne was ranked fourth and Sydney, fifth. The criteria used in this survey include personal safety and crime, climate, environmental issues, urban design and architecture, healthcare, public transport and international connectivity.

ACTIVITIES

Remembering and understanding

1 Describe the criteria used to determine the liveability of a city, town, suburb or neighbourhood.

Applying and analysing

2 Why do you think Australian cities rank highly on all the liveability rankings?
3 Rank the seven categories used by the lifestyle magazine *Monocle* from 1 (the most important) to 7 (the least important). Justify your response.
4 Would you add any new categories to *Monocle's* list of criteria? Why, or why not?

5 Study Source 6.6.1, then complete the following tasks.
   a List the continents in which the top 10 most liveable cities are located according the EIU's 2012 global liveability ranking (GLR).
   b List the continents where the GLR locates the 10 least liveable cities.
   c List the continent (other than Antarctica) that has no city in either the top 10 or the bottom 10 in the GLR.
   d Name the only Australian city in the top 10 according to the spatially adjusted liveability ranking (SALR).
   e Describe the differences in location between the top 10 cities in the global liveability ranking and those in the spatially adjusted liveability ranking.

Strategies to enhance liveability

How to improve liveability

There are many ways in which the liveability of a city, suburb or town can be improved. Enhancing liveability benefits people who live in, work in or visit an area. It increases property values and business activity, and it can improve public health and safety.

Liveability is greatly influenced by the type and condition of public spaces—those places where people naturally interact with each other and their community. Public spaces include streets, parks, transportation terminals and other public facilities. These are affected by public policy and planning decisions.

Transport options

Liveability is improved when planners and governments develop safe, reliable and affordable transport choices that decrease people's dependence on cars. Other benefits of this include reduced traffic congestion, improved air quality, reduced greenhouse gas emissions and improvements in public health.

Affordable housing

Another way to enhance liveability is to expand the housing choices for people of all ages, incomes, and racial and ethnic backgrounds. Building medium- and high-density housing close to major transport and activity centres (see Source 6.7.1) increases mobility and lowers the combined cost of housing and transportation.

Social places

Facilities such as aquatic centres, libraries, indoor and outdoor sporting facilities, town squares, playgrounds and skate parks can all provide attractive public spaces where people can gather and interact.

Source 6.7.1 The Elizabeth Quay redevelopment in Perth opened in January 2016 and features an inlet surrounded by a landscaped promenade, new public spaces, shops, restaurants, entertainment venues, and new office and residential accommodation.

Open space

Open space helps people to interact with the natural environment. Open spaces need to include both passive places, where people participate in recreational activities such as walking and picnicking, and active places where people can participate in sport and children can play.

Biophysical environment

A place's impact on the environment can be reduced through energy efficiency and recycling programs. Degraded land can be rehabilitated by planting native vegetation, and rural landscapes can be protected by slowing the rate of urban sprawl. Vacant land near transport, activity and employment centres provides opportunities to promote urban consolidation.

Support for communities

Existing communities can be improved by investing in public transport-focused and mixed-use developments (for example, integrating residential and commercial places). The community can be involved in important planning decisions.

Facilities and activities

People's lives can be enriched by participating in cultural and community activities, such as theatre groups, choirs, bands and orchestras.

Celebrating diversity

Celebrating the ethnic and cultural diversity of the community can enrich people's lives and promote social harmony and personal wellbeing. Examples of this approach include community festivals, celebrations and events.

Accessibility

All public and commercial spaces should be accessible to people with limited mobility, especially the elderly and those with disabilities.

Economic wellbeing

Promoting selected economic activities can create employment close to where people live. Providing the right educational opportunities develops the skills people need to gain secure, rewarding work.

Healthy lifestyles

Providing facilities and services, such as sporting venues, fitness trails, medical services, clinics and hospitals, promotes good health and personal wellbeing.

Coordinating government activities

Governments at different levels can build on the unique characteristics that define places by investing in healthy, safe and walkable neighbourhoods, whether they be rural, urban or suburban. Planning for the future can include, for example, increasing access to smart energy choices, such as locally generated renewable energy.

Enhanced streetscapes

The liveability of places can be improved by enhancing streetscapes—the visual elements of a place's streets. These include the road, adjoining buildings, street furniture, fences, trees, nature strips and open spaces, all of which combine to form a street's character. Pedestrian-friendly streets create opportunities for people to meet and interact, helping to create community networks.

Calming traffic

Traffic calming involves the construction of roadway design features that lower vehicle speeds. This can reduce traffic volumes, noise and air pollution, and improve safety, especially for residents.

ACTIVITIES

Remembering and understanding
1   List the benefits of affordable transport.
2   State the benefits of open spaces.

Applying and analysing
3   Individually rank the strategies for enhancing the liveability of places. Explain the reasons for your ranking.
4   Study Source 6.7.1. Does the Elizabeth Quay redevelopment meet any of the strategies for improving liveability discussed in this unit? Explain your answer.
5   Select four of the strategies for improving liveability that you would implement in your suburb or town.
    a   Explain why you chose those particular strategies.
    b   Describe how these strategies would improve the liveability of your town or suburb.

Taking action

Enhancing public spaces

The liveability of places directly impacts on the people who live and work there, or choose to visit. While many aspects of liveability are determined by the planning decisions of governments, individuals and groups can take action to improve the liveability of their neighbourhood.

The liveability of a neighbourhood is largely determined by the condition of shared public spaces—the places where people interact with each other. These include streets, footpaths, parks, transport terminals and other public facilities. Even though state and local governments carry out the planning, construction and maintenance of these

spaces, there is a growing trend for community-based groups to set up projects to improve public spaces.

'Farming (or gardening) the footpath' has been happening for some time in cities around the world. In programs of this kind, local residents plant fruit trees, vegetables and herbs, as well as flowers and native plants, on nature strips, next to the footpath (see Source 6.8.1) and also in community gardens. Not only does this beautify neighbourhoods, it provides food for the residents. Residents are drawn closer together through their involvement in such projects, which have been especially popular with young people. There has been an increase in interest in Australian cities, with **community gardens** being established in many suburbs.

In Totnes, United Kingdom, volunteers have been planting young chestnut and walnut trees along streets and in parks and other green spaces since 2007. In time, these trees will be harvested to provide an important food source for local communities. A similar project has been undertaken in Glandore, a suburb of Adelaide, where citrus trees have been planted along the nature strips, underneath taller eucalypts.

Protecting liveability

The responsibility for approving developments within neighbourhoods rests with government. However, local residents are able to influence decision-making processes by either supporting or opposing proposals. When development-related issues arise, activists have a range of strategies available to them to mobilise public opinion and influence decision-makers.

Assessing liveability

An individual's perception of the quality of their community is a combination of many factors that influence their day-to-day living. From their personal experiences they build a perception of their neighbourhood's worth. One way to assess liveability is to survey and score a neighbourhood or town (see Source 6.8.2).

Criteria		Score				
		Poor				Good
Law and order	• Amount of petty crime	1	2	3	4	5
	• Amount of violent crime	1	2	3	4	5
	• Graffiti and vandalism	1	2	3	4	5
	• Personal safety	1	2	3	4	5
Economics	• Employment opportunities	1	2	3	4	5
	• Affordable housing	1	2	3	4	5
	• Access to consumer goods and services	1	2	3	4	5
Environment	• Humidity and temperature	1	2	3	4	5
	• Urban design	1	2	3	4	5
	• Architecture	1	2	3	4	5
	• Parks and gardens	1	2	3	4	5
	• Streetscapes	1	2	3	4	5
	• Maintenance of public spaces	1	2	3	4	5
Culture	• Community recreational facilities	1	2	3	4	5
	• Places of worship	1	2	3	4	5
	• Restaurants	1	2	3	4	5
	• Public libraries	1	2	3	4	5
	• Entertainment centres	1	2	3	4	5
Education	• Availability of private schools	1	2	3	4	5
	• Availability of public schools	1	2	3	4	5
	• Quality of educational institutions	1	2	3	4	5
Healthcare	• Quality of private healthcare	1	2	3	4	5
	• Quality of public healthcare	1	2	3	4	5
	• Aged care facilities	1	2	3	4	5
Infrastructure	• Quality of road network	1	2	3	4	5
	• Quality of public transport	1	2	3	4	5
	• Quality of telecommunications infrastructure	1	2	3	4	5
	• Availability of good-quality housing	1	2	3	4	5
	• Provision of utilities: water, electricity, sewerage	1	2	3	4	5
	• Cycle ways	1	2	3	4	5

Source 6.8.2 A form for conducting a neighbourhood liveability survey

ACTIVITIES

Remembering and understanding

1 List the types of public spaces in which people interact with each other.
2 State the role of government in managing public spaces.
3 Describe the concept of 'farming the footpath'.

Applying and analysing

4 Rank your local neighbourhood on each of the criteria listed in Source 6.8.2, using the scale from 1 to 5. Tally the total score out of 150.
5 Repeat Activity 4 for a nearby neighbourhood. Develop a class ranking of neighbourhoods.

Better cities

Source 6.9.1 A new development in Perth, Yagun Square, will celebrate the state's heritage and provide public recreation spaces for people to meet.

The central business district

At the heart of the modern city is the central business district, or CBD. Being at the core of cities, CBDs are important places for work. Many CBDs are now also becoming popular places to live. A key question is how the liveability of such places can be enhanced.

The need for open space

A city's main commercial and business-related functions and its major public institutions, such as town halls, libraries, museums and theatres, are located in its CBD. In modern cities, large buildings dominate the urban landscape, and there is little open space. This lack of open public spaces, such as plazas and parklands, is one of the criticisms of many CBDs around the world. Such places are important, not just for environmental reasons but also as places for relaxation and recreation. In recent years, there has been a trend towards redesigning inner cities to make room for public spaces and to create green zones within the city.

Yagun Square in Perth is set to be a new recreational space, linking the CBD with the north and providing open space for people to meet, as well as shops and restaurants (see Source 6.9.1). The name 'Yagun' reflects and celebrates the Aboriginal heritage of Western Australia. Sydney's Barangaroo redevelopment, along the eastern shore of Darling Harbour, also has large areas reserved for open public space.

Greener buildings

Not only are CBDs being redesigned to make them better places in which to live and work; the buildings in them are being transformed. New technologies mean that buildings can be more environmentally friendly.

'Green' buildings are structures that are efficient in their use of energy and other resources. The greenest buildings are those that minimise energy and water use, protect the health of their occupants, improve the productivity of workers and reduce waste and pollution.

Among the greenest buildings are those with vertical gardens and roof gardens. Vertical gardens consist of special supporting frames, secured to the side of the building, which are planted with shrubs and other smaller plants. An automated watering system is installed to sustain plant life.

The vertical garden of the City of Perth Library, Cathedral Square, is 13 metres high and contains more than 3500 plants of 41 different species (see Source 6.9.2). An even larger vertical garden has been constructed in the Central Park development on the edge of Sydney's CBD. In addition to contributing to the beauty of our CBDs, vertical gardens have important environmental benefits: the plants act as insulators, helping to reduce the amount of energy needed for cooling and heating.

Source 6.9.2 The vertical garden at City of Perth Library

Source 6.9.3 One Central Park, Sydney, was designed by award-winning French architect Jean Nouvel. The tower's facade is clad in vertical gardens designed by French artist Patrick Blanc.

Other strategies

Additional strategies to enhance the liveability of CBDs are:

- enhancing public spaces and streetscapes with quality paving and street furniture, plantings and outdoor dining options
- reducing traffic congestion by discouraging vehicle access, imposing parking restrictions, providing low-impact public transport options such as trams, developing pedestrian-only areas and constructing dedicated cycleways
- encouraging a range of after-dark activities in places such as cafes, restaurants, wine bars, theatres and other entertainment venues
- enhancing public safety by the use of surveillance cameras, street lighting and additional police patrols
- encouraging a mix of retailers, including convenience stores and supermarkets.

Melbourne's Pixel Building

The Pixel Building in Melbourne (see Source 6.9.4) might look a little unusual, but it is has been labelled one of Australia's greenest buildings and one of the most environmentally sustainable structures in the world. The innovative building was the first in Australia to achieve the highest possible green rating and has received many architectural and environmental awards.

What makes the four-storey building so green is a combination of construction materials and design features. The building was built using a new type of concrete called Pixelcrete. Compared with standard concrete, the manufacture of Pixelcrete produces only about half the amount of carbon dioxide, a major cause of global warming. The roof is covered with native grasses, which help to insulate the building against summer heat and winter cold, thereby reducing energy use. Solar cells on the roof generate power.

Another energy-saving device is found in the windows, which have a special feature called 'night purging'. Concrete and glass absorb heat during the day and can retain heat overnight in an enclosed building. In the Pixel Building, computer technology is used to open the windows on cool nights, allowing air to flow through the building and cool the structure. Cooling the building at night in this way reduces the need for air conditioning during the day.
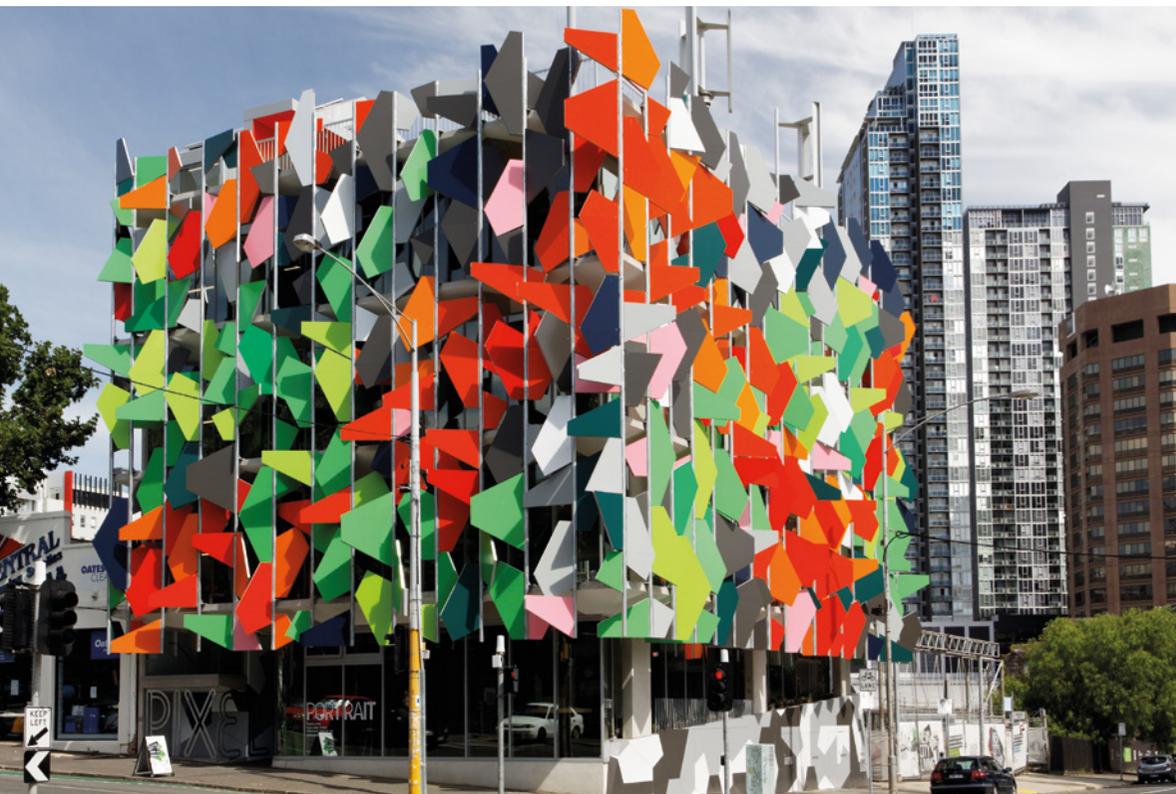
Source 6.9.4 The Pixel Building in Melbourne is one of the greenest buildings in the world.

The building contains reed beds, through which grey water flows from showers, sinks and handbasins. These beds filter the water before it enters the stormwater system; they also act as a natural form of air conditioning. Sunshades on the windows help to reduce the amount of heat in summer and can be opened to allow natural light into the building, further reducing energy needs.

Other interesting features include vacuum toilets that minimise water use, and onsite water collection and storage that make the building 'water neutral'. This means that the building captures and stores the same amount of water as it uses.

Barangaroo parklands

From as early as 1820 this north-western section of the edge of Sydney's CBD served a variety of port-related functions. As well as wharves, there were boatbuilding and boat repair facilities. It continued to be an important waterfront area until the early part of the 21st century, when the container terminal on the site was moved to Port Botany.

An important part of the project is the development of Headland Park. The park opened in August 2015 and contains more than 75 000 native plants, including 600 mature, large trees. The park contains walking trails, cycle tracks and a cove for small boats.

The park has greatly enhanced the liveability of Sydney by returning to public use parts of the harbour foreshore that have been off-limits for more than a century. It also provides an important recreation space for the surrounding population of residents and workers (see Source 6.9.5).

The park and the nearby area are named after Barangaroo, who was a powerful Aboriginal woman at the time of the first British settlement in Sydney. She commanded authority from the early colonists and fiercely maintained traditional customs.

Source 6.9.5 The construction of Headland Park at Barangaroo, NSW, transformed former dock, left, into public space, right.

ACTIVITIES

Remembering and understanding

1 Outline the role and features of a typical CBD.
2 State the advantages of 'green' buildings.
3 Explain what a vertical garden is. What are the advantages of vertical gardens?
4 Describe the benefits of Headland Park at Barangaroo.

Applying and analysing

5 Write a report outlining the various ways in which the liveability of CBDs can be enhanced.

6 Develop a plan for an open public space in a CBD. Think carefully about the facilities and features you would like to include.

Evaluating and creating

7 In pairs, brainstorm a list of the ways in which the Barangaroo development enhances the liveability of Sydney. Record your findings in a table.
8 Investigate another example of a green building. What are its green features?

Better recreational spaces and schools

Better recreational spaces

The liveability of communities and neighbourhoods can be improved by enhancing the quality of recreational spaces and schools.

In densely populated cities there will always be competing demands for the limited supply of land. As the world's population becomes increasingly urbanised, there is a growing demand for recreational spaces. It is important to ensure that our recreational spaces are well designed and that they meet the varied needs of the community. It is also important that government authorities insist on recreational space being part of all future developments.

Recreational spaces provide important health benefits by giving people somewhere to exercise and somewhere to relax. Benefits of this kind are sometimes referred to as 'wellness'. Fresh air itself has numerous health benefits. A recent study from California, United States, for example, found that the air outside was on average 25 to 62 per cent cleaner than the air people breathe inside buildings.

In Australia, one of the best examples of recreational spaces is the Geelong Youth Activities Area, in Victoria, shown in Source 6.10.1. The area has won a number of design awards, including the 2010 Australia Award for Urban Design. It caters for many different activities. There are outdoor areas for large events such as music festivals, there are basketball courts and spaces for BMX and skateboarding, and there is wireless internet connection throughout. Importantly, young people were involved in the design of the area, making it a place where activities popular among young people are not just tolerated, but promoted. For example, there are 'skateable' surfaces where skateboarding tricks are encouraged.

Source 6.10.1 The award-winning Geelong Youth Activities Area provides a range of activities for the city's young people.

Source 6.10.2 (a) Before 2002, a freeway ran through Seoul, South Korea, where once the Cheonggyecheon River flowed.

(b) The Cheonggyecheon River redevelopment saw the freeway demolished, the river returned and parklands built.

Reclaiming recreational space

Two cities noted for their transformation of vacant land into parkland are Seoul and New York.

Seoul

Seoul, the capital of South Korea, has a population of more than 10 million people. This huge city has a reputation for heavy traffic and high pollution levels, and for being a 'concrete jungle'. However, in 2005 the city hit international headlines for an amazing parkland project.

The Cheonggyecheon River runs through the centre of Seoul, its name meaning 'clear valley stream'. By the 1970s, the river had become heavily polluted, and there were run-down buildings along its concrete-lined channel. It was far from being a clear valley stream. As the average wealth of South Koreans grew, so did the number of cars they owned. The Cheonggyecheon River was filled in and converted into a road. Later, a six-lane elevated freeway was constructed over it.

In 2002, Lee Myung-bak, who was mayor of Seoul at that time, announced an extraordinary plan to tear down the freeway and build a 12-kilometre-long park along the course of the old river. The freeway carried more than 160 000 cars a day and was considered crucial to Seoul's economy.

Within two years the freeway was gone and so were the cars. The loss of the freeway forced people to rethink their travel habits. Public transport use increased. The Cheonggyecheon River was restored and began to flow again, and the people of Seoul were given a beautiful new park to enjoy. One amazing outcome of the project is that the average temperature around the park has fallen by up to 3 degrees Celsius. This is because the hard concrete surfaces that once absorbed heat have been replaced by grasses and water. The Seoul experience was so successful that similar projects are being planned in Shanghai, China.

Source 6.10.3 High Line park in New York was built on an old elevated railway line. It shows how disused industrial land can be made into parkland.

New York

New York, in the United States, is famous, among other things, for its skyline and large Central Park. Since 2011, it has also become known as a city with an elevated park. The High Line linear park (see Source 6.10.3), in the city's Meatpacking District, took the place of an elevated railway line that had been built in the 1920s but was no longer used. In 1999, plans were put forward to demolish the line. Instead, US$115 million was invested in converting the line into an elevated park. The park features lawns and forested areas. Economists estimate that the park has generated at least US$2 billion in investment in housing, commercial and retail projects in the newly revitalised district surrounding it.

Better schools

Until recently, the design of schools had not changed very much in hundreds of years. Most schools still have separate classrooms with desks in neat rows and a board at the front of the room. Learning is beginning to change, however, and the way we build schools is also beginning to change.

Today, there is much greater use of technology in classrooms. Even very young primary school students have access to computer-based learning. It is common for students to be working, not just with other students in their class, but with students on the other side of the world—for example, when doing maths problems on the internet.

To cater for this type of learning, different and more flexible learning spaces are important. The Hellerup School in Denmark is often described as the most innovative school in the world. Some of the features of the Hellerup School are now appearing in Australian schools, such as Dandenong High School in Victoria (see the Spotlight box 'Schools of the future').

Schools of the future

At the Hellerup School in Denmark, there are few classrooms. Instead, there are many rooms of different sizes that can be used for meetings between students and teachers. There are large open spaces where students can work by themselves or in small groups, as well as small rooms for quiet work.

Hellerup, and schools such as Dandenong High School in outer Melbourne, take a non-traditional approach to learning. As a result, they need buildings that serve different purposes and that are flexible. For example, a class may work together for part of a lesson and so need a larger space, then work in small groups on a research task and so need a different type of space.

In Dandenong, web-based learning programs such as Moodle help students to stay connected with teachers and peers. Students access these online resources through a range of technologies. At Hellerup, students are encouraged to use their smartphones as a way of communicating with teachers and also to help with research tasks.

Source 6.10.4 Hellerup School in Denmark has adopted a different design approach.

Case study: Manchester, United Kingdom

Industrial beginnings

Manchester, located in the north-west of England, was the world's first great industrial city. With its steam-powered cotton mills, Manchester became the centre of the new textile industry that signalled the start of the Industrial Revolution. Manchester declined as an industrial centre during the 1960s, but recent large-scale urban renewal projects have brought new vitality to the city.

For most of Manchester's history the city relied heavily on industries attracted to the region by a ready supply of coal. The coal was used to produce the energy that drove the new steam-powered machines.

Cotton processing

The Flemish people who settled in the area in the 14th century established a weaving tradition in Manchester. So, when cotton became available from Britain's colonies in the 18th century, Manchester had an early advantage. The invention of steam-powered spinning machinery introduced mass production to the cotton industry. Manchester had access to the water and coal needed by the new large factories.

Astonishing growth

As the cotton industry boomed around the turn of the 19th century, Manchester began to grow rapidly. At its peak in 1853, the city had over 100 mills. It became the world's main centre for cotton processing and was at the very heart of the global cotton trade.

Building on its beginnings in cotton processing, Manchester went on to develop a wide range of industries. The engineering firms that made the machines for the cotton mills diversified into other metal products, and the chemical industries that made bleach and dye moved into other commodities. Other commercial interests in Manchester, such as banking and insurance, supported these industries.

Thousands of people, including many who were fleeing the potato famine in Ireland, came to Manchester looking for work. The mill workers were very poor, and they lived in a maze of damp, poorly lit and filthy dwellings in overcrowded slums. The **Industrial Revolution** brought wealth to Manchester's merchants and factory owners, but a large part of the population lived in poverty and squalor.

The Manchester Ship Canal

In 1894, the merchants of Manchester built a canal linking the city to the Irish Sea. The canal enabled ocean-going ships to reach Manchester's docks, some 58 kilometres inland. This provided direct access to raw materials as well as to markets for manufactured products. It made Manchester more competitive by removing the need to transport goods to and from the Port of Liverpool.

On the banks of the canal at Trafford Park, the world's first planned industrial estate was established in 1896. In 1899, British Westinghouse became the earliest engineering company to locate there when it began building a factory to manufacture turbines and generators. In 1911, the US car manufacturer Ford opened a factory there and introduced its pioneering assembly-line method of production.

Manchester's canal and rail links soon enabled the city to become a centre for the processing and distribution of food. In 1938 the Kellogg Company opened a major industrial complex at Trafford Park. Kellogg's Corn Flakes are still made there today.

Trafford Park expanded rapidly during World War One and World War Two as factories converted to bomb and munitions production. The famous Spitfire fighter planes and Lancaster bombers with their Rolls-Royce Merlin engines were also made there. At its peak in 1945, Trafford Park employed 75 000 workers in the war effort. Employment held up well during the 1950s, but the 1960s brought the first factory closures. The changing use of the Manchester Ship Canal can be observed in Sources 6.11.1, 6.11.2 and 6.11.3.

Manchester Dock No. 9 in about 1900. The Manchester Ship Canal can be seen in the foreground of the picture, and Dock No. 9 is on the left.

Source 6.11.2
Salford Quay 19 in 1971, showing the Manchester Ship Canal and the lower end of Manchester Dock No. 9 at top centre.

Source 6.11.3
Salford Quays in 2012, showing the Manchester Ship Canal on the right of the picture and Manchester Dock No. 9 in the centre. MediaCityUK is in the foreground.

Industrial decline

During World War Two, Manchester was bombed by the German air force, the Luftwaffe, and large parts of the city were destroyed. The postwar years became difficult for Manchester. The early source of the city's wealth was gone: the cotton exchange closed in 1968 as cotton trading declined. At the same time, heavy industry suffered an economic downturn, and companies closed their factories. Manchester lost 150 000 manufacturing jobs between 1961 and 1983.

In 1982, the Port of Manchester closed. The Manchester Ship Canal could not handle the new generation of large container ships. This led to a further drop in the city's fortunes.

Revitalisation

More recently, Manchester underwent extensive regeneration (urban renewal). This was spurred on by efforts to recover from an Irish Republican Army terrorist bomb attack in 1996, and was further aided by investments in infrastructure for the 2002 Commonwealth Games. Large sections of the city were either demolished and rebuilt, or **gentrified**, with former mills and warehouses converted into apartments.

Trafford Park Development Corporation

The British government was involved in early efforts to assist Trafford Park, but these had only limited success because the transport infrastructure of the country's first industrial estate was outdated. In 1987, the Trafford Park Development Corporation (TPDC) was established to promote the area. It completed an infrastructure program with upgraded highways and a bridge that linked Trafford Park to major motorways, making it more attractive to investors.

The TPDC was finally dissolved in 1998, having exceeded all its targets for reversing the decline and creating jobs. It had attracted 1000 companies and approximately $2.7 billion of private-sector investment, and created more than 28 000 new jobs. Trafford today has over 10 000 businesses, including international brands such as Kellogg's and L'Oréal. Modern high-tech industries and distribution operations have moved into Trafford in significant numbers. The park is also home to creative and digital companies, including UK television networks and an app development company. Additionally, the major soccer brand Manchester United is quite appropriately located at Trafford Park.

The Atlantic Gateway

The opening of the Manchester Ship Canal in 1894 and the subsequent loss of jobs in the Port of Liverpool led to increased rivalry between Manchester and Liverpool. The 2011 Atlantic Gateway strategy, which is now underway, establishes a commercial corridor between the two cities. The strategy is backed by $80 billion of investment over 50 years. It is the largest development project in UK history.
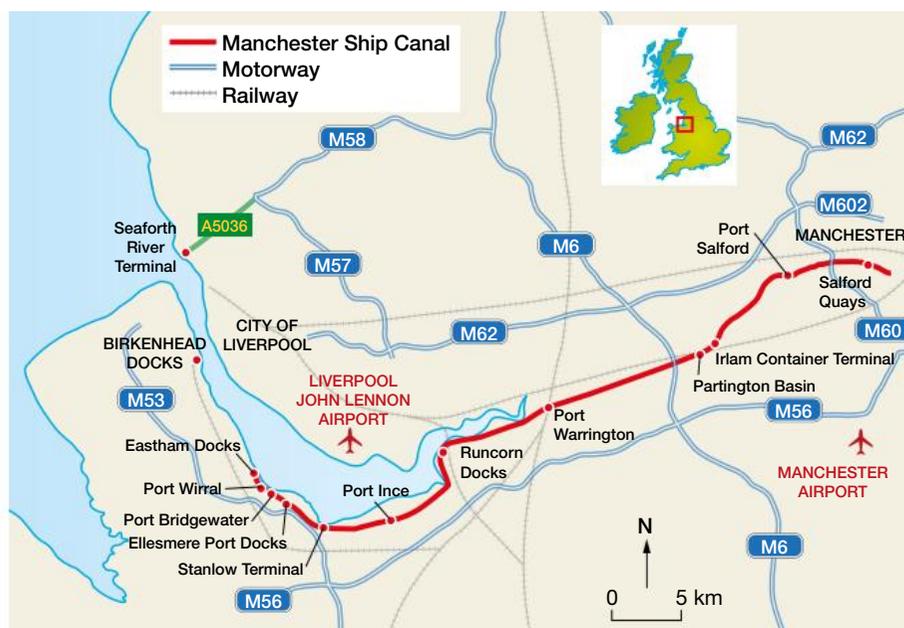
Source 6.11.4

The Atlantic Gateway strategy provides the transport infrastructure needed to improve supply chains for businesses across the north-west of the UK.

The Atlantic Gateway provides a central distribution base to improve supply chains for businesses across the north-west of the United Kingdom (see Source 6.11.4). The Port of Liverpool is being redeveloped, along with the Manchester Ship Canal. Companies are able to move their freight on barges along the canal between the Port of Liverpool and the Manchester docks. This lowers costs, is better for the environment and takes heavy trucks off the region's roads. The first phase of freight centre on the banks of the canal in Manchester was completed in 2016, and a second phase of its redevelopment is currently underway.

Salford Quays

The site of the former Manchester Docks has become one of the largest urban regeneration projects in the UK. Salford Quays is now a prosperous quarter of the city. The most significant development is MediaCityUK, which is set to make Manchester a global hub for digitally driven industries. The aim is to make Manchester the creative capital of Europe. Already Salford Quays is the new home of:

- the British Broadcasting Corporation (BBC), which moved five departments, including the BBC Children's division and BBC Sport, to Salford in 2011
- SIS Live, Europe's largest outside broadcast and satellite uplink provider
- one of the biggest high-definition media studios in Europe.

Salford Quays also has a thriving residential community, which is well served by hotels, coffee shops, recreation facilities and cultural attractions.

Manchester today

The city has become notable for its vibrant cultural and music scene; its creativity, media links and sporting connections; and its scientific and engineering output. Manchester is probably best known around the world for its Premier League football teams Manchester City and Manchester United. Manchester United is one of the most famous football clubs in the world and claims to have a fan base of more than 650 million people worldwide.

There is a sense of optimism associated with the revival of Manchester. There are still people living in poverty. However, for those who have chosen to live in the Manchester community, there are now more opportunities available.

> ### Did you know?
> In Australia, New Zealand and South Africa, the term 'manchester' refers to household items such as sheets, pillowcases and towels.

ACTIVITIES

Remembering and understanding

1 Explain why Manchester came to dominate the cotton industry.
2 Describe the types of industries that existed in Manchester in the nineteenth century.
3 Account for the decline in manufacturing in the postwar years.
4 Outline the efforts that have been made to revitalise Manchester in recent decades.

Applying and analysing

5 Demonstrate how the MediaCityUK development at Salford Quays is a premier location for media companies to relocate to. Include the following in your response:
- the names of media companies already there
- facilities
- infrastructure.

6 Study Sources 6.11.1, 6.11.2 and 6.11.3. Describe the changes that have taken place in the Salford Quays area of Manchester since 1900.
7 Study Source 6.11.4, then answer the following questions.
   a Describe the transport infrastructure associated with the Atlantic Gateway strategy.
   b What is the distance travelled from the Seaforth River Terminal to Port Salford by:
      i canal
      ii road
      iii rail?
   c Do you think it would be quicker to move goods by canal, road or rail? Explain.
   d What are the benefits of moving goods by the canal?

Investigating neighbourhoods

Choosing a neighbourhood

The aim of this fieldwork activity is to investigate your local neighbourhood. You will need to undertake research online and in the field. After you collect your data, you will assess your neighbourhood and the facilities available.

People choose to live in a particular neighbourhood for a variety of reasons. These reasons include:

- attachment to a place
- being close to family and friends
- employment opportunities
- affordability
- life-cycle stage
- lifestyle considerations
- personal safety
- environmental factors, including climate
- educational and healthcare facilities
- culture and ethnicity
- commuting time and public transport options.

Land-use map

A land-use map is a thematic map showing the distribution of different land uses. The following steps explain how to construct a land-use map of your neighbourhood.

STEP 1

Access an outline map of your local neighbourhood. Local council websites can usually provide a map. You can also use an online digital map service such as Google Maps. Print a copy.

STEP 2

Using your outline map, conduct a land-use survey of your local neighbourhood. Make a legend for your map that contains the following land-use categories. Colour-code these land uses on your map. Use Source 6.12.1 as a guide.

- Low-density residential
- High-density residential
- Commercial
- Recreational
- Place of worship
- Other
- Medium-density residential
- Transport
- Retail
- Industrial
- Educational
- Bike paths

STEP 3

Take digital photographs of the diversity of land uses found in your local neighbourhood. Link these images to your land-use map.
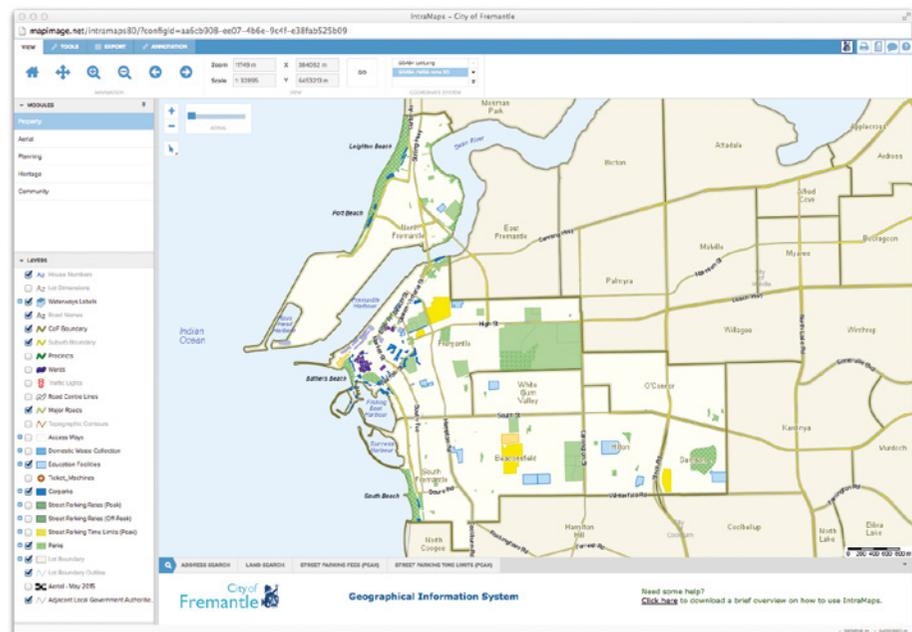
Source 6.12.1 A map of a neighbourhood on a local council website

A multimedia presentation

STEP 1

Use a digital recording device, such as a flip camera, to capture footage of your local area. Select scenes that are representative of your neighbourhood, such as:

- residential areas
- commercial areas
- educational and healthcare facilities
- religious sites
- transport services
- recreational sites
- special events/festivals/celebrations.

STEP 2

Record interviews with members of your community. Ask them to reflect on what it is like to live in your neighbourhood. You may choose to select people who have lived in the area for varying lengths of time. This will help you to determine if things have changed over time—and, if so, in what ways they have changed.

STEP 3

Combine your footage into a multimedia presentation by adding a commentary, music and even text to highlight what is especially important in your neighbourhood.

Survey of retail businesses and services

STEP 1

Access an outline map of your local neighbourhood, as described earlier under 'Land-use map'. Zoom in on a local retail centre. You may live in a neighbourhood with more than one retail centre; if so, select just one retail centre to survey. Print a copy of the map.

STEP 2

Using the following list, conduct an audit of the number and type of retail and service providers found within your local retail centre.

- supermarket
- butcher
- fruit shop
- newsagent
- hairdresser
- café
- restaurant
- hotel
- medical consulting rooms
- service station
- real estate agent
- solicitor's office
- shoe store
- pharmacy
- takeaway food outlet
- post office
- club
- dentist
- bank or credit union
- travel agent
- spa
- clothing store

STEP 3

On your map, locate and label the different types of shops and commercial businesses found in your local retail centre. Photos can be taken of examples of each activity. Make a record of any businesses that have closed, or are up for sale or vacant.

Statistical profile

STEP 1

Access the QuickStats page on the Australian Bureau of Statistics (ABS) website. To do this, go to the ABS home page and select **Census** from the options at the top. Select **Data & analysis** on the left and then select **QuickStats** from the dropdown menu. Type the name of your neighbourhood in the QuickStatsSearch box and click **Go** to access Census data related to your neighbourhood (see Source 6.12.2).
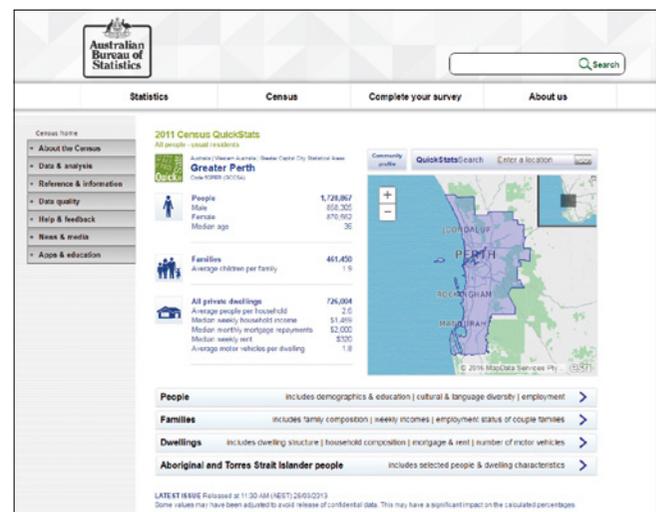
Source 6.12.2 Location QuickStats page on the ABS website

STEP 2

Use the Census data provided to develop a profile of your local neighbourhood. Include information related to:

- the total number of people
- age
- gender
- place of birth
- languages spoken at home
- marital status
- family type
- employment status and occupation.

Climate profile

STEP 1

Go to the Bureau of Meteorology website. On the home page, click **Climate and Past Weather**. Click **Weather and climate data** on the lefthand menu to access the Climate Data Online page. You can choose the data you wish to access using either tab, **Select using Text** (see Source 6.12.3) or **Select using Map** (see Source 6.12.4).

STEP 2

SELECT USING TEXT

In section 1 of the tab, select **Weather & climate**. Under 'Statistics', click the **Monthly** button.
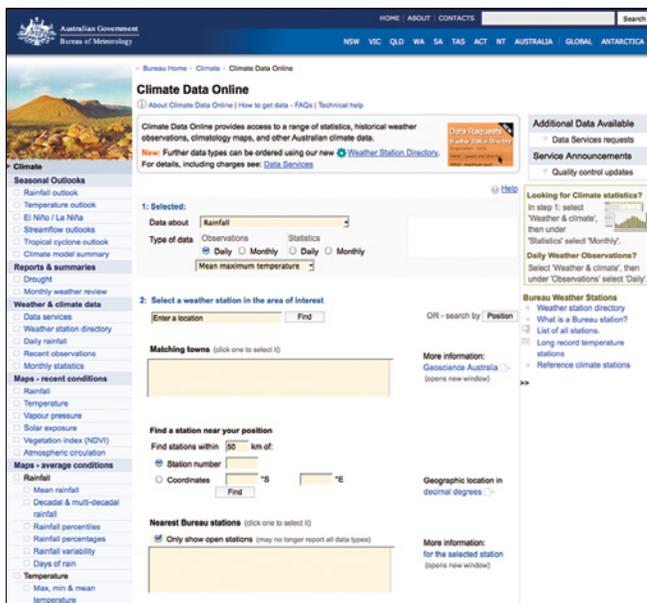
Source 6.12.3 Selecting climate data using text
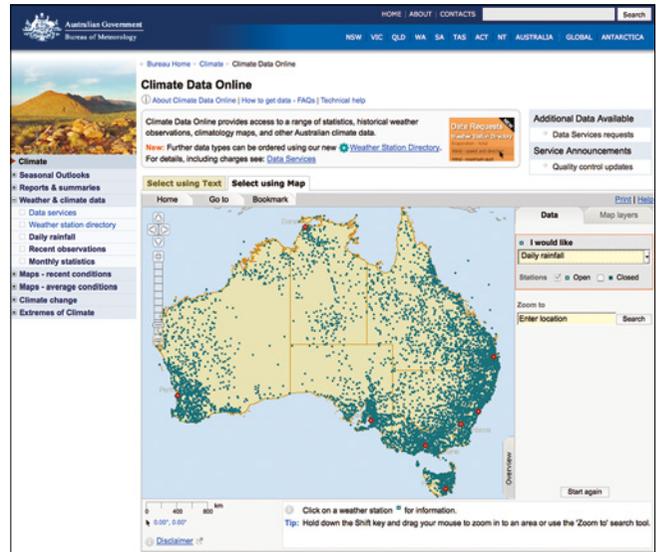
Source 6.12.4 Selecting climate data using a map

In section 2, type the name of the location you want to investigate in the box. Click the **Find** button. Click to select your chosen location from the list. Click the Bureau station closest to your location.

In section 3, click the **Get Data** button.

SELECT USING MAP

In the **Data** tab, under 'I would like', select **Climate statistics**.

Under 'Zoom to', type the name of the location you want to investigate in the box. Click the **Search** button. Under 'Select town', click to select your chosen location from the list.

On the map, click the symbol of the weather station closest to your chosen neighbourhood. Click **Monthly climate data**.

STEP 3

Create a climate graph of your local neighbourhood. Use the following statistics:

- mean maximum temperature
- mean minimum temperature
- mean rainfall.

Aim

To investigate the liveability of your local neighbourhood and assess the facilities available.

Method

1 Construct a land-use map of your neighbourhood. Add to your land-use map the photographs you have taken and mount a wall display showing the diversity and location of various land uses in your local neighbourhood.
2 Complete a statistical profile of your local neighbourhood.
3 Audit the retail businesses and services located in your local neighbourhood.
4 Complete a climate profile of your local neighbourhood.

Option 1: A multimedia presentation

Use a digital recording device to record footage of your local area and interview residents.

Option 2: Local history

Investigate the historical background of your local neighbourhood. Include in your response:
• the origin of the name of your local neighbourhood
• Aboriginal and Torres Strait Islander history
• European history.

Option 3: Meeting special needs

Using the data collected in Method steps 1–4 above, identify the groups within the local neighbourhood that have special needs (for example, the elderly, the disabled, young children, teenagers). Identify how the needs of one such group are being met or not met in the local neighbourhood.

Evaluation

1 Describe the mix of retail outlets and service providers located in your local neighbourhood centre.
2 Do the facilities provided match the statistical profile of the area, or are there retailing and services missing? Explain your answer.
3 Look at the climate profile of your neighbourhood. Are the types of services provided appropriate for the climate? Explain your answer.

4 Choose five features from the following list of neighbourhood facilities that you would value having in your local neighbourhood.
• skateboard bowl
• public housing
• indoor sports complex
• church
• youth club
• shopping mall
• nursing home
• aquatic centre
• café
• restaurant or takeaway food outlet (e.g. McDonald's or KFC)
• freeway interchange
• railway station
• primary school
• secondary school
• convenience store
• factory
• adventure playground
• football field
• cinema complex
• service station

a Refer to the rating scale below and rate how close to your home you would be happy to have each of these five features.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

b List those features that you would value in your local neighbourhood but would not want too close to your home. Explain your answer.
c Suggest three different groups of people in your local neighbourhood who might disagree with your choices. How and why might their views differ?

Conclusion

If you could, would you make any changes to your local neighbourhood? Why, or why not?

Inquiry tasks

Improving your local area

The term 'liveability' is used to describe the extent to which a place (town, city, or neighbourhood) is able to support a quality of life that maximises residents' wellbeing. However, 'liveability' has different meanings to different people.

a Working in pairs or small groups, your task is to choose a teenage-friendly facility you would like to develop in your local neighbourhood, and select a location for it. Suitable facilities could include:

- a skate park
- a new indoor sports and recreational facility
- a swimming pool
- a cinema complex
- a library
- open-air cinemas
- better public transport, e.g. safer train stations or more buses and extended bus routes
- more shops and cafes
- cycle paths
- green open spaces
- a free wi-fi network
- an area for free activities such as music concerts.

b Prepare a multimedia display of your plans. Include the following in your presentation:

- a map of the area with the location shown
- details about what is to be built or developed
- examples of similar facilities elsewhere
- the benefits to the local community (you may want to include the 'costs' of the plan)
- an indication of who is likely to use the facility.

c Outline your social network campaign. Include in your plan:

- the social networks you are going to use
- the people or groups your campaign will target; these could include:
  - the local mayor and councillors
  - the local state and/or federal Member of Parliament
  - community groups
- the message you are going to send to each group or person

Measuring liveability

One method of measuring liveability, as described in Unit 6.6, is to use the rankings published by the Economist Intelligence Unit. Another means of measuring liveability, called the gross national happiness (GNH) index, was announced in Bhutan in 1972. It was first introduced to counter the idea that economic statistics were the only way to rate liveability. Much has been written and many debates have been held about the value of measuring liveability beyond economic indicators.

Your task is to conduct internet research on how the GNH index is measured. Once you have completed this research, answer the following questions.

a How does a person's overall happiness depend on the environment in which they live?

b To what extent does a person's happiness influence their perspective on whether or not a place is liveable?

Discuss your answers with the person sitting next to you.

Liveability from around the world

Vancouver, shown in Source 6.13.1, is often rated as the world's most liveable city.

a Select two or three cities from around the world. Ensure that you select cities from different continents. Conduct research into the following aspects of liveability for each of the cities you choose:

- Law and order
- Economics
- Environment
- Culture
- Education

Vancouver, the world's most liveable city

- Healthcare
- Infrastructure

  Present your findings in an annotated visual display. Central to your display should be a map of the world with each of the cities you chose marked and labelled on it. Your display can include images, graphs and tables.

b Write a short response comparing and contrasting the liveability of the cities you chose.

Building a garden for others

The chapter has covered several examples of how a farmed footpath or community garden improves a community space. In small groups, produce a design for a footpath or community garden. Some ideas for building gardens could include:

- a musical garden that uses recycled materials
- a sensory garden for vision-impaired community members
- an edible garden for young children, to teach them where food comes from
- a historical garden that uses heirloom seeds and contains a mix of old-rose varieties.

Each group then presents their garden designs to the class. A class vote could be used to determine the winner.

GLOSSARY

accessibility the extent to which a product, device, service, or environment is available to as many people as possible

aesthetics the value of a landscape based on its beauty or attractiveness

community garden a garden that is planted and tended by members of a community, who then share any produce and other benefits that result

gentrified describes an inner-city neighbourhood where housing has been renovated by middle-class people new to the area

Industrial Revolution the rapid development of industry in the early 19th century, brought about by the introduction of steam-driven machines

infrastructure physical structures that allow a society to function, such as buildings, roads, water pipelines, sewers, electricity distribution systems, railways and airports

liveability the qualities of a place (city, town, suburb or neighbourhood) that contribute to the quality of life experienced by those who live or visit there

perception how something is seen or regarded by someone

quality of life the happiness, wellbeing and satisfaction that a person experiences. Among the many factors that influence quality of life are a person's family circumstances, income and access to services

service a non-tangible good—this is a good that cannot be touched, held, handled, looked at, smelled or tasted

spatial inequalities distinct geographical divisions between poor and wealthy populations

telework work that involves the use of telecommunications technologies as a substitute for physical travel

The ancient world: Overview

Archaeological evidence shows that modern human beings originated in Africa in about 150 000 BC, during the Stone Age. From about 100 000 BC onwards, small family groups drifted northwards to Asia. The most important human movement began in about 60 000 BC during the last Ice Age, when humans began migrating out of Africa. By 10 000 BC, our hunter-gatherer ancestors were becoming farmers and herders. The new farming way of life led to growth of permanent settlements and the rise of the earliest **civilisations**.

The first of these civilisations was Sumer, in present-day Iraq. It was settled in about 3800 BC. Other early civilisations developed in north Africa, around the Mediterranean Sea and in Asia.

Source 7.0.1 Temple of ancient Egyptian pharaohs

**200 000–12 000 BC
Old Stone Age
(Palaeolithic period)**

3800 BC First evidence of Sumer civilisation

3000 BC City-states emerge in Sumer

Indus Valley civilisations begin

Ancient Egypt emerges along the Nile River

2205 BC Ancient China emerges

2000 BC Ancient Greece begins

1595 BC Sumer ends

1400 BC Decline of Indus Valley civilisations

Ganges Valley (Vedic period) civilisation emerges

**12 000–2000 BC
New Stone Age
(Neolithic period)**

753 BC Ancient Rome begins

320 BC End of Ganges Valley civilisation

146 BC Ancient Greece conquered by Rome

30 BC Ancient Egypt conquered by Rome

220 AD End of ancient era of China

476 AD Rome falls to invading barbarians
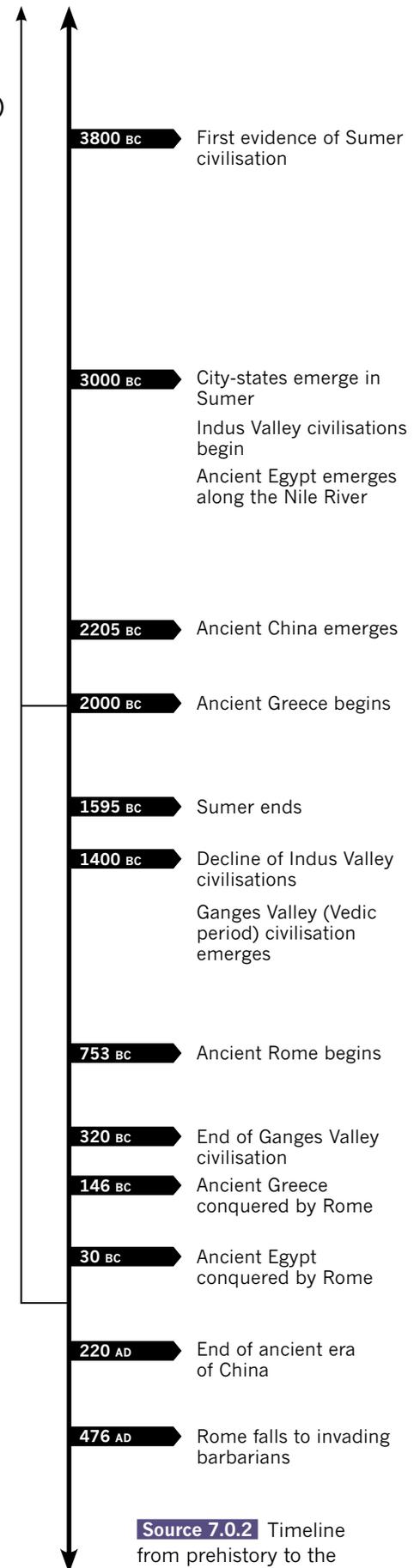
Source 7.0.2 Timeline from prehistory to the first civilisation

Ancient civilisations and empires

Prehistory

The period of human history before the development of writing by the Sumerian civilisation around 3800 BC is referred to as prehistoric times. This period dates back to about 150 000 BC. In those hundreds and thousands of years, *Homo sapiens* evolved and migrated out of Africa to **colonise** the world. During the Old Stone Age or **Paleolithic** era humans developed hunter-gatherer lifestyles and gradually began adopting a farming and herding way of life in the New Stone Age or **Neolithic** era.

Ancient history

One of the first human achievements, which marks the beginning of ancient history, is written records. The Sumerians were the first civilisation to develop a system of writing to record their beliefs and daily life. These written records have provided valuable evidence for historians to learn about life in ancient times. To learn about prehistoric times, historians can only rely on human-made objects or **artefacts** and human remains to gain knowledge of the prehistoric way of life.
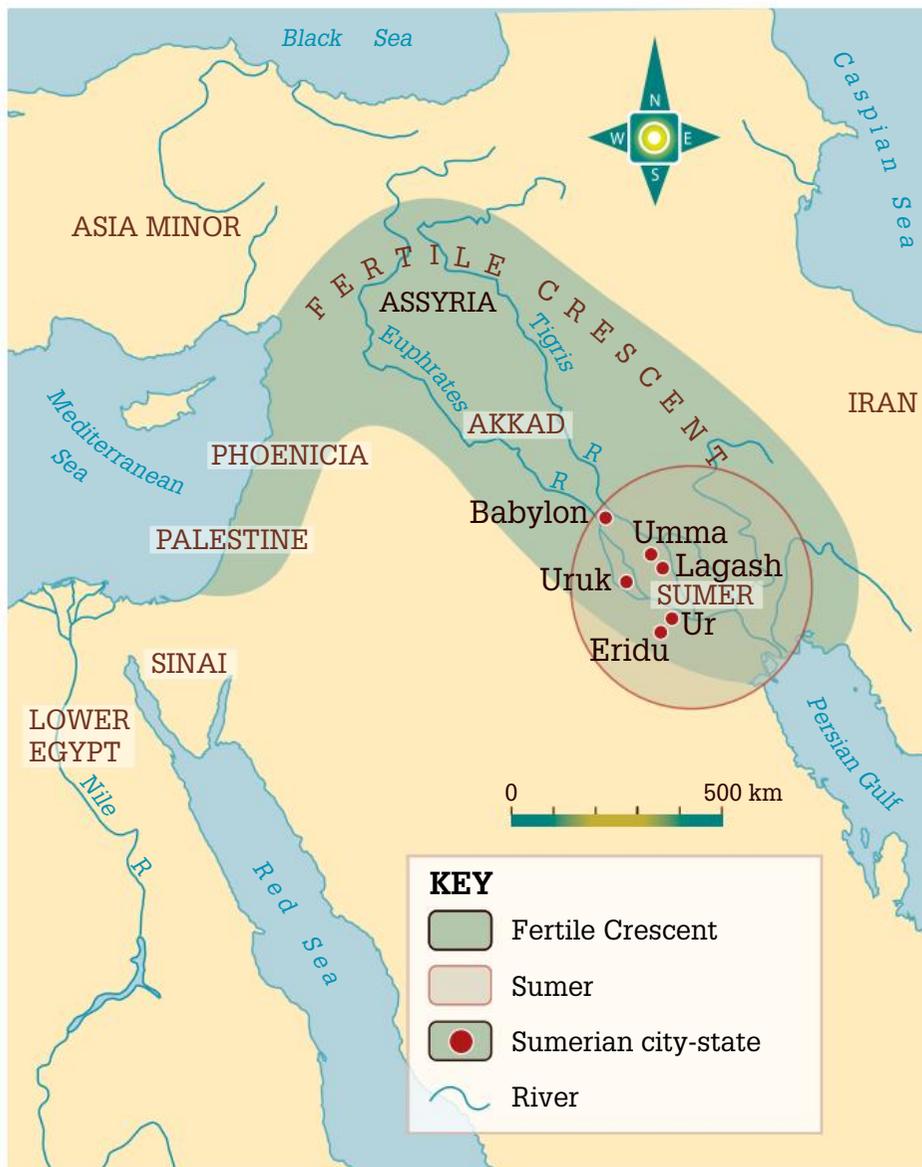
Source 7.1.1 Sumer and its location in the Fertile Crescent

Ancient civilisations

Sumer was the earliest of the ancient civilisations. It developed on a fertile river plain, named by historians as the Fertile Crescent, between the Tigris and Euphrates rivers in southern Mesopotamia (see Source 7.1.1). Other civilisations also developed in Mesopotamia and in Africa, Europe, Asia and Central America (see Source 7.1.2). Where these civilisations grew, humans developed a more advanced and organised social and cultural way of life.

1 The ancient Egyptian civilisation was located in the Nile valley where there was a reliable and abundant water supply and fertile soil from silt deposited by the river's annual floodwaters. The success of this civilisation stemmed from its ability to adapt to the conditions of the Nile. Ancient Egyptians irrigated their farmland and organised their yearly farming calendar around the river's annual flooding.

2 Sumer was located between two large rivers, the Tigris and Euphrates. Like Egypt, the land was fertile and water from the rivers was used to irrigate crops. Sumerians were the first to have kings as rulers, to invent the wheel and plough, and oars for their ships.

3 The Indus River in north-west India was the site of two ancient cities, Mohenjo-Daro, nearer the coast, and Harappa, further inland. The river valley had fertile soil from the silt deposited by floodwaters. The people here were the first to make cotton cloth and to sell it.

KEY
- ① Elam 2700–539 BC
- ② Akkad 2334–2193 BC
- ③ Mayans 1000–250 BC
- ∿ River
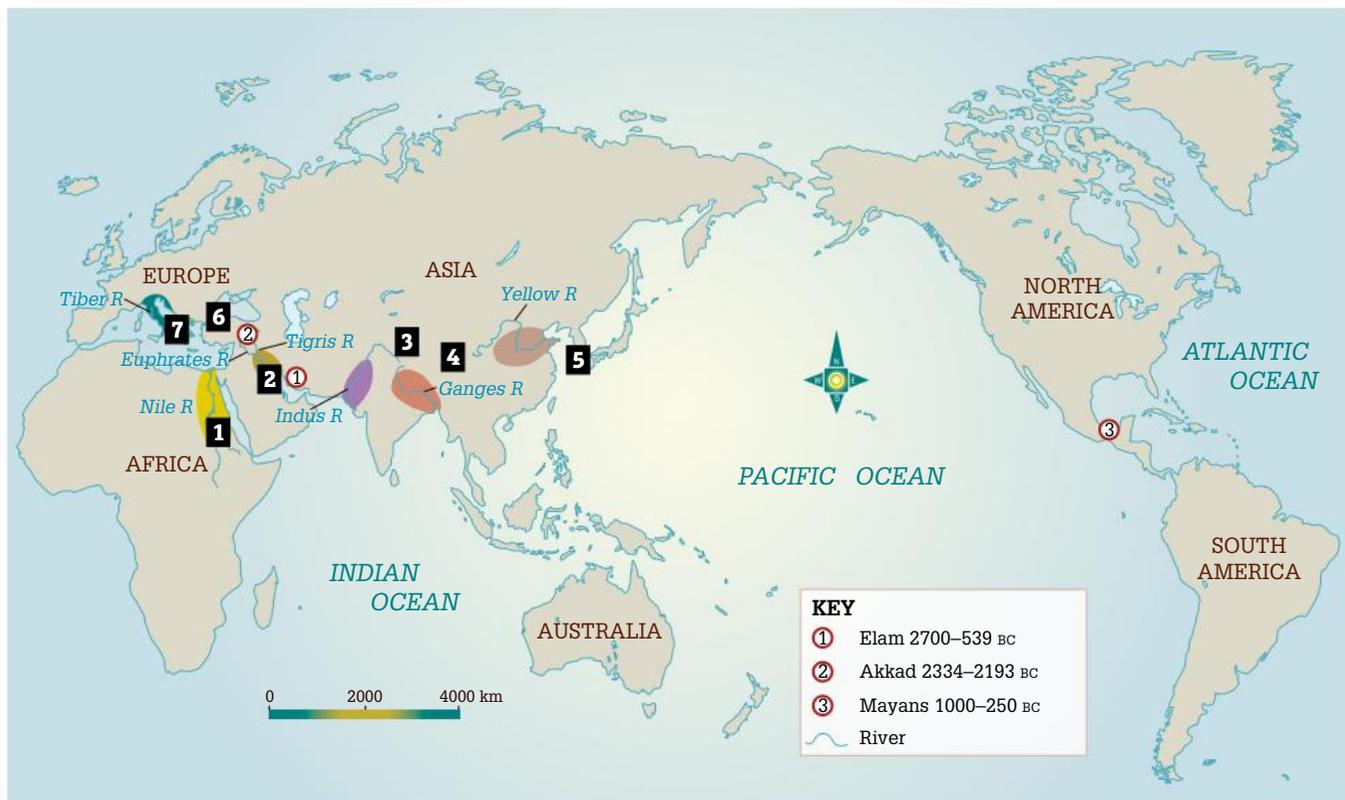
4 The Vedic period of Indian history saw the settlement of the Ganges River valley by Aryans from the north. They developed cities based on a farming economy. Their religious beliefs and practices were the foundation of Hinduism.

5 China's earliest civilisations developed in the north, around the Yellow River. The Chinese are believed to be one of the earliest civilisations to develop agriculture. Farmers were a respected social class because they supplied the food for people to survive.

6 The earliest Greek civilisation, the Minoans, developed on the island of Crete. On mainland Greece a number of city-states grew, including Athens and Sparta. These city-states did not unite but were rivals throughout ancient times. The democratic system of government developed in ancient Greece.

7 The ancient Romans developed one of the largest **empires** of the ancient world. At its peak, Rome had a population about three times that of modern Australia and ruled over an area about 80 per cent the size of Australia. Romans were excellent engineers. They built aqueducts, toilets and central heating systems, and invented cement.

Source 7.1.2 Early civilisations of the ancient world

First civilisation: Sumer

Sumer, one of the world's earliest known civilisations, developed in Mesopotamia, or 'the land between the rivers'. Between 3800 BC and 1595 BC, farming flourished on the fertile floodplains between the Tigris and Euphrates rivers in what is now Iraq.

Sumerians were not only successful farmers but also developed technology—they devised ways to irrigate farmland and to prevent it from flooding. They became traders, too, using their location along newly emerging trade routes to develop their cities as centres for trade. These events led to the growth of 12 city-states. These city-states and their surrounding land were independently ruled states.

ACHIEVEMENTS

The Sumerian civilisation was very advanced. Its achievements were copied and adopted by other later civilisations of the Fertile Crescent. Some of our modern ways of life can be traced back to the Sumerians, such as the wheel, city-life and the use of writing (see Source 1.7.3). For this reason, some historians refer to Sumer as 'the cradle of civilisation'.

Empires

Some of the ancient civilisations went on to develop empires. This meant that the political leaders of a civilisation expanded their territory by taking

Source 7.1.3 A Sumerian clay tablet of a contract to sell a field and a house, written in about 2600 BC. Held in the Louvre Museum, Paris

control of other countries. For example, the Roman civilisation was established on the Tiber River in the Italian peninsula. The Romans extended their power and control to create an empire that spread as far north as Britain, west to include Spain, south to the northern parts of Africa, including Egypt, and east to take in parts of Asia.

Sumer 3800–1595 BC

Indus Valley (Harappa, Mohenjo-Daro) 3000–1400 BC

Egypt 3000–30 BC

China 2205 BC–220 AD

Greece 2000–146 BC

Ganges Valley (Vedic Period) 1400–320 BC

Rome 753 BC–476 AD

| 4000 BC | 3000 BC | 2000 BC | 1000 BC | 1 AD | 1000 AD |
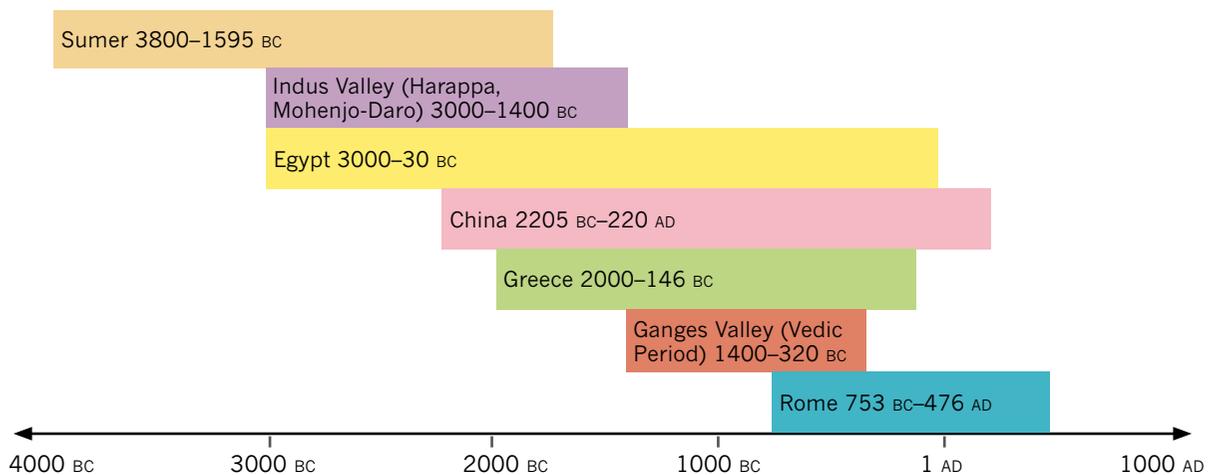
Source 7.1.4 Timeline of ancient civilisations
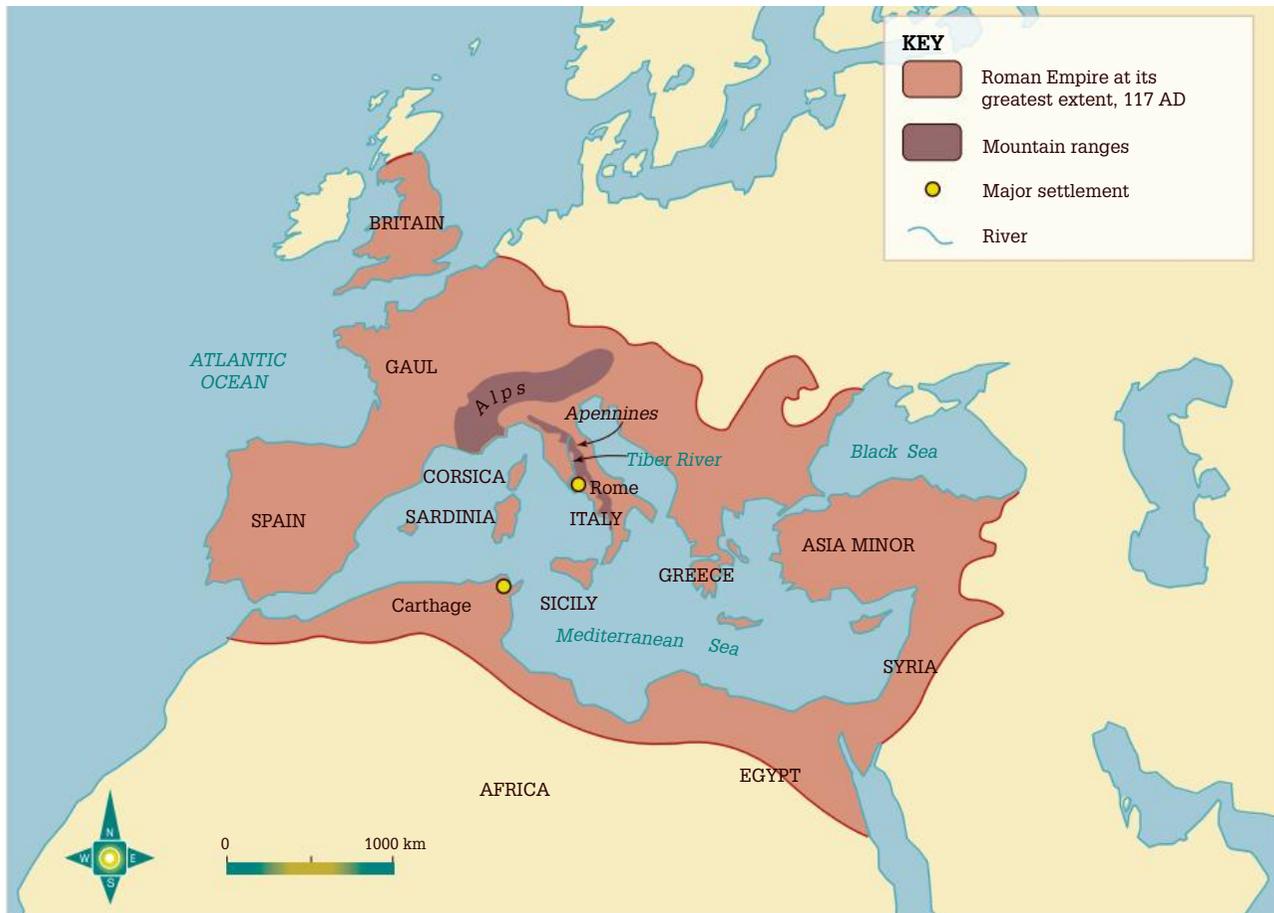
Source 7.1.5 The Roman empire at its largest extent under the Emperor Hadrian, 117 AD.

ACTIVITIES

Remembering and understanding

1 Examine Source 7.1.2. Excluding Sumer, name the two other civilisations which developed in Mesopotamia.
2 Using Source 7.1.4 to help you,
    a how many years after the fall of the Sumerian civilisation did the Roman civilisation begin?
    b Which ancient civilisation was powerful for the longest period of time?
    c Which civilisation was the shortest and how many years did it last?

Analysing and applying

3 Construct a simple Venn diagram to show the similarities and differences between a civilisation and an empire.

Evaluating and creating

4 What conclusion can you reach by looking at Source 7.1.2 about the factors that influenced where early civilisations developed?
5 Conduct further research into two of the main class groups in Sumerian society (kings and priests, merchants and craftsmen, farmers and slaves). Write a summary comparing daily life for the two groups. Remember that in this period the lives of men and women within a class group could be very different.

Inquiry tasks

Mapping the ancient world

Using Sources 7.1.2 and 7.1.3 to help you and further research in this textbook, the library and on the internet, your task is to create an annotated map showing the location of each of the ancient civilisations.

You must also include for each civilisation:

- its starting and ending dates
- at least two significant facts
- at least one hand-drawn illustration which represents the civilisation

Social anthropologist

Social anthropology is the study of human societies. Some social anthropologists do this by living as a member of that society.

You are a social anthropologist who has been asked to investigate how people lived in one of the following ancient civilisations:

- Sumer
- Indus Valley (Harappa and Mohenjo Daro)
- Egypt
- China
- Greece
- Ganges Valley (Vedic period)
- Rome

To do this, you and your colleagues have 're-created' one of these communities. (You will do this through research in the library and on the internet.) You have 'lived' as a person from one of these ancient civilisations for several months.

Now, you and your partners have been asked to give an oral presentation between 5 and 10 minutes long to your class. For your oral presentation you need to prepare:

a a map of where your civilisation was located

b illustrations or images of your village or city, and of the tools and artefacts that you used in your daily life
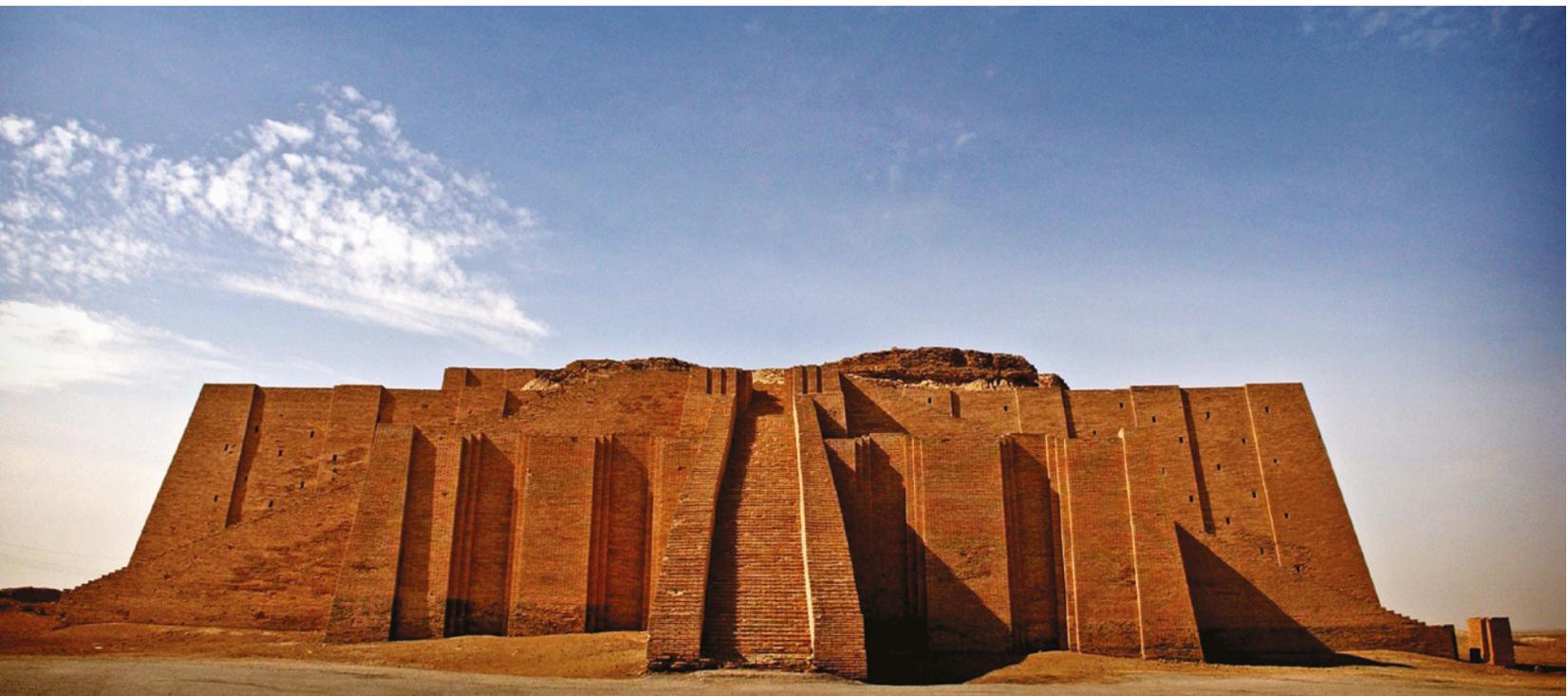
Source 7.2.1 The ziggurat of Ur, one of the important Sumerian city-states. King Ur-Namma built the ziggurat or temple in about 2100 BC. The facade of the ziggurat was rebuilt in the 1980s.

c a journal consisting of at least five entries recording your experiences

d a Venn diagram that compares and contrasts life in your ancient civilisation with modern life

e a speech of 5 to 10 minutes long that outlines:

- your experiences
- what you have learnt about Stone Age life
- comparisons and contrasts with life today.

Discovering Sumer

Research the work of archaeologists by looking into the life and discoveries of archaeologist Leonard Woolley. Your presentation should be titled 'The life and achievements of Sir Leonard Woolley'. The presentation should include:

a a brief biography of Woolley, which may be presented as a timeline, table or paragraph

b why Woolley decided to excavate the site at Ur

c who else was involved with Woolley in the dig at Ur

d the difficulties faced in the excavation of Ur

e a description of what was found at the site

f an explanation as to why Woolley decided some tombs belonged to royalty

g an assessment of how the recent war in Iraq has affected the ancient sites and artefacts

h an assessment of the contribution that Woolley made to our knowledge about the Sumerian civilisation.

Investigating the ancient past

History is the study of our past. Historians examine events and the lives of people from times gone by so that we can better understand ourselves and the world around us. History is always changing as exciting new discoveries and new technologies allow historians to learn more about ancient mysteries and peoples from the past.

Source 8.0.1 Loulan Beauty, a 4000-year-old body found in 1980 preserved in the salty sands of the Taklamakan Desert in western China. Her plaited fair hair, tattoos and woollen clothing show she was Western European. But what was she doing in China?

Ancient history

518 BC	Persian capital Persepolis founded by King Darius
425 BC	Herodotus, 'Father of History', dies
46 BC	Julius Caesar reforms Roman calendar
98 AD	*Germania* written by Roman writer Tacitus

Medieval history

476 AD	Fall of the Western Roman Empire
622 AD	Islamic calendar year 0
1000 AD	Fishing with hook-and-line technology in Australia
1350 AD	End of the medieval period

Renaissance history

1582 AD	Gregorian calendar officially adopted
1600 AD	End of Renaissance

Modern history

1870 AD	Schliemann discovers Troy in Turkey
1922 AD	Carter unearths King Tutankhamen's tomb
2005 AD	Bronze Age Minoan town of Akrotiri closed to public after roof collapse

Source 8.0.2 A timeline of key events and people in the ancient past

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History and archaeology

Defining history

History is the story of people's lives from past times. This story is pieced together by historians with the help of many other people. This includes specialists trained in archaeological skills, such as dating pottery, identifying bones and reconstructing artworks.

Historians and artefacts

A historian is someone who studies and writes about the past. Historians ask questions about the past to build a picture of societies, individuals and events. They do this by using the remains of the past, such as artefacts and writings.

Artefacts are items that have been made by people. Some examples are jewellery, stone tools, pottery jugs, statues, paintings and buildings.

'Father of History'

Herodotus (c. 484–c. 425 BC) was a Greek historian famous for writing *The Histories*, an account of the Persian Wars fought in the 5th century BC. He gathered information from eyewitnesses, but also included myths, superstitions and the activities of gods in his work. Source 8.1.1 explains his reason for writing.

> *… to preserve the memory of the past by putting on record the astonishing achievements both of our own and of other peoples; and more particularly, to show how they came into conflict.*

Source 8.1.1 Extract from Herodotus, *The Histories*, Book I, translated by A. de Sélincourt, Penguin Books, London, 1972, p. 40

Defining archaeology

Archaeology focuses on the physical evidence left behind from the past; for example, cities, coins, graves and roads. These physical remains are clues to the lives and beliefs of past civilisations.

Source 8.1.2 Archaeologists excavating at the World Heritage-listed caves of Sierra de Atapuerca in Spain

An archaeologist excavates or digs in the ground to find **evidence** of past civilisations. Artefacts are usually found underground due to the effects of natural disasters, war, rebuilding over previous remains or changing geography. Close examination of Source 8.1.2 will reveal the grid system that archaeologists use to guide them during an **excavation**. Each uncovered artefact's location is carefully recorded using this system.

Where to look?

There are many ways in which remains of the ancient past can be found. Natural disasters such as

landslides or human activities can reveal artefacts. Archaeologists can also be guided by:

- stories—tales of the lost city of Atlantis helped archaeologist Spyridon Marinatos find the Minoan town of Akrotiri on the Greek island of Santorini in 1967
- accidental discovery of artefacts—the construction of a canal in 1592 revealed marble slabs, resulting in the discovery of the ancient city of Herculaneum in Italy
- mounds of earth, called tells, which often cover ancient cities
- places where the land caves in or where crops grow differently to surrounding crops.

Technology

Archaeologists use technology to help them find places to dig. Infra-red satellite imaging, radar, underwater sonar, metal detectors and aerial photography can provide clues about where ancient peoples lived.

Layers in the earth

When archaeologists dig into the earth, the ground is made up of many layers. These layers are called 'strata' (see Source 8.1.3). The deepest layers are the oldest and the layers closest to the surface are the youngest.

Stratigraphy allows archaeologists to put the remains of the past into **chronological order** and gather information about the past.

ACTIVITIES

Remembering and understanding

1   Look at Source 8.1.2. Describe the types of tasks an archaeologist does as part of their job.

Applying and analysing

2   Construct a Venn diagram to show the similarities and differences between Herodotus and a modern archaeologist.
3   Look at Source 8.1.3.
    a   Which strata is the oldest? Explain why.
    b   Identify possible difficulties for archaeologists in using strata.
    c   Interpret the diagram to determine how this site may have been used over time.

Evaluating and creating

4   Create a concept map to brainstorm at least four ideas showing what history means to you.
5   Choose one type of place where archaeologists might search for artefacts. What is one advantage and one disadvantage of this type of site?
6   Sketch a dig diagram similar to Source 8.1.3 of your bedroom. Consider how many layers you will need to identify and what sort of artefacts of your life might be found at each layer. Label each strata clearly. You may like to use a presentation program such as Prezi to allow animated movement through strata levels.
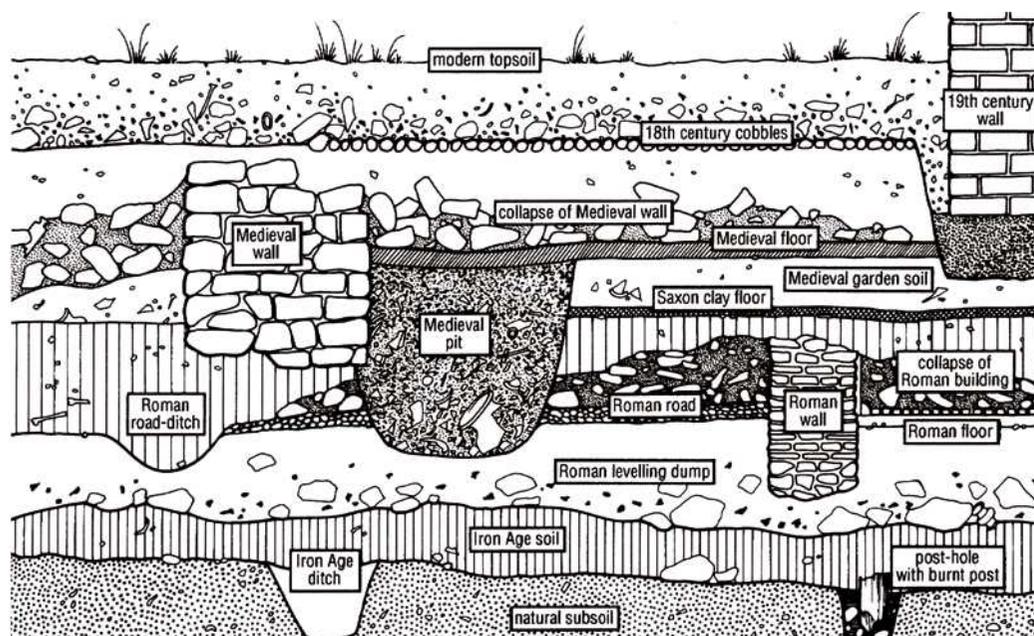
Source 8.1.3
A diagram of archaeological strata produced by the Canterbury Archaeological Trust, a charity that carries out excavations in Kent, England

Time and timelines

Time is all around us

We measure time in standardised units—hours, days, months, years and so on. This allows us to understand each other when we talk about the past, our lives or planning the future. Source 8.2.1 shows how the ancient Greeks attempted to measure time.

Calendars

Peoples of different civilisations developed their own methods of measuring and naming time. Sunrise and sunset, changing seasons, movement of stars or the reigns of kings have been used by various cultures in history to mark the passage of time.

- Ancient Persians began their new year with the spring equinox in March, when the day is as long as the night. Three thousand years later, modern-day Iran is still celebrating this date with a spring festival.
- Ancient Egyptians timed their new year to coincide with the annual flooding of the Nile, and later with the rising of the star Sirius. Their year was divided into three seasons, each made up of three months with a 10-day week.
- The Islamic calendar is based on the cycles of the moon. The first year of the Islamic calendar is 622 AD, when the prophet Muhammad travelled from Mecca to Medina.
- Before 1873 Japan named years after the reigning emperor, so the year 1868 AD was Meiji 1 on the traditional calendar.

Gregorian calendar

In Australia, we use the Gregorian calendar to measure time. The Gregorian calendar is a modified version of the Julian or Roman calendar developed by Julius Caesar. This calendar is part of the Christian tradition and so divides years into two categories: BC (before Christ) and AD (*anno Domini*, Latin for 'in the year of our Lord'). Years are counted forwards and backwards from the year of Jesus Christ's birth, Year 1.

A more recent system that replaces BC and AD is now also in use: BCE (before the Common Era) and CE (Common Era). These two terms were chosen because they are more inclusive of non-Christians.

Source 8.2.2 An Aztec stone with the months inscribed. Some historians believe it is a calendar. The Aztecs had a 365-day year with a 260-day ritual cycle that formed a 52-year 'century'; at its conclusion the gods could destroy the world, if they wished. National Museum of Anthropology, Mexico

Another term that has been suggested is BP (before present); however, this can be confusing as the present is always changing, making it difficult to determine a precise date. Today, the Christian method of measuring time is still the most widely used system in most countries around the world for practical reasons.

Did you know?

New Year's Day used to be held on 25 March in England. The beginning of the legal year reflected the republican Roman system when a consul (similar to a prime minister) was sworn in. This tradition continued during the Middle Ages when 25 March became a date when contracts to rent farmland expired and a feast was held to honour the Virgin Mary.

Chronology

Arranging dates in order of their time is called 'chronology'. Putting events in order helps historians evaluate a source during a historical investigation. Chronology helps determine:

- the context of a source and its author
- the importance of an event, belief or person
- if things have stayed the same or changed.

Historians divide the past into prehistory and history. Prehistory is the period before 3500 BC, the time before written records. History is the period after 3500 BC. History is then further divided into ancient, medieval and modern history. Most historians consider the end of ancient history to be the fall of the Western Roman Empire in 476 AD and medieval history ending with the 'rebirth' of a spirit of inquiry in Italy, called the 'Renaissance', during the 1300s AD.

Timelines

Historians commonly use **timelines** as a way of visually representing events in order of time. Timelines are similar to a thermometer: they use a set scale for each unit of time to allow for comparisons and calculations. The scale will depend on the span of years being represented—the longer the time period the more years per centimetre. On a timeline using the Gregorian calendar, dates are arranged in ascending order from 1 AD. For years before Christ's birth, dates are arranged in a descending order. This means the smaller numbers are closer to Year 1 in the same way that a temperature of –1 degree Celsius is closer to 0 degrees Celsius than –10 degrees Celsius (see Source 8.2.3).

Since the Dreamtime, Aboriginal people have inhabited Australia
•
•
•
•

60 000 BC — Archaeological evidence of Aboriginal people occupying Arnhem Land in the NT

50 000 BC — People live at Lake Mungo in western NSW

46 000 BC — People camp at a cave known as Devil's Lair in WA

34 000 BC — Bone points used for fishing spears in south-western Tasmania

26 000 BC — Cremations with ochre at Lake Mungo
25 500 BC — Flaked stone tools used in southern Tasmania

14 400 BC — Spear throwers depicted in rock art in the Kimberley in WA

9500 BC — Boomerangs preserved in Wyrie Swamp in south-eastern SA

1000 AD — People fish with shell hooks and line in Sydney
1788 AD — 3000 to 5000 Aboriginal people live in the Sydney region when the First Fleet arrives

Source 8.2.3 A timeline of ancient Australia

Dating

There are two kinds of dating: relative and absolute.

Relative dating

Relative dating provides the order of events in the past but does not give a precise year. It relies on knowledge of a body of archaeological data and the experience of the excavator. There are three types of relative dating:

- *typology*—when an object is classified based on its physical features and then can be dated as it is the same as another object where the date is known. It is helpful for determining the evolution of artefacts; for example, Flinders Petrie's analysis in 1899 of prehistoric Egyptian grave goods, mostly pottery. The accuracy of this method of dating is questioned by some historians

- *association*—when an object is given a date based on the known dates of the items it was found with; for example, a coin found in a grave

- *stratigraphy*—when an object is given a date because it is found in the same layer of earth (stratum) as another object that can be dated, or below or above another layer with items that can be dated. However, layers can be disrupted or have 'intrusions' that make accurate dating difficult.

Absolute dating

Absolute dating is a scientific and modern method of dating artefacts. It can be achieved by a wide variety of methods. Historians can draw on ancient peoples' dating systems—calendars, lists of reigns of kings or dated coins. Some scientific approaches to dating include:

- *radiocarbon dating*—used for any item that was once alive by measuring the level of carbon-14, which decreases after death at a fixed rate. At present, items up to about 60 000 years old can be dated; for example, charcoal used by ancient Australians to make rock shelter art. Carbon-14 dating is a common method used by archaeologists. An example of this method is shown in Source 8.2.4.

- *thermoluminescence*—determines how much time has gone by since the item was last exposed to sunlight or heated by measuring the amount of radiation it contains. This method is often used when carbon-14 dating is not possible, such as for ceramics or sand
- *dendrochronology*—this method dates trees or wooden objects by counting growth rings, which represent a year's growth. The rings create patterns and can give information on climate; for example, narrow rings show poor tree growth and can indicate drought. The pattern is used to date items made from wood to determine the last year the tree grew before it was cut down; for example, a wooden beam used to build a house. A similar method can be applied to ice cores or varves, which are layers of sediment in a lake or river, or on ocean floors.

Source 8.2.4 Radiocarbon dating: carbon dioxide has been extracted from scrolls found at Herculaneum (an ancient Roman town). Here, carbon dioxide has been condensed using nitrogen to measure the levels of carbon-14.

ACTIVITIES

Remembering and understanding

1 a Identify the difference between relative and absolute dating.
   b Draw up a table showing the pros and cons of relative and absolute dating.

Applying and analysing

2 Interpret the timeline in Source 8.2.3.
   a How long do archaeologists think Aboriginal people have lived in Australia?
   b List the artefacts that have assisted archaeologists to date the development of Aboriginal culture.
   c Suggest what new evidence could change the dates listed on this timeline.

3 Apply the process of placing dates into a chronology demonstrated in the timeline to produce a timeline of your typical day. Use 1 centimetre to represent each hour. Include a very short description of at least six events.

4 Select facts from the information on the calendars developed by different civilisations. Record them in a PMI table (Pluses, Minuses and Interesting aspects).

Evaluating and creating

5 Evaluate one method of relative or absolute dating using a SWOC analysis (Strengths, Weaknesses, Opportunities and Challenges). Report on your findings to a partner.

Pieces of the puzzle: Investigating sources

The puzzle of the past

We know a lot more about the people of the past today than people did in previous centuries. This is because archaeologists and other specialists work together to provide a detailed analysis of sources. Scientific data is combined with written archival records to allow historians and archaeologists to fit back together the pieces of the puzzle—the pieces of historical evidence that continue to shape our understanding of the past.

Historical evidence

Historians use historical evidence during their investigations into the past. They find the information they need in sources. A source is anything that survives from the past or tells us about the past. Once a historian uses a source to answer a particular question, it becomes evidence. There are two types of sources: primary and secondary.

Primary sources

Primary sources have been created during or around the time that the historian is investigating. Primary sources are key to learning about the past. Types of primary sources include:

- *writing*—such as letters, government records, official inscriptions or trade lists
- *artefacts*—items made by people and which have been preserved, such as stone tools, mummies, statues or buildings. An example can be seen in Source 8.3.1
- *oral accounts*—information that is spoken, such as legends, sound recordings or songs.

Secondary sources

Secondary sources are items that have been created long after the time the historian is studying. They are often the products of the study of history and are based on other sources. People other than historians produce secondary sources; for example,

filmmakers, artists and politicians. Secondary sources can be just as important as primary sources because historians can use them to interpret, analyse and evaluate primary sources.

Making decisions about sources

Sources are not always easy to use and historians cannot believe all information just because it is in a source. Thucydides (c. 460–400 BC), an ancient Greek writer, wrote a *History of the Peloponnesian War*. This war was fought between Athens and Sparta in the 5th century BC.

Source 8.3.1 A primary source—a 5th-century BC Phoenician decorated ivory comb. Phoenicia was an ancient civilisation situated in the region that is now Syria, Lebanon and northern Israel.

Thucydides describes his scientific approach to dealing with evidence in Source 8.3.2.

• …………………… .. ..

I have made it a principle not to write down the first story that came my way … I have checked with as much thoroughness as possible … [as] different eye-witnesses gave different accounts of the same events, speaking out of partiality for one side or the other or else from imperfect memories … it may well be that my history will seem less easy to read because of the absence in it of a romantic [mythical] element. It will be enough for me, however, if these words of mine are judged useful by those who want to understand clearly the events which happened in the past.

• …………………… .. ..

Source 8.3.2 Extract from Thucydides, *History of the Peloponnesian War*, translated by R. Warner, Penguin Books, London, 1972

Analysing sources

There are many difficulties in making sense of sources, and so historians ask a variety of questions of sources:

- Who is the author or creator? What do we know about them?
- When and where was it made or written?
- Is it authentic? (Is it what it seems to be?)
- Why was the item made or written?
- What information is in the source? Is the source typical? Do other sources support or contradict it?
- Is the source accurate or does it provide only one perspective?

Answers to these questions help historians interpret sources and their usefulness.

Fact and opinion

Remains from the past can include both facts (things that can be proved) and opinions (points of view). Historians must distinguish between these in sources before information can be used as evidence. Myths and legends in particular contain a mixture of facts and opinions.

Source 8.3.3 A 21st-century artist's impression of the Trojan Horse, Tamos Galambos, 2006

The Trojan Horse

The ancient Roman poet Virgil (70–19 BC) tells the story of the Trojan Horse used by the Greeks in the 13th century BC to take the city of Troy and end the 10-year siege of the city (see Source 8.3.4).

• • .. .. • • ..

… a horse of mountainous size, … [the Greeks] secretly hide a picked body of men, chosen by lot, there, in the dark body, filling the belly and the huge cavernous insides with armed warriors … Suddenly eager fire, rolls over the rooftop [of Troy], in the wind: the flames take hold, the blaze rages to the heavens.

• • .. .. • • ..

Source 8.3.4 Extracts from Virgil, *Aeneid*, Books I and II

Troy is also one of the most famous archaeological sites, discovered in modern-day Turkey by Heinrich Schliemann in 1870. Historians have tried to identify which parts of the story are fact rather than myth. Archaeologists' excavations at Troy have found nine layers of cities recorded in the strata of the Schliemann Trench. Some historians believe the evidence of destruction by fire in strata VII proves that the ancient poet's story was indeed based on fact.

Historical investigations

When historians investigate the past, their ability to build an accurate picture can be difficult. Making decisions about sources can be influenced by the fragmentary nature of the historical record that has survived. Sources can be scarce, difficult to understand or translate, or written long after the time they are providing information about.

Preservation and destruction

Historical investigations can be affected by the level of preservation and destruction of artefacts from the past. Sources can be preserved or destroyed, either deliberately or accidentally. Sometimes even the best intentions can result in the destruction of sources. This makes it difficult for historians to gain a clear picture of the past. Source 8.3.5 gives some examples of how Egyptian mummies have been preserved and destroyed.

	Accidentally	**Deliberately**
Preserved	Burials in the dry sands of the desert	A complex 70-day process to ensure the body did not decompose
Destroyed	A 19th-century fad among rich Westerners for mummy unwrapping viewings	Successive pharaohs destroying records of predecessors and raiding their tombs and mummies

Source 8.3.5 Reasons for the preservation and destruction of ancient Egyptian mummies

Previous generations of archaeologists focused more on finding 'treasure' rather than conducting historical investigations. Destruction of sources was common. One example is that of Charles of Bourbon, King of the Two Sicilies, who in the mid-18th century AD instructed the 'excess' finds at the ancient Roman town of Herculaneum in Italy to be destroyed in order to keep the royal collection exclusive and to demonstrate his power over the region.

Technology

Advances in technology have been of great assistance to historians and archaeologists in investigating sources. Technology can help overcome some of the difficulties of inquiring into the distant past and provide a more accurate picture of it.

Medical imaging

Medical imaging has opened a window into ancient people's lives that was not possible a few decades ago. Scientists use CT scans (computerised tomography) to determine cause of death or to analyse ancient bones to reveal where that person grew up or what they commonly ate. Source 8.3.6 shows this technology being used to examine King Tutankhamen's mummy.

By enabling the identification of the ancestors of modern people, DNA testing has allowed historians to learn much about the movement of ancient peoples.

Since the late 1970s, microscopic analysis of the wear and residues on ancient Australian stone tools has provided information on their uses.

Source 8.3.6 The mummy of King Tutankhamen being readied for a CT scan.

Computer-generated imaging

Today, archaeologists are increasingly using computer-generated images to interpret and present information. They use 3-D graphics and animation to virtually reconstruct whole artefacts from fragments or data collected in the field (see Source 8.3.7). Such 3-D images of artefacts are valuable tools for archaeologists to examine evidence. They also ensure that actual evidence is protected from damage, and the images can be made available to historians around the world simultaneously.
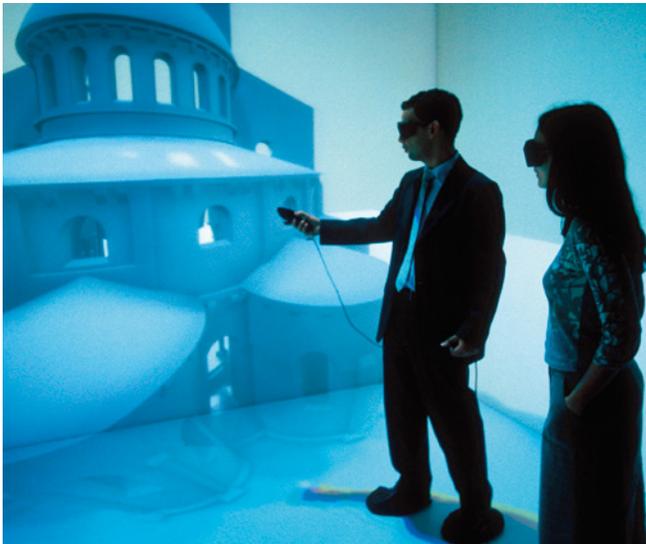
Source 8.3.7 Users exploring a virtual reality system recreating Cluny Abbey, a French abbey founded in 909. The abbey was demolished in 1810, and only scattered ruins now remain.

Lidar imaging

Lidar technology uses lasers strapped to the underside of a helicopter to map landscapes, physical features and other objects. The lasers fire rapid pulses at the land below. The amount of time it takes for each pulse to bounce back is measured and then used to create a 3-D image of the area or feature being surveyed.

Archaeologists have recently used Lidar technology to map formerly hidden sites, such as the lost city of Mahendraparvata, deep in the Cambodian jungle (see Source 8.3.8).

Source 8.3.8 Professor Damien Evans from the University of Sydney leads several teams of archaeologists into the Thom Dab temple after Lidar technology created new maps of the Siam Reap region.

ACTIVITIES

Remembering and understanding

1 a Identify which of Sources 8.3.1 to 8.3.8 are primary sources and which are secondary sources.
  b Explain your reasoning for your identification of each source.

Applying and analysing

2 Produce a concept map to explain why it is often difficult for historians to reconstruct the past accurately. Include a reference to the quotation from Thucydides in Source 8.3.2.
3 Identify potential problems linked to:
  a filmmakers reconstructing history
  b the destruction of sources
  c reconstructing the past, as seen in Source 8.3.7.

Evaluating and creating

4 Write an explanation for the way the artist has chosen to depict the Trojan Horse in Source 8.3.3.
5 Evaluate the ways in which new technologies have changed the ways archaeologists undertake their study of the past and its artefacts.
6 Illustrate the story of the end of the Trojan War in four images. Use Virgil's description in Source 8.3.4.

Importance of conserving the remains of the past

Preservation of historic sites

It is widely acknowledged that the preservation of historical sites and artefacts is an important endeavour. This is recognised by archaeologists, historians and organisations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO). These people and organisations strive to protect those places and objects of historical interest which form our heritage and identity, and which should be preserved for future generations.

Angkor

Located in Cambodia is the 400-square-kilometre site of Angkor. It was built in phases during the Khmer Empire (9th to 14th century AD) as its capital city. The city contains many temples, palaces, canals and reservoirs. Its most important building is Angkor Wat, the largest Hindu temple and religious site in the world. Angkor was abandoned in the 16th century, and being surrounded by dense jungle, the site quickly became overgrown (see Source 8.4.1).

Today Angkor is threatened by tourism, the jungle and 100 000 villagers who live in the area and grow rice on the site. In 1992, UNESCO announced Angkor to be an endangered World Heritage site. An international committee was set up to protect and conserve the complex.

Conservation efforts are complicated because Angkor is a major tourist attraction. However, through the actions of conservators, recent tourists have had minimal impact and a quarter of the revenue raised through tourism is used to conserve the site. Angkor is not only a symbol of Cambodia's history and a source of great pride for its people, but it also contributes to the nation's economy. Through conservation it will be saved for future generations.

Willandra Lakes

The Willandra Lakes region is located in the Murray River Basin in New South Wales, on the border of Victoria and South Australia. The Willandra Lakes are five interconnected lakes covering a 2400-square-kilometre area (see Source 8.4.2). They were once filled with fresh water and were a great natural resource for Aboriginal people. It is also an area that provided perfect conditions for recording the past. The importance of this site was recognised by UNESCO in 1981 when it was placed on the World Heritage List.

Source 8.4.1 Ta Prohm temple in Angkor
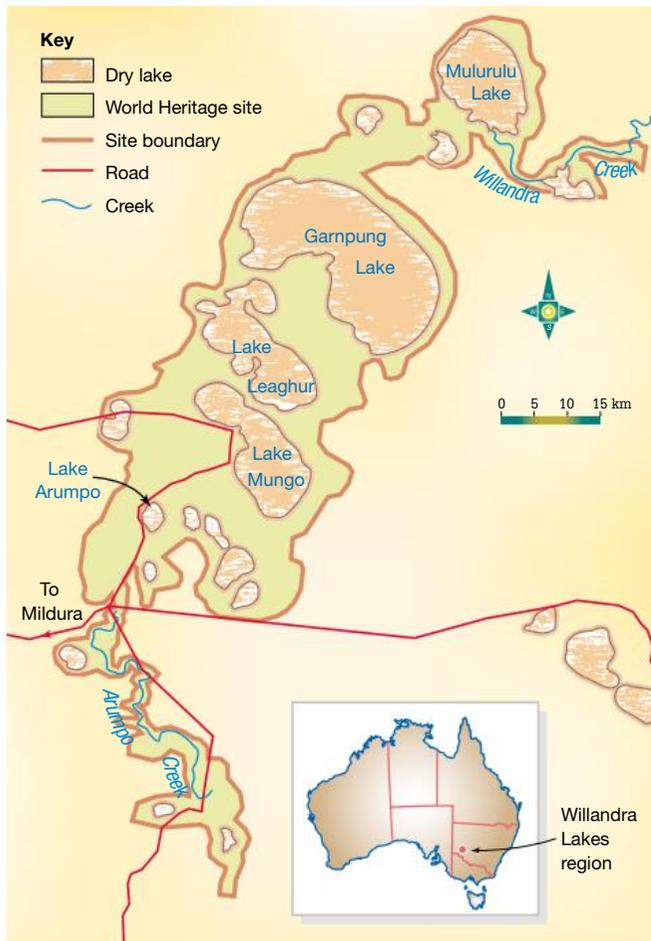
Source 8.4.2 The semi-arid Willandra Lakes region provides a variety of evidence of human occupation.

A rich archaeological site

Preservation of the Willandra Lakes region has provided historians and archaeologists with a wealth of evidence of cultural occupation in ancient Australia. Since the 1960s, more than 400 archaeological sites have been found here, with evidence such as:

- the cremation site of 'Mungo Lady', the oldest known in the world (40 000 BC)
- the skeleton of 'Mungo Man' in an ochre burial (40 000 BC)
- grindstones used to crush wild grass for flour (180 000 BC)
- hearths with burnt fish and marsupial bones (30 000 BC)
- footprints in clay (23 000 BC).

Significance

This evidence is invaluable in providing a more accurate picture of life in ancient Australia. In the 1950s scientists thought that Aboriginal people only arrived in Australia about 6000 years ago. The dating of evidence from Willandra Lakes has proved the 50 000-year period of habitation of Australia by Aboriginal people. The campsites, **shell middens**, fireplaces, quarries and burial sites reveal their hunting and gathering lifestyle, ritual burials and religion. The burial sites are of global significance as they show the development of human societies.

Conserving this rich archaeological site has meant that scientific tests have been able to be carried out on new discoveries using new technology. This has considerably changed our understanding of ancient Australian civilisation.

ACTIVITIES

Remembering and understanding

1 Identify the importance of conserving the remains of the past at ancient sites.
2 **a** How long do archaeologists believe Aboriginal people have lived in Australia?
   b Why has this date been revised?

Applying and analysing

3 Produce either a timeline or flow chart which shows the key events in Aboriginal history as found at the Willandra Lakes region.

Evaluating and creating

4 Conduct some internet research to help you formulate a solution to the issue of conservation at the site of Angkor. Consider the isolated nature of the site, the needs of tourists for transportation and accommodation, protecting the remains of the Khmer empire and ensuring locals can earn a livelihood. Present your solution as an annotated map of the region.

Ancient Australia: Sources

Oral history

Aboriginal and Torres Strait Islander people use oral, ceremonial and visual ways to communicate and remember their past. Their histories have been kept alive through art, song cycles, dance and ceremonies (see Source 8.5.1).

> • …………………… .. ..
>
> *Our story is in the land … It is written in those sacred places. My children will look after those places, that's the law.*
>
> • …………………… .. ..

Source 8.5.1 Words of Bill Neidjie, elder of the Bunitj clan, Gagudju people, Arnhem Land, Northern Territory

Some Aboriginal traditions record their presence in Australia as being since the beginning of time. The Aboriginal people of Port Jackson and Botany Bay thought they had been here forever. However, other traditions, especially from northern Australia, record a journey across the seas which matches with non-indigenous theories of migration from South-East Asia between 50 000 and 120 000 years ago.

Aboriginal and Torres Strait Islander peoples' oral history is a valuable source of evidence for ancient Australian civilisation. Alongside this oral tradition there is also archaeological evidence. Fossilised remains of now-extinct large marsupials called megafauna at Lake Collabonna and evidence of Aboriginal people butchering megafauna at Cuddie Springs both reveal the historical nature of the oral tradition.

Religion

Aboriginal and Torres Strait Islander people have held a complex set of spiritual beliefs about the world and their place in it since ancient times. In each group, key elders held important knowledge of laws that was passed on through ceremonies and stories. Their beliefs, like all religions, allowed them to understand creation, the purpose of life and how to behave. Source 8.5.2 shows how the Meriam Torres Strait Islanders continue to honour their god Malo and demonstrate respect to their

people. Some beliefs were common to many Aboriginal people, but there was also great variety between regions. Totemism is a religious system where people identify with a specific animal, plant or natural feature. These **totems** contributed to the way people were grouped into clans, local laws (including which animals were allowed to be hunted) and ceremonies.

Did you know?

Death was rarely thought to be a natural event. Even when the physical cause was known, Aboriginal people believed it was an evil spirit or sorcery. Campsites where a death occurred were abandoned and the dead person's name could not be mentioned. Complex ceremonies had to be carried out to drive away spirits, feasts and games were held, and a burial or cremation took place.

Ceremonies

The links between religious beliefs, laws and rituals show the connections between the past, present and future in Aboriginal culture. All aspects of life were connected with religion and ceremony, with significant focus on fertility, rites of passage and death. Ceremonies occurred at special places called sacred sites.

Sacred sites

Identified sacred sites include:

- piles of bones—one sacred site in the Northern Territory was marked with a pile of crocodile bones placed in a star shape
- cleared areas with two circles marked by raised earth connected by a pathway, called 'bora grounds'
- drawings in the sand or clay figures up to 10 metres long
- trunks of trees carved with geometric designs—only found in the lands of the Wiradjuri and Kamilaroi people (New South Wales and Queensland)

Source 8.5.2 Dancers from Mer (Murray) Island perform the Shark Dance. This dance honours the god Malo, who is said to have united the tribes of this Torres Strait Island and provided laws about land ownership and land cultivation.

- engraved or painted rock art
- stone arrangements in lines, standing stones and cairns (piles of stones). Knowledge about their purpose is limited. In many cases, only local Aboriginal groups know they were used to tell a story or identify a ceremonial area.

Initiation ceremonies

One of the most important ceremonies for Aboriginal Australians was the initiation ceremony—when a child was recognised as an adult. These ceremonies involved song and dance. Part of the initiation included practices such as the removal of a front tooth, nose piercing or circumcision for boys, or scarification (the making of scars) for boys and girls. In Sydney, girls would have part of the little finger removed. These ceremonies occurred at bora grounds; however, today there are very few left due to land clearing and regrowth of vegetation.

Aboriginal people also gathered for corroborees. These ceremonial events involved a lot of song and dance, but did not include sacred rituals such as initiation.

Ochre

Ochre is a type of rock that comes in different colours including yellow, brown, orange and red. The preparation of ochre for painting was a time-consuming process. It was harvested, crushed and mixed with water, tree sap, honey, egg yolk, blood or fat to create paint. Red ochre was the most highly prized pigment used for cave painting and body or artefact decoration. This paint was essential for use in rituals and ceremonies that honoured spirit ancestors or taught clan members laws. According to oral history, ochre was put into the rocks by **ancestral spirits**. The people of Wilgie Mia in Western Australia tell of how ochre was created by the death of a great kangaroo speared by the Spirit Being called Mondong.

The elders of the tribe were the custodians of ochre mines and there were many laws to do with ochre. Ochre mines were a place of great spiritual danger and were deemed unsafe for uninitiated people. There are several ochre mines in Australia and Aboriginal people either travelled long distances or **bartered** for ochre using trade networks.

The Dreaming

Ancient stories that describe the creation of people, land, animals and plants are known as 'the Dreaming'. This modern term means both the time when creation occurred and the stories from this time. These stories are an unbroken connection between the past, present and future, and are kept alive by spoken words, dances, re-enactments and works of art.

Many stories from the Dreaming tell of the Creator Ancestors. In the Kimberley region of Western Australia, these ancestors are called *wandjina* and they travelled across the landscape creating people, animals and natural landmarks. The creator ancestors could take on animal or human forms and their paths across Australia are said to be full of power. One Dreaming story that is common to inland **clans** is the creation of the world and the hills and waterways in it by the Rainbow Serpent. Archaeological evidence shows this story is up to 9000 years old and may be the oldest continuous religious belief in the world.

Aboriginal art is another form of archaeological evidence of the Dreaming. Different styles can be found across Australia. Engraved outlines of animals and humans or geometric designs in sandstone can be found in Tasmania and in the Sydney region. The cave wall art of Arnhem Land is characterised by the 'X-ray' style paintings, while in the Cape York Peninsula of Queensland stencil art is the main style. Works of art portraying Creator Ancestors were a central part of religious ceremonies, linking the people with the Dreaming.

Kakadu and Arnhem Land

Kakadu National Park, part of Arnhem Land in northern Australia, is a World Heritage-listed area. It provides evidence of at least 40 000 years of habitation, from prehistoric hunter-gatherers to the Aboriginal people who still live there. The cave paintings, rock carvings and archaeological sites reveal stone tools (including the world's oldest ground stone axes) that are unique. The works of art also provide insight into social structure, ritual ceremonies, contact with Macassan fishermen in the 16th century AD, dress, animal species, as well as hunting and fishing (see Source 8.5.3).

ACTIVITIES

Remembering and understanding

1   a What are Dreaming stories?
    b List the ways these stories have been remembered over thousands of years.
2   a Describe the relationship between Dreaming stories and Aboriginal people's connection to the land.
    b Why is it important for Aboriginal people to know these stories?

Applying and analysing

3   Imagine you were observing the Shark Dance depicted in Source 8.5.2. Use a Y-chart to describe your experience.

Evaluating and creating

4   Evaluate the ways art plays an important role in helping Aboriginal people preserve their history and culture.
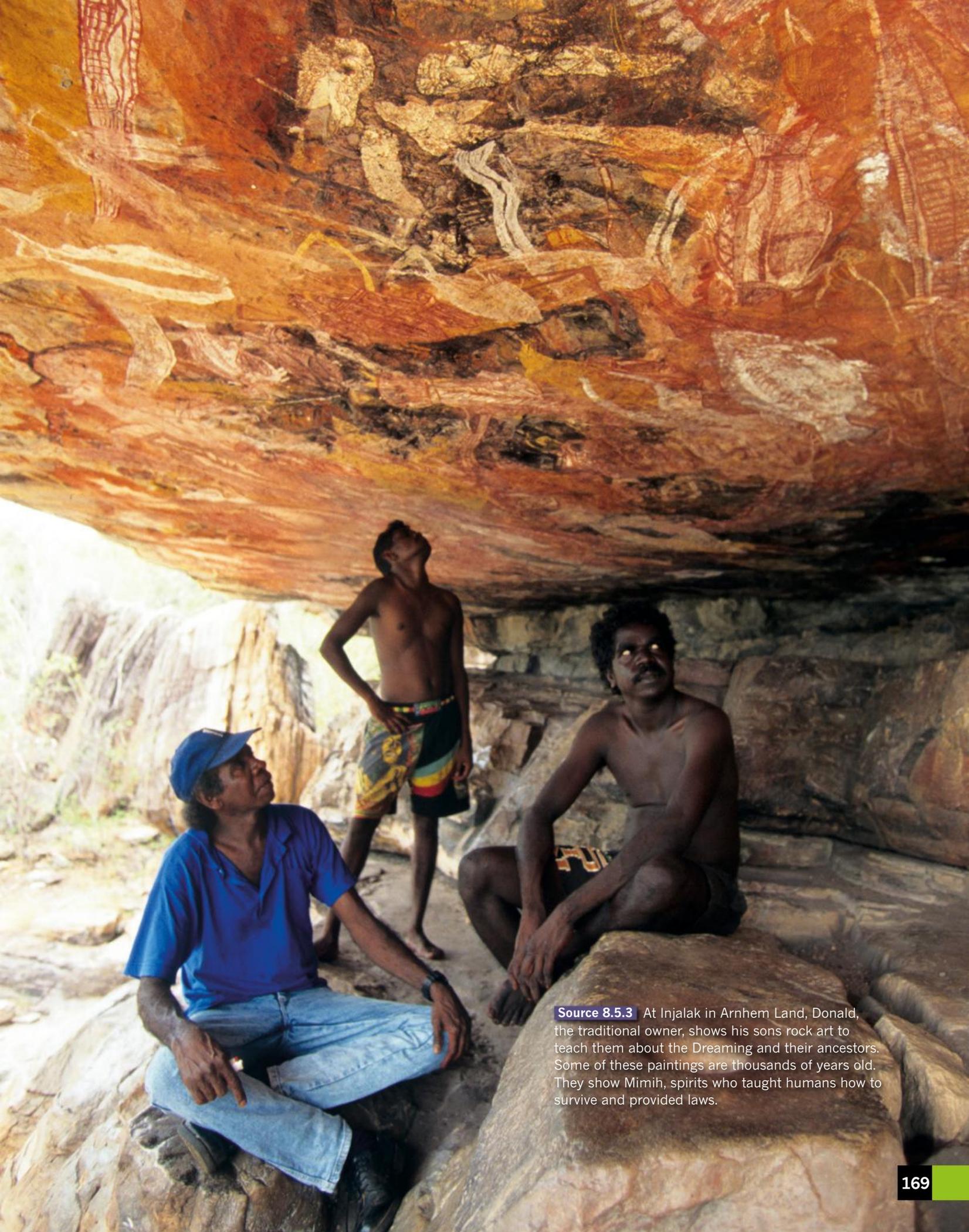
Source 8.5.3 At Injalak in Arnhem Land, Donald, the traditional owner, shows his sons rock art to teach them about the Dreaming and their ancestors. Some of these paintings are thousands of years old. They show Mimih, spirits who taught humans how to survive and provided laws.

Methods of preserving and conserving archaeological remains

Conservation of historical evidence

The conservation of historical evidence often costs more than the excavation of an archaeological site. However, without it, information would be lost (see Source 8.6.1).

Method	Actions
Conserve: to prolong the existence of an artefact	• Storing the artefact (usually) in a museum • Recording its features using technology • Treating the artefact to ensure it can be used in future research
Preserve: to maintain an artefact in its current condition	• Storing the artefact • Controlling its use • Treating it to prevent any further changes
Restore: to modify the artefact to return it to its original state	• Removing or covering up signs of wear and damage • Replacing parts with new materials

Source 8.6.1 The conservation, preservation and restoration of historical evidence

Source 8.6.2 A modern replica of a stone-headed axe used by the ancient peoples of Queensland. Displaying a replica ensures the safekeeping of the original artefact.

Source 8.6.3 A Bronze Age Minoan fresco from Akrotiri removed from the site of the town, pieced back together and stored in controlled conditions on site on the island of Santorini, Greece

Museums and archives

Museums, libraries and archives play a significant role in preserving and conserving sources from the ancient world. They perform activities such as:

- *collecting works in libraries*—for example, the Royal Library of Ashurbanipal was founded in the 1850s at Nineveh (in modern-day Iraq) to house 24 000 clay tablets dating from the 7th century BC

- *providing a climate-controlled environment to preserve artworks*—for example, frescoes from the Minoan Empire are stored in controlled conditions on the site of the excavation (see Source 8.6.3)

- *creating replicas of artefacts*—these allow the public to see items as they may have been originally while still ensuring preservation of the genuine artefacts (see Source 8.6.2).

Archaeological sites

Some methods that are used to preserve and conserve at archaeological sites include:

- *covering*—building roofs over sites to protect them from the destructive impact of weather. The 8000 figures of the terracotta army in the mausoleum of the first Qin emperor in China are protected by a huge roof
- *moving*—in 1960, the Abu Simbel temples in Egypt were moved during the construction of the Aswan Dam. Three thousand people worked for four years to cut up the temples, built by Pharaoh Ramses II in the 13th century BC, into more than 1000 enormous stone blocks. These blocks were later reassembled on higher ground
- *restricting access*—high numbers of tourists expose historical sites to the damaging effects of oils, humidity and flash photography. Closing the fragile sites of the prehistoric cave paintings at Lascaux in France in 1963 and Tutankhamen's tomb in Egypt in 1991 to tourists have helped to preserve them
- *restricting digging*—focus has shifted in recent decades to preserving and conserving what has already been excavated. In Australia, sites are no longer being excavated for research purposes. In Pompeii, one-third of the site has deliberately been left unexcavated.

Reconstructions

Previous generations of archaeologists aimed to create an atmosphere by rebuilding historical structures using modern materials. However, on the whole this has resulted in further damage to these fragile sites. This practice is also controversial because reconstruction work is based on one historian's vision and prevents future examination of evidence.

Funding

Without funding, none of the methods for preserving or conserving could occur. Securing the large sums of money needed occurs with the support of bodies such as UNESCO, multinational corporations, governments, universities and research institutions.

Preservation of Herculaneum

Herculaneum was a Roman town, which, along with Pompeii, was destroyed in 79 AD by the eruption of Mount Vesuvius. In 2000, the Herculaneum Conservation Project (HCP) was set up by the Packard Humanities Institute to fund works and join forces with the Italian government and the local heritage authority of the Naples region to 'conserve and enhance the ancient city of Herculaneum'. In 2004, the British School at Rome, a leading humanities research institution, was sponsored to become a third active partner in the project. To date, the HCP has been able to open up two-thirds of the site to public access.

ACTIVITIES

Remembering and understanding

1   Match each action listed below with one of these three methods of protecting sources: conserving, preserving and restoring.
    - Replace rotted ancient wood with new
    - Control access to the artefact
    - Remove from site and put on display elsewhere
    - Keep in climate-controlled conditions
    - Treat with chemicals
    - Cover up any damage
    - Rebuild using cement

Applying and analysing

2   **a** Rank the methods used to protect the remains of the past as described in the dot points in Question 1. Use numbers 1 to 7 and include a reason why you placed each in its position, with 1 being the most important and 7 the least important.
    b Explain the reasons for your choices.

Evaluating and creating

3   Write a three- to five-point submission to the Packard Humanities Institute to secure funds for a new conservation project at an archaeological site of your choice. Some suggestions include Machu Picchu, Akrotiri and Pompeii.

UNESCO World Heritage site

Heritage

Artefacts and ideas of the past are important to individuals, nations and belief systems in forming a sense of identity. They form a people's heritage.

Repatriation

Ideas about who owns the past have changed in recent decades as there has often been controversy over cultural ownership of heritage and the need to return cultural artefacts to their original owners. The returning of remains by museums to cultural owners is called repatriation. Some think this endangers the preservation of evidence, while others place cultural wishes first. Two examples related to repatriation are shown in Source 8.7.1.

Positive	Negative
In 1976, the Tasmanian Museum repatriated the 100-year-old remains of Truganini, an Aboriginal woman. Since 1990, over 1000 dried, pickled and bone remains have been returned to Aboriginal communities for reburial.	Between 1801 and 1812, British archaeologists removed the so-called Elgin Marbles from the Parthenon in Athens. The marbles are still held in the British Museum, which says that the Greek government cannot guarantee the marbles' continued preservation.

Source 8.7.1 Examples related to repatriation

Protection of heritage

The importance of preserving the remains of our past was confirmed in 1972 with the creation of UNESCO's World Heritage List. It identifies and works to protect places on earth that are important to all people. The nearly 1000 sites identified include the Pyramids of Egypt, the Acropolis in Greece, the Taj Mahal in India and the Old City of Jerusalem.

UNESCO's mission is to assist nations to safeguard heritage sites, provide assistance and training, and encourage the local population to participate in preservation.

Heritage is our legacy from the past, what we live with today, and what we pass onto future generations. Our cultural and natural heritage are both irreplaceable sources of life and inspiration.

Source 8.7.2 A quote from the UNESCO website

UNESCO's selection criteria

In order to be included on the World Heritage List a site must be of outstanding universal importance. Cultural or natural sites must meet one or more of the 10 selection criteria to make the list (see Source 8.7.3).

1   *to represent a masterpiece of human creative genius*

2   *to exhibit an important interchange of human values on developments in architecture or technology, monumental arts, town planning or landscape design*

3   *to hold unique evidence of a past or current civilisation*

4   *to be an outstanding example of architecture, technology ensemble or landscape which illustrates a significant stage in human history*

5   *to be an outstanding example of human interaction with the environment, particularly those made vulnerable to change*

6   *to be associated with events, ideas or beliefs of artistic or literacy works of outstanding universal significance*

7   *to have outstanding natural phenomena or areas of exceptional beauty*

8   *to be an outstanding example representing major stages of Earth's history*

9 to be an outstanding example representing significant ongoing ecological and biological processes in the evolution and development of an ecosystem

10 to contain the most important and significant natural habitats for conservation of biological diversity

• …………………… .. ..

World Heritage site: Persepolis

Persepolis was the capital city of the Achaemenid Empire of western Asia. The city was founded in 518 BC by King Darius. It was designed as a centre for power, a location for festivals and a showpiece of wealth. The city was burnt by the Greek general Alexander the Great and its treasures carried away. The ruins are located in modern-day Iran and continue to be a source of great national pride to Iranians.

Source 8.7.4 The Apadana stairway is decorated with a carved relief showing a procession of representatives of the empire's nations bringing tribute to the Persian king at Persepolis.

The ancient city is made up of numerous palaces, stairways, reception halls and storage areas built over a period of 100 years. The city was built on a constructed terrace and plumbing was installed before construction. The structures are made of sun-dried bricks and huge stone blocks. The buildings are covered in beautiful sculpted friezes and statues of mythical creatures, gigantic winged bulls and bulls with two heads. This site shows the power and skill of the ancient Persians (see Source 8.7.4).

ACTIVITIES

Remembering and understanding

1 Identify at least two reasons why the 1000 World Heritage sites belong to all people, and not just the countries where the sites are located.
2 Consider UNESCO's selection criteria.
   a Identify which of the 10 criteria relate to ancient sites.
   b Suggest a site that may qualify.

Applying and analysing

3 a Explain why there is controversy over repatriation.
   b Imagine that you are a UNESCO officer at a meeting between representatives of a museum and a cultural owner. Select an issue to discuss; for example, the Elgin Marbles or Aboriginal human remains. Write a dialogue of the discussion that could occur.

Evaluating and creating

4 Justify why Persepolis is listed as a World Heritage site. Include reference to the selection criteria. Present your answer as either a concept map or as a crossword with clues and solutions.
5 Debate UNESCO's claim that heritage sites are 'irreplaceable sources of life and inspiration'.
   a Brainstorm ideas for and against. Consider UNESCO's aims and role, level of success, sites mentioned in previous units, the daily needs of people, and other responsibilities of governments.
   b Conduct a class debate moderated by the teacher.

Inquiry tasks

What is time?

Conduct further research into how time has been measured in the past. Choose from the following methods: shadow clocks, sundials, marked candles, incense clocks, water clocks, hourglasses, calls to prayer and astrolabes.

a Examine your choice in a PMI table. Include at least two points in each column and an image of your chosen method.

b In pairs, compare the method you each chose. Together, conduct a SWOC analysis on both methods of calculating time. Divide your page into four and use the labels 'Strengths', 'Weaknesses', 'Opportunities' (for change) and 'Consequences' (of using that method).

c Research the introduction of the prime meridian at Greenwich and write a list of pros and cons that were raised at the time. Analyse the significance of the establishment of the Greenwich meridian.

d Imagine you are a supporter at the 1884 International Meridian Conference. Present your findings as a speech or a diary entry of 100 to 200 words. Include arguments for the benefits of international cooperation, time zones and the site of London being chosen for the prime meridian.

Conserving archaeological sites

Select an ancient site, such as the ancient Greek city of Ephesus in Turkey or pharaohs' tombs in Egypt, or consult UNESCO's World Heritage List for other ancient sites.

a Examine the physical site using a Y-chart. Consider what is at the site itself, where it is located and the number of tourists visiting per year.

b Criticise or support the current practice of tourist access to the site. Write a 100- to 200-word report. Include information on the current strategies used to manage the site—tourists, weather, pests and research are all possible issues.

c Write a 200-word letter to the director of your chosen site. Advise how changes could be implemented to ensure the site is protected for future generations. Think about protecting the site and its artefacts in different ways while still allowing people to connect with the past.

Investigating archaeological sites

Your task is to evaluate the impact of an archaeologist on a famous or interesting archaeological site. You may like to consider exploring the contribution of Arthur Evans at Knossos, Leopoldo Batres at Teotihuacán or a number of directors at Pompeii.

a Include two maps—one showing the location of the site and another of the site itself—as well as images and descriptions of relevant artefacts.

b Research how the site came to be discovered, who worked there and the type of archaeological techniques they used. Present this information either as an eight-frame cartoon or as a 100- to 200-word promotional poster for an upcoming national museum exhibition.

Creation stories

The Dreaming is a set of stories that Aboriginal people tell to explain their creation, beliefs and the purpose of life. Other societies throughout time also have sets of stories that explain life. Your task is to explore two creation stories and compare their purposes.

Present your comparison as either a drama performance or two artworks.

a Research Dreaming stories and select one that you will retell.

Source 8.8.1 The Library of Celsus is an ancient Roman three-storey building in Ephesus in modern-day Turkey. Construction was completed in 135 AD and it housed 12 000 scrolls. The contents were destroyed by fire in 262 AD and the building was further damaged in 400 AD. The facade was restored in the 1960s.

b Conduct further research to find a creation story from another ancient culture. You could retell the Maori creation myth of Rangi and Papa, the Mesopotamian story of Apsu and Tiamat, the Sumerian Eridu Genesis, or any other ancient creation myth of your choice.

c Choose a method of presentation. You will need to write a script and consider costuming and props for a drama performance. For an artwork, you will also need to write 100 words describing your reasons for your style of portrayal.

d Lastly, draw up a Venn diagram to compare the two creation stories. Consider not only the events and character types in the story, but also the story's purpose.

GLOSSARY

ancestral spirits spiritual beings who shaped the Earth during the Dreaming, providing life, laws and food to people

barter to exchange raw materials or finished products, which could include ochre, shells or tools

chronological order placing events in the order in which they occurred in time, from earliest to most recent

clan a large group of people who have rights to a defined area of land; membership is based on blood, marriage and totem

evidence a source that is used to prove or answer a historical question

excavation when archaeologists dig into the earth to find artefacts

shell middens archaeological deposits where shells are mostly visible; some have been built up over thousands of years

stratigraphy the layers in the ground that build up over time

timeline a way of visually representing events in their time order using a set scale

totem an animal, plant or other natural object that represents a person or a group; it connects people to the universe

Ancient Egypt

Ancient Egypt, one of the first great civilisations, began about 5000 years ago on the banks of the Nile River and prospered for 3000 years. Our knowledge of this great civilisation is kept alive today by the treasures it left behind, such as the golden burial mask of Tutankhamen, the great **pyramids** of Giza and the **temple** of Abu Simbel.
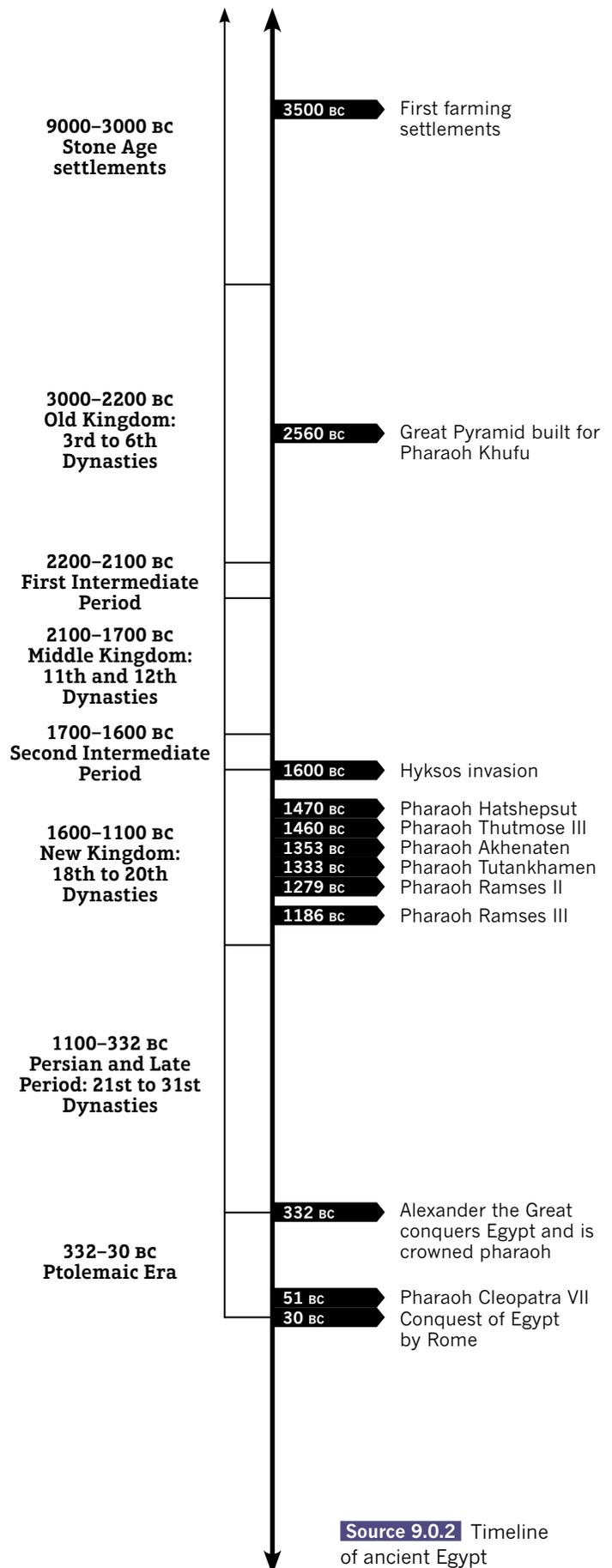
Source 9.0.1 Ramses II, a relief from his **tomb**, Egypt, 13th century BC

9000–3000 BC Stone Age settlements

3500 BC — First farming settlements

3000–2200 BC Old Kingdom: 3rd to 6th Dynasties

2560 BC — Great Pyramid built for Pharaoh Khufu

2200–2100 BC First Intermediate Period

2100–1700 BC Middle Kingdom: 11th and 12th Dynasties

1700–1600 BC Second Intermediate Period

1600 BC — Hyksos invasion

1600–1100 BC New Kingdom: 18th to 20th Dynasties

1470 BC — Pharaoh Hatshepsut
1460 BC — Pharaoh Thutmose III
1353 BC — Pharaoh Akhenaten
1333 BC — Pharaoh Tutankhamen
1279 BC — Pharaoh Ramses II
1186 BC — Pharaoh Ramses III

1100–332 BC Persian and Late Period: 21st to 31st Dynasties

332 BC — Alexander the Great conquers Egypt and is crowned pharaoh

332–30 BC Ptolemaic Era

51 BC — Pharaoh Cleopatra VII
30 BC — Conquest of Egypt by Rome

Source 9.0.2 Timeline of ancient Egypt

Geography of ancient Egypt

Development of a society

In about 3800 BC, the nomadic people who lived in Egypt began to farm. The Egyptian farmers learnt to predict when the Nile River would flood and were therefore able to plant and harvest their crops of flax, barley and wheat successfully. The Egyptians domesticated animals, stored their food and set up small towns along the Nile. They were no longer nomadic people.

The Nile River

The landscape of Egypt is predominantly desert. Less than 10 per cent of the land is settled or used for agriculture. The Nile transformed Egypt's almost waterless desert into one of the most fertile areas on earth.

The Nile begins in tropical Africa and is formed by two main tributaries. The White Nile begins in Lake Victoria in east Africa, while the Blue Nile starts in Lake Tana in the snow-covered Ethiopian mountains. Where the two rivers meet is known today as 'al-Mogran', meaning the confluence.
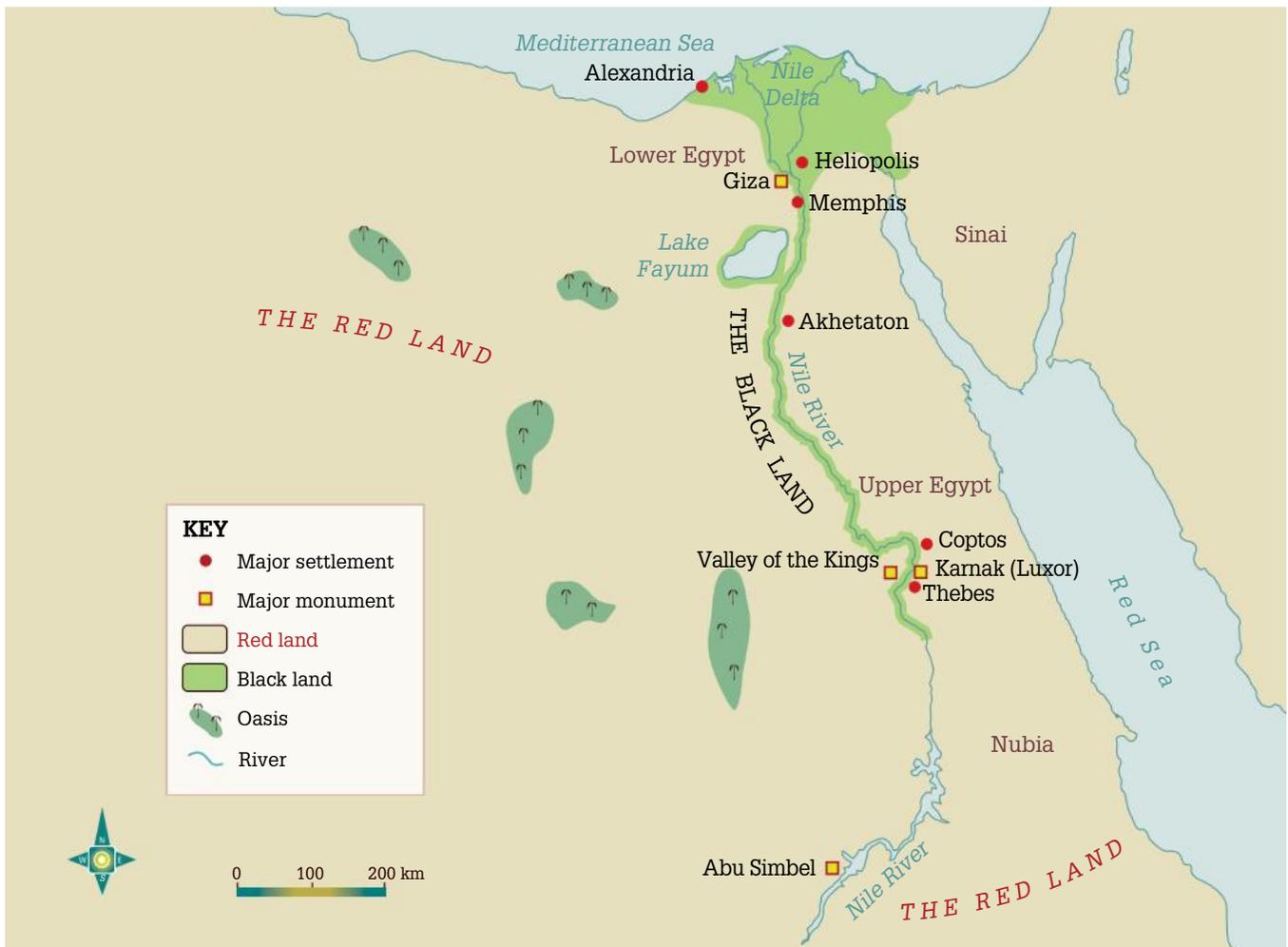
Source 9.1.1 Ancient Egypt

Inundation

In ancient times the Nile flooded every year at the same time. This became known as the inundation. It made agriculture and settlement in Egypt possible. In June the Nile began to rise with water coloured green by vegetable matter. By August the waters were thick and muddy, and in September the flood peaked. By the following May the river level had dropped to its lowest point.

The height the waters rose during the flood was critical. The ideal was 7.5 metres high. A flood level over 8 metres meant destruction of housing and agricultural lands, whereas a flood of less than 6 metres would result in famine.

When the floodwaters of the Nile subsided, they left behind thick layers of mud that created fertile farming lands in which to grow grain. Without the inundation Egypt would have been an uninhabitable desert plain. Ancient Greek historian Herodotus (c. 484–c. 425 BC) described the Nile as a gift to the Egyptians, providing food, water, rich soils and an environment for plant and animal life to flourish in.

The Black Land

The Black Land is a narrow strip of land that runs along both sides of the river. It also refers to the fan-shaped **delta** where the Nile enters the Mediterranean Sea and Lake Fayum, a large oasis to the west of the Nile. It is called the Black Land because of the fertile black mud that the Nile deposited each year.

Most Egyptians were farmers. Their farms ran along the banks of the Nile. Not only did this location have the most fertile lands, but it gave farmers easy access to water to irrigate their crops. The main crops grown were wheat and barley. They also grew cucumbers, peas, lettuce, garlic, onions, dates and pomegranates.

> ### Did you know?
> The ancient Egyptians did not call their land 'Egypt'. In ancient times, Egypt was known as 'Kemet', which simply means 'Black Land'.

The Red Land

In contrast to the fertile Black Land, the deserts were referred to as the Red Land because of the colour of the sand. It was in the Red Land that the Egyptians buried their dead, built some of their temples and hunted wild animals. The desert lands also supplied the Egyptians with stone for building and semiprecious stones. Dotted about the desert were some small but important **oases**, some of which were famous for their wines. While the Red Land was hot and waterless, it did serve as a barrier against would-be invaders.

ACTIVITIES

Remembering and understanding

1 Refer to Source 9.1.1 to answer the following questions.
   a Into which sea does the Nile River flow?
   b Identify which parts of Egypt were green and fertile.
   c Is Thebes located in Upper or Lower Egypt?
   d Identify six cities located in the Black Land.

2 Outline why the Nile was important to the Egyptians.

Applying and analysing

3 Read 'Inundation' carefully and use the information to create a flow chart showing the key features of the yearly flooding of the Nile.

4 Use a Venn diagram to compare and contrast the features of the Black Land and the Red Land.

Evaluating and creating

5 The ancient Greek historian Herodotus described the Nile as a gift to the Egyptians. Do you agree or disagree with this statement? Provide evidence to support your point of view.

Key groups in ancient Egyptian society

Social structure

Egyptian society was hierarchical. The **pharaoh** had absolute power. However, the pharaoh could not rule alone and so had a number of officials who helped to maintain law and order, record the pharaoh's decisions and collect taxes. The merchants, while not of noble birth, were often very wealthy as a result of trade and other commercial business. They were the next most important people in Egypt. Then came the craftworkers and peasants, and at the very bottom were the slaves (see Source 9.2.1).

Pharaoh

Nobles, chief officials and priests

Merchants and scribes

Craftworkers and scribes

Peasants

Slaves

Source 9.2.1 Social groups in ancient Egypt

Nobles and chief officials

Nobles were the landowning ruling class. Many from this class became the chief officials who helped the pharaohs govern Egypt. Nobles were usually very wealthy and lived extremely luxurious lifestyles. Nobles used peasant farmers to work on their land.

Merchants

Merchants were often very wealthy from their trading and commercial businesses. They enjoyed a comfortable lifestyle with large houses and some servants and slaves. Merchants were not of noble birth and so they had very little power in politics and government. Male children were usually educated and sometimes entered government or religious service.

Scribes

The Egyptians kept records of everything and so there was a large number of scribes in government, temple and private employment. A **scribe** was a well-educated male who could read, write and calculate. Scribes were responsible for measuring, inspecting, checking, rationing and recording.

Some scribes were clerks or secretaries who wrote letters to officials on behalf of the king or vizier. Others were legal specialists responsible for writing contracts. Many scribes worked on building projects; they kept a record of the type and quantity of materials used and would record any broken equipment supplied to the workers. Scribes were also employed to write inscriptions in the tombs and the temples. Scribes were highly regarded in ancient Egyptian society and they enjoyed a comfortable lifestyle with no hard labour.

Craftworkers

Craftworkers were skilled tomb builders, potters, metalsmiths, jewellers, stonemasons and carpenters. Workers and their families lived in small houses in villages and towns. Some craftworkers ran small shops from the front room of their house, while others ran stalls or worked on big building projects (for example, the construction of a pharaoh's tomb or temple).

Source 9.2.2 Goldsmiths at work, from an ancient Egyptian wall painting in the tomb of Nebamun and Ipuki, Thebes, c. 1411–1375 BC

Peasants

Peasants were mostly farmers who worked the land of nobles in return for accommodation and occupation. The majority of the food they grew was paid in taxes to the landowner. The pharaoh or nobles could demand peasants work on big building projects (for example, the construction of a tomb or temple) during the inundation.

Slaves

Slaves were at the very bottom of the social pyramid. They had no rights and were considered the 'property' of their owner. Few were ever set free by their owner, and slaves in Egypt were never able to buy their freedom. Despite their lowly status, slaves were an important group in Egypt because they provided much of the labour needed for building projects, mining and farming. Slaves could also be set to work as household servants or scribes; these slaves were lucky because their working life was much easier than those who laboured in the fields or in mines.

ACTIVITIES

Remembering and understanding

1 Draw up a two-column table with the headings 'Nobles' and 'Peasants'. Contrast the roles of nobles and peasants. List three comparative differences between them.
2 Look at Source 9.2.2. Record all the jobs being done by craftworkers in this scene.

Applying and analysing

3 You have recently been appointed scribe to the vizier of Ramses II. Write a letter to your best friend describing a typical day at work.

Evaluating and creating

4 Compare and contrast the roles of a scribe and a merchant. Prepare a one-minute speech to deliver to the class stating which role you would prefer and the reasons for your preference.
5 'Slaves were the most important social group in ancient Egyptian society.' Discuss the arguments for and against this statement.

Government, law and religion

The pharaoh

The pharaoh was the most important and powerful person in ancient Egyptian **society**. The pharaoh was responsible for protecting Egypt from invaders, making laws and maintaining order. The people believed the pharaoh was descended from Re, the sun-god, and was a **god** on Earth. The pharaoh's divine duties included:

- performing sacred rituals in all the temples of the land
- making sure *ma'at* or justice was maintained
- controlling the floodwaters of the Nile River
- making sure there was enough food for people to eat
- leading the army and defending Egypt against invasion.

Symbols of power

The clothing and accessories worn by the pharaoh symbolised (visually demonstrated) the pharaoh's power over the land of Egypt and its people (see Source 9.3.2).

Source 9.3.1 A giant Pharaoh Ramses II clutching war prisoners by the hair; a painted limestone carving from Memphis, 1279–1213 BC. Held in the Egyptian Museum, Cairo

Symbol	Description	Power
False beard	Made of goat's hair	Manliness, bestowed by the god Osiris
Heka (means 'ruler')	A shepherd's crook, held in one hand	Magic and guardianship of his people
Nekhata	A whip, held in the other hand	Absolute power over his people
Shemset	An apron with a bull's tail at the back of the belt	Strength
A crown (varied according to the ceremonial occasion) The three most common were: 1 *pschent* 2 *nemes* 3 *khepresh* or war crown	1 A double crown 2 A blue- and gold-striped cloth headdress 3 A tall headdress made of blue cloth or leather decorated with gold discs	1 Rule over Upper and Lower Egypt 2 Power and kingship 3 Worn in battle and at certain ceremonies

Source 9.3.2 Symbols of the power of the pharaoh

Government structure

The government of ancient Egypt was divided into three main areas, as outlined in Source 9.3.3.

Pharaoh

Royal family

The royal family was made up of the immediate members of the pharaoh's family including the queen mother, the pharaohs' chief wife, his lesser wives and the princes and princesses. The household also included sons of commoners who were being educated at the pharaoh's expense. These boys would become the next generation of officials.

Internal administration

The internal administration looked after the royal estate, the military and religious institutions, and the civil service. Viziers, chancellors and overseers supervised these areas of government. These officials reported directly to the pharaoh and enjoyed a very high status in ancient Egyptian society.

External administration

The organisation and supervision of Egypt's provinces, for example Syria–Palestine and Nubia, was carried out by governors who worked together with the local kings or princes.

Source 9.3.3 The structure of government in ancient Egypt

Role of officials

Viziers

The pharaoh, despite being the most powerful person in Egypt, needed assistance to rule the country. There were a number of officials who controlled the royal household, the military, religion and domestic affairs. The most important official was the vizier. The vizier was in control of administration. His tasks were to:

- make sure law and order was kept throughout the land
- look after the pharaoh's household and lands
- decide how much tax people should pay and make sure taxes were collected
- appoint and supervise officials
- receive tribute and visitors from foreign countries
- look after all public building programs
- control all traffic on the Nile.

High priests

The high priest was appointed by the pharaoh and was responsible for overseeing all priesthoods and religious institutions.

Priests were well educated and temples were not only places of worship but also places of learning. Any boy wanting to enter religious or domestic government had to attend a temple school from the age of 14.

Priests carried out daily rituals in order to please the gods and ensure the wellbeing of the land and the people of Egypt. High priests supervised religious building programs and looked after the day-to-day running of the temples. The temples required regular maintenance and cleaning, and temple libraries and storerooms had to be kept in good order.

Chancellor

The chancellor was the chief official of the royal court. He was referred to as the 'seal-bearer' because he carried with him the pharaoh's personal seal (the seal was equivalent to the pharaoh's signature and carved in stone). The chancellor represented the pharaoh on trading and mining expeditions.

Religion in ancient Egypt

Egyptian religious beliefs were linked to the land and climate. This can be seen in their view of creation (see Sources 9.3.4 and 9.3.5).

Myth of creation	Natural environment
In the beginning the entire earth was covered with water.	During the inundation the Nile Valley was covered with water.
A small island rose up out of the water.	Small mounds of earth were left behind after the floodwaters drained away.
The first god, Nut, came out of the island and created life.	Crops could be grown in the rich soil of the Nile Valley after the inundation.

Source 9.3.4 Comparison of the myth of creation with the natural environment

Temples

There were two main types of temples in ancient Egypt: cult temples containing the images of gods and goddesses for worship, and funerary temples which were shrines to pharaohs.

The largest temple site was at Karnak (Luxor today). Each temple was decorated with huge stone statues of the god of the temple and the pharaoh who paid for its construction. The statues were brightly painted and the walls of the temples were decorated with reliefs.

The temples were sacred places and only the priests were allowed inside. Common people had to pray outside the temple and were allowed inside only for very special occasions. Each day sacred rituals were performed in the temples; for example, incense was burnt in the mornings (to purify the air) and offerings of fresh food and water were made to the god of the temple.

Source 9.3.5 A funerary papyrus depicting Nut, the sky god, giving birth to the world c. 1069–945 BC. Held in the Egyptian National Museum, Cairo

Egyptian gods

Name	Description	Appearance
Amun-Ra	• A national god • A patron for the pharaoh • Represented with a ram's head or body	
Anubis	• God of the dead • Believed to be the inventor of **embalming** • Represented with a jackal head or body	
Horus	• God of the sky • The pharaoh was believed to be Horus on Earth • Represented with a falcon's head or body	
Isis	• Most important goddess • A magical healer; she cured the sick and brought the dead back to life • Represented as a woman with a solar disk and cow's horns on her head	
Osiris	• The judge of the dead in the afterlife • A god of both fertility and death • Represented as a mummy	
Seth	• A sky god, lord of the desert, and master of storms, disorder and warfare • He was a trickster • Represented with a dog's body, square-tipped ears, tufted tail and long, curved nose	
Thoth	• God of wisdom • Believed to be the inventor of writing • Represented with either an ibis or baboon's head	

Source 9.3.6 Gods of ancient Egypt: many of the Egyptian gods were linked to the natural environment. For example, Re (Ra or Amum-Ra) was the sun-god and Seth was associated with the desert.

ACTIVITIES

Remembering and understanding

1 Explain why the pharaoh was the most important and powerful person in ancient Egyptian society.
2 Who was directly responsible for law and order in ancient Egypt?
3 Explain how the natural environment influenced religious beliefs of the ancient Egyptians.
4 What is the difference between a cult temple and a funerary temple?
5 Who was allowed inside a temple and what was the purpose of them entering the temple?

Applying and analysing

6 Using a PMI chart, outline how ancient Egypt was governed.
7 Make a copy of Source 9.3.5, leaving room around it for notes. Clearly label each figure. Connect speech bubbles to each figure and add text that tells this part of the creation myth.
8 Examine Sources 9.3.5 and 9.3.6.
   a Outline in what ways the depiction of gods support the theory that ancient Egyptian religious beliefs were linked to the land.
   b Write three statements about ancient Egyptian beliefs or everyday life from your analysis of Sources 9.3.5 and 9.3.6.

Evaluating and creating

9 Create a job advertisement for a vizier. Your advertisement should include:
   a the title of the job
   b a job description, including the roles of the position
   c qualities of the ideal candidate for the job
   d closing date for applications
   e who to send enquiries and the application to.

Everyday life

Everyday life

Everyday life in ancient Egypt varied according to a person's status and wealth. Life for peasants was hard work and they lived off a basic diet, while craftworkers enjoyed a more diverse diet and could afford a few luxuries. The nobility lived in large villas, had time for leisure activities, ate rich foods and were attended to by servants and slaves.

The lives of men

Royalty

The pharaoh's jobs included:

- inspecting land, buildings and people
- leading military expeditions
- receiving foreign ambassadors and dignitaries
- attending religious festivals along the Nile.

The pharaoh was a hard worker, despite being king. The pharaoh would listen to daily reports from the vizier, hold audiences, read dispatches and dictate replies. The pharaoh's leisure time was spent at banquets, being entertained by musicians and dancers, and taking part in hunting expeditions.

The wealthy

Many from the nobility were exceptionally wealthy and could afford grand country villas with gardens and pools. Some could also afford a second house in town, household officials, servants and slaves, fine linen clothing, jewellery and perfumes, chariots, weaponry and large boats with fine decoration.

For the wealthy a large number of servants carried out the menial tasks, leaving the wealthy man's family with a good deal of leisure time. Leisure activities of the wealthy included fishing on the Nile, hunting bulls from a chariot, banquets, and musical and dancing entertainment.

Craftworkers

Artists and craftsmen were employed by the pharaohs, temples and wealthy individuals. Workers were organised into gangs and were supervised by a foreman and scribe. Men worked in four-hour shifts for eight days straight in the Valley of the Kings. They camped near the tombs during their eight-day shift and returned to their village and families on their days off. Craftworkers were paid in monthly rations comprising emmer wheat flour (for making bread) and barley (for making beer).

Craftworkers lived in single-storey houses with flat roofs. Houses generally contained four rooms with a courtyard at the back for cooking. The entrance hall usually had offering tables and perhaps a bust of an ancestor. There was very little furniture as it was very expensive. A brick platform along the walls would have been used for seating during the day and beds at night. Light filtered through small high windows and the floor was simply hard-packed earth.
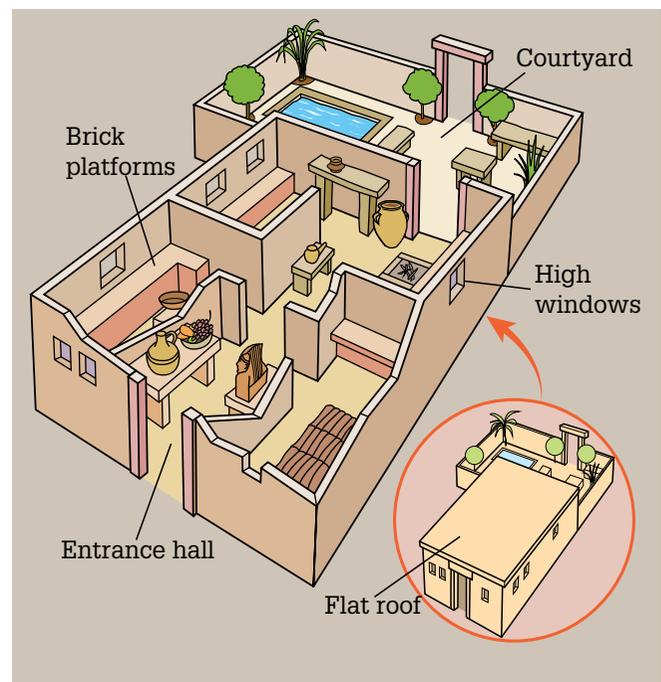
Source 9.4.1 A modern artist's impression of a craftworker's house

Peasants

Most peasants in ancient Egypt were farmers and life on the land was hard. During the inundations the farmer would spend his time repairing equipment and making objects for use in his household. He might also be conscripted to work on one of the pharaoh's building projects. After the floodwaters drained away, the farmer would begin ploughing and planting the land. This was hard work as the soil was heavy with water and everything was done by hand. In mid-March the harvest began and the farmer would harvest, thresh (separate the grains from the stems), winnow (separate the grain from dirt and other materials), measure and transport his crop to storage bins.

While peasants worked hard they were also shown on tombs as relaxing: snoozing under a tree, playing their flute, drinking beer with friends and fishing on the Nile. Religious festivals would have given them an opportunity to take a break from the everyday routine.

The lives of women

Women had the same legal status as men in ancient Egypt. A woman could buy and sell land, she could sign contracts, give evidence in a court of law and she could divorce her husband. While Egyptian women enjoyed greater freedom and independence than any other women of the ancient world, Egyptian literature, painting and sculpture show women in a supportive but subordinate role to men.

Royalty

Many royal women took important roles in Egyptian state affairs. For example, Tuya, mother of Ramses II, wrote personally to the Hittite king after a peace treaty was signed with Egypt. Nefertari, the great royal wife of Ramses II, is shown in temple and tomb decorations as participating in religious festivals with her husband (see Source 9.4.2). The pharaoh's daughters were also held in high regard and would sometimes accompany their parents on tours of inspection or at religious festivals. However, it was very unusual for a woman to become pharaoh in her own right—Hatshepsut is the most famous exception.

Source 9.4.2 A wall painting from the tomb of Queen Nefertari. It portrays Nefertari (left) presenting scrolls to Thoth, god of wisdom.

The wealthy

Women's status in society was linked to their husbands and their status increased with motherhood. This meant that a married woman was more respected than an unmarried one in ancient Egypt. A key role for women was to look after the home. For wealthy women this involved supervising the slaves and servants, so that all domestic tasks were carried out efficiently and well. A wealthy woman was also expected to support her husband in his career, and there is evidence to suggest that it was acceptable for a woman to stand in for her husband if he was absent. The only employment open for wealthy women was to work in a temple as a musician.

Village women

Village women, who were usually the wives of craftsmen, looked after their children and supplemented the family's income by spinning, weaving and dressmaking. They often had the assistance of a slave to help with the menial household duties of grinding corn and making bread. While most careers were closed to women, they could serve in the temples as minor priestesses, singers, musicians and dancers.

Women were equal to men in the eyes of the law. If a woman inherited property she kept control of it, even after marriage. She was also allowed to leave her property to whomever she chose. If she divorced her husband, a woman kept control of her private property.

Peasants

Peasant women worked hard in the fields alongside their husbands and at baking, brewing, weaving and spinning. They are shown in wall paintings as carrying baskets to storehouses and providing refreshments or selling beer, bread, vegetables and fish at markets.

The lives of children

Royalty

Only the highest ranking men and women were appointed as nurses and tutors for the pharaoh's sons and daughters. Both boys and girls learnt how to read and write and to paint. A relief showing the young Amarna princesses riding their own chariot indicates that girls were brought up to be independent and were allowed to engage in physical activities. Princes were also taught how to swim, hunt and engage in warfare.

Family life

Family life was very important for all Egyptians, no matter their social status. The Egyptians loved children and hoped for large families. Although boys were favoured, daughters were well cared for, and tomb scenes show affection between parents and all their children. Many scenes show parents and children enjoying each other's company in leisure activities (see Source 9.4.3).

While the children of wealthy families attended school, most children stayed at home and learnt from their parents. It was usual for boys to follow in their father's profession. Girls learnt domestic skills from their mothers.

The remains of many Egyptian toys have been found by archaeologists. Toys were generally homemade and included objects such as leather or cloth balls and pottery and wooden animals. Some of these animals are on wheels and could have been pulled along with string.

Did you know?

The ancient Egyptians played board games. Senet was a board game played on a grid of 30 squares arranged in three rows of 10. A senet board has two sets of pawns with at least five in each. Moves were determined by knucklebones; however, the rules of the game remain a topic for debate.

ACTIVITIES

Remembering and understanding

1 List three important roles of the pharaoh.
2 Describe the lives of the wealthy in two to three paragraphs.
3 Summarise ancient Egyptian entertainment and leisure activities. Your summary should include information from all classes of society.
4 Create a flow chart showing the key events in a farmer's year. Annotate your flow chart with appropriate illustrations for each key point.

Applying and analysing

5 Draw up a two-column table with the headings 'Women and girls in ancient Egypt' and 'Women and girls in the 21st century'. Compare and contrast the roles, position and rights of the two groups and write your responses in the columns.

Evaluating and creating

6 Look at Source 9.4.3. Record all the activities depicted in this scene.
7 Create a 'For Sale' advertisement for the house illustrated in Source 9.4.1. Your ad should include:
   a a catchy sales title
   b four to five features of the house (maximum of one sentence for the description of each feature)
   c who to contact for more information.

Source 9.4.3 Nakht and his family hunting birds and fishing, copied from a painting in the tomb of Nakht, c. 1400–1390 BC. The Metropolitan Museum of Art, New York

Source 9.4.4 Detail of an ancient Egyptian painting in the Louvre Museum, Paris

Warfare

A military power of the ancient world

By the time of the New Kingdom (c. 1600–1100 BC), Egypt had become a military might in the ancient world. Egypt had adopted the superior weapons introduced by Asiatic invaders from the east—new types of bronze swords and daggers, bronze and leather armour, the powerful compound bow and, most important of all, the horsedrawn chariot (see Source 9.5.1).

Organisation of the army

The pharaoh was commander-in-chief of the armed forces and often led the army to battle. A war council helped the pharaoh with tactics and strategy. By the reign of Ramses II, the army was separated into four divisions (see Source 9.5.2).

The charioteers held the most prestigious position in the army. Each chariot was drawn by two horses with two charioteers. One man drove the chariot on the battlefield; a job requiring great skill. The second man was a fighter who was armed with a spear and a bow and arrows.

The foot soldiers were divided into smaller groups depending on the weapon they used. There were spearmen, archers, axe-bearers, clubmen and slingers. These smaller groups were made up of a mixture of highly experienced fighters and new recruits.

The army at war

Soldiers were provided with weapons at the state's expense. A scribe would carefully record the name of each soldier and the equipment he was provided with. Equipment included swords, javelins and bows and arrows. By the time of Ramses II, soldiers were also provided with armour to cover the chest area and a helmet. Soldiers were also provided with rations of grain, bread, beef, cakes, vegetables and wine.

Source 9.5.1 A reproduction of a relief in the Ramesseum (Ramses II's mortuary temple) at ancient Thebes, depicting Ramses II at the Battle of Kadesh

The pharaoh

Commander-in-chief

Amun division — Ptah division — Re division — Seth division

Approximately 5000 men in each division

The structure and number of smaller units is not known

Each division subdivided into smaller units of approximately 250 men
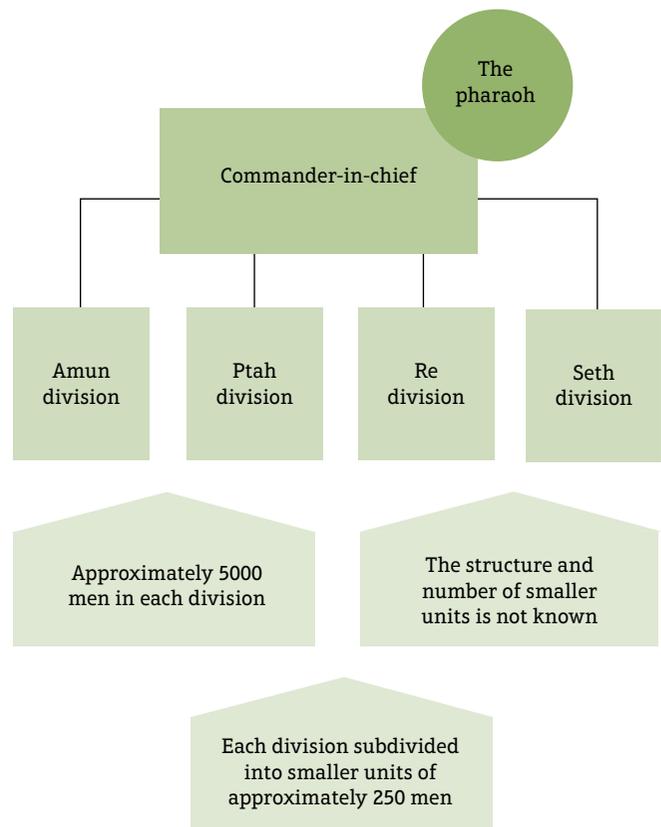
Source 9.5.2 Organisation of the army

Ancient Egyptian navy

The earliest ships that sailed on the Nile were made out of reeds; the ships used in battle during the New Kingdom period (1600–1100 BC) were made of cedar wood, required about 50 oarsmen and were fast and efficient. One of the primary uses of the naval fleet was to transport troops and supplies to battle locations. Naval ships facilitated speedy communication throughout the vast Nile valley. Ships were used as a platform from which archers would fire their arrows on the enemy. The navy was also used to destroy any enemy fleets that attempted an invasion of Egypt. One of the most famous confrontations of the New Kingdom period was the war against the Sea Peoples during the reign of Ramses III. The Sea Peoples were raiders from the region around the Aegean Sea in southern Europe who made many attempts to invade Egypt during the 12th and 13th centuries BC. They had very large ships with sails, unsuitable for the narrow confines of the Nile. The Egyptians had faster ships with oarsmen—these ships could be more easily manoeuvered and the Sea Peoples were resoundingly defeated.

The army in peace time

When the enemy was defeated, the Egyptians would often leave a battalion stationed in the captured town or city to ensure the area remained under Egyptian control. These peacekeeping soldiers were maintained at the cost of the defeated city. Often soldiers would settle down in these foreign lands, marry and raise a family.

Conscripted soldiers returned to their families and pre-war occupation (usually farming) when they returned from battle. The full-time professional soldiers were given either housing in Egyptian city centres or a plot of land to farm. The soldiers who were not farming during peace time could be employed on public building projects, or they might be used as bodyguards on foreign expeditions or for the pharaoh during important public festivals.

Source 9.5.3 A wooden funerary model of marching armed soldiers, from the tomb of Mesehti at Assiut, c. 2350–2200 BC

ACTIVITIES

Remembering and understanding

1 Use Source 9.5.2 and the information in this unit to describe how the Egyptian army was organised.
2 Study Source 9.5.3. Describe the armour and weapons of an Egyptian soldier as shown by the wooden figures found in the tomb of Mesehti.

Applying and analysing

3 Source 9.5.1 is a reproduction, a secondary source based on a primary source. Formulate one or two reasons why such a reproduction would be made.

Evaluating and creating

4 Imagine you are an Egyptian soldier. Write a letter to your wife and children stating all the reasons why you are looking forward to peace time.
5 a With a partner, develop a list of criteria for evaluating effectiveness and power of a military force.
  b Use this list to evaluate the ancient Egyptian military power.

Death and funerary customs

Death: an interruption to life

The ancient Egyptians believed that death was simply an interruption to life. A deceased person would continue to 'live' in the **afterlife**:

- if the correct rituals were performed
- if the body remained intact
- if one's name continued to be remembered.

Body, soul and spirit

The Egyptians believed that a person was made up of six separate elements, the first being the physical body.

THE *KA*

The Egyptians believed that the *ka* was born with a person and after death remained in the tomb with the body. In order to survive, the *ka* needed the body in recognisable form or a lifelike statue.

THE *BA* AND SHADOW

The *ba* or soul journeyed to the afterlife after death; however, it could revisit the tomb at any time. The *ba* was usually represented as a human-headed bird. The person's shadow was linked to the soul.

THE *AKH*

A person's spiritual intelligence or *akh* was described as a shining form that cut all ties with the body and earth after death.

A NAME

The Egyptians believed that if their name continued to be written or spoken they would exist for all eternity. If their name was forgotten the person would cease to exist forever.

The Field of Reeds

The afterlife was referred to as the 'Field of Reeds'. It is highly likely that this Field of Reeds was based on the lush appearance of Busiris, an area of the Nile delta region where there were waterfalls, wide meadows and plenty of plant and bird life.

Afterlife in the Field of Reeds was effortless: the crops never failed, the wheat and barley always grew high, and there were no pests or diseases. In the Field of Reeds the wealthy enjoyed sailing on the Nile, visiting important cities and relaxing with their reunited family members.

Burial practices

Only if the correct burial practices were carried out could a person enjoy eternal life. The most important and well-known burial practice of the ancient Egyptians was **mummification**. It is believed that mummification owes some of its origins to the myth of Osiris.

The myth of Osiris

Osiris was once a king on earth who was popular and well loved by the people. However, his brother, Seth, was very jealous. Seth killed Osiris, cut his body up into 14 pieces and scattered the pieces all over Egypt. Isis, Osiris's faithful wife, journeyed from one end of Egypt to the other and brought back all the pieces. Isis and her sister Nephthys (Seth's wife) wept for Osiris. The great god Re heard them and sent Anubis, the jackal-headed god of **embalming**, and Thoth, the god of wisdom and scribes, to help the sisters preserve the remains of Osiris.

Source 9.6.1 The dead making an offering to Osiris, king of the underworld, fragment of the *Book of the Dead*, 15th–14th century BC. Held in the Museo Egizio, Turin

Once the body was wrapped, Isis and Nephthys changed themselves into birds and fanned life back into Osiris. Osiris did not return to the throne of Egypt, instead he preferred to rule in the underworld. Isis and Osiris's son Horus later took revenge on Seth and was given the throne of Egypt by the gods.

Mummification

The process of mummification was a lengthy one, requiring the embalmer to carry out many different steps (see Source 9.6.2).

Source 9.6.2 Embalmment of Crates, from Dayr al-Madinah, Egypt, Roman period, 3rd–4th century AD. Louvre Museum, Paris

Did you know?

The ancient Egyptians mummified millions of cats, birds and other animals. These animals were not only pets but were believed to be the incarnation of gods. Archaeologists had originally thought these animals were mummified in a sloppy fashion. However, researchers at the University of Bristol, England, analysed samples of tissues and wrappings from a selection of mummified animals and found that the level of care and quality of materials used in animal mummification was the same as that used in human mummification.

Instructions to the embalmer:

1 *Put on your jackal head mask, learn the prayers for the dead and chant these prayers over the body as you work.*

2 *Wash the body thoroughly.*

3 *Take a hook and insert into the left nostril. Remove the brain matter and discard.*

4 *Make an incision in the left side of the stomach and remove the liver, lungs, intestines and stomach. Warning: be very careful not to damage the heart! The heart must stay in place so that it can be judged either good or bad by Osiris.*

5 *Cover the removed internal organs and body with natron (a natural salt used for its preserving qualities) and leave for 40 to 70 days.*

6 *Rub the dried body and internal organs with oils and resins and wrap individually. Please note: fill the empty stomach area with perfumed linen and sawdust first and sew up the wound.*

7 *Place the wrapped internal organs into canopic jars. Do not get the jars mixed up.*

8 *Remember to place amulets (magic charms) in the layers of bandages. These charms will help the deceased make his or her journey into the afterlife.*

9 *Place a well-fitting mask over the face and place the wrapped body in a decorated coffin.*

10 *The body is now ready for delivery to its tomb.*

Source 9.6.3 The mummification process: instructions to the embalmer

Source 9.6.4 A detail from the coffin of Nespawershepi, chief scribe of the Temple of Amun, showing Isis, Osiris, the monster Ammut and Horus, c. 984 BC, Thebes. Now held in the Fitzwilliam Museum, Cambridge

Funeral procession

The embalmed body was collected by relatives and ferried along the Nile to the necropolis ('city of the dead'). The coffin was placed on a sled and drawn by oxen. The wealthy employed professional mourners to accompany the funeral procession. These women wept, screamed, beat their chests, tore at their hair and threw earth over themselves.

Family members carried with them everyday belongings that the deceased would need in the afterlife. These belongings were placed in the tomb with the coffin. A banquet was held at the tomb. Priests said magical prayers and spells, burnt incense and made offerings to the gods.

Weighing of the heart

Before the deceased could enter the Field of Reeds they had to be judged worthy by Osiris. The judgement began with the deceased facing 42 gods. Each god ruled over one sin. The deceased was required to say the name of each god and declare that she or he had not committed any sin. The confessions provide evidence for the moral standards of the ancient Egyptians.

For example, the following acts were considered sinful:

- theft
- murder
- greed
- anger
- trickery
- destroying property
- using the gods' names as curses.

After the deceased confessed they had not sinned, their heart was placed on a set of scales. The heart was weighed against the Feather of Truth. In order for the deceased to pass the test, their heart must be in balance with the feather. If their heart was good, they could advance to stand before Osiris. If judged bad, the heart was eaten by Ammut—a monster that was part crocodile, part lion and part hippopotamus.

Tombs

For all Egyptians it was important to be prepared for death. The correct preparation would ensure the individual gained entry to the Field of Reeds. Tombs were built in order to safeguard the deceased's body from destruction and to house all the goods and food needed for an existence in the afterlife. The most well-known tombs are the pyramids of Giza and the underground tombs in the Valley of the Kings.

Pyramids of Giza

The pyramids of Giza were built as tombs for the pharaohs. The Great Pyramid of Khufu was a massive building consisting of at least 2.3 million blocks of granite weighing 2.5 tonnes each. It is the largest monument ever built for a single person. Each side of the pyramid aligns almost exactly with true north, south, east and west. Archaeologists think that the triangular structure of the pyramid might be representative of the journey the pharaoh would take to the heavens.

There were several burial chambers inside the Great Pyramid for the pharaoh Khufu. However, like most Egyptian pyramids, it was looted by tomb robbers, so few artefacts remain. A sarcophagus remains in one of its chambers, known as the King's chamber, but it held no mummy when it was discovered.

Valley of the Kings

The pyramids were easy targets for tomb robbers, so by the New Kingdom period all royal and noble tombs were moved underground and were constructed in the Valley of the Kings.

Typically, an underground tomb had a burial chamber divided in two parts: there was an area at the front with columns, and a sunken floor at the back where the sarcophagus was placed.

There were small chambers before and beside the burial chamber, and in the more elaborate tombs there were sloping passageways, vaulted ceilings and multiple rooms with beautiful wall paintings. The paintings and reliefs found within tombs were never intended as decoration. The painted scenes and written spells and incantations were there to help the deceased make their journey to the afterlife. None of the scenes were intended to be seen after the tomb was sealed. The tomb was the deceased's house for all eternity.

Source 9.6.5 Painted walls and column in the tomb of Seti I, the second king of the 19th Dynasty, son of Ramses I and Queen Sitre. Valley of the Kings, Thebes

ACTIVITIES

Remembering and understanding

1 Why was the afterlife referred to as the 'Field of Reeds'?
2 Outline the reasons for holding a funeral procession.
3 Describe the purpose of Egyptian tombs and provide one example of a tomb from ancient Egypt.
4 Why did tombs go underground in the New Kingdom period?

Applying and analysing

5 Sketch a picture of a person. Annotate your picture with labels for the *ka*, *ba*, shadow, *akh* and name.

Evaluating and creating

6 Design a cartoon strip of six to eight panels that retells the myth of Osiris. Your cartoon should include key events and people from the myth.
7 'The time and effort that went into mummification in ancient Egypt was, in fact, just a waste of time.' Comment on this statement.
8 Photocopy or sketch the scene from Source 9.6.4 into your notes. Add speech bubbles to the key figures in the scene, to explain what might be taking place.

The tomb of Tutankhamen

Discovering the tomb

In November 1922 Howard Carter discovered the tomb of a little-known king. The tomb had lain almost undisturbed for over 3000 years. Carter describes the breathtaking first glimpses into the tomb in his book *The Tomb of Tutankhamen*. Read Source 9.7.1 to get a taste of what it must have been like to gaze into history.

> *At first I could see nothing … as my eyes grew accustomed to the light, details of the room within emerged slowly from the mist, strange animals, statues, and gold—everywhere the glint of gold. For the moment—an eternity it must have seemed to the others standing by—I was struck dumb with amazement, and when Lord Carnarvon, unable to stand the suspense any longer, inquired anxiously, 'Can you see anything?' it was all I could do to get out the words, 'Yes, wonderful things.'*

Source 9.7.1 Howard Carter describes opening the tomb of Tutankhamen, extract from his diary (26 November 1922)

Ancient robbers

The tomb had been entered in ancient times, but historians speculate that the would-be robbers must have been disturbed as the funerary items were in chaos but still there.

Tomb contents

ANTECHAMBER

The antechamber contained about 700 items, including:

- the components of four chariots
- a collapsible sunshade
- senet boards
- four ritual couches

- two life-sized wooden figures (images of Tutankhamen) that stood guard at the entrance to the burial chamber. The clothing and jewellery of the figures are coated with gold and the sandals with bronze (see Source 9.7.2).

Source 9.7.2 A reconstruction of the antechamber in Tutankhamen's tomb, showing piles of objects, including two life-sized figures guarding the entrance to the burial chamber. Valley of the Kings, Thebes

Burial chamber

The burial chamber was almost entirely filled by an enormous sarcophagus covered in gold. Inside, there were three more sarcophagi, and inside the smallest one were four person-shaped coffins (see Source 9.7.3). The burial chamber is the only decorated chamber in the tomb with scenes from the funeral procession and of the pharaoh being welcomed into the afterlife by a range of gods.

Source 9.7.3 English Egyptologist Howard Carter examining Tutankhamen's golden sarcophagus in 1922

Treasury

The treasury contained over 5000 objects with most of them funerary in nature. Items included:

- Tutankhamen's canopic chest
- a large statue of Anubis
- model boats
- two more chariots
- two mummies of foetuses that some believe to be the stillborn children of Tutankhamen.

A cold case closed?

There have been many theories regarding how Tutankhamen died. Read Sources 9.7.4 and 9.7.5 for some modern-day commentary.

A CT scan of King Tutankhamen's mummy has disproved a popular theory that the Egyptian pharaoh was murdered by a blow to the head more than 3300 years ago ... Instead the most likely explanation for the boy king's death at 19 is a thigh fracture that became infected and ultimately fatal, according to an international team of scientists.

Source 9.7.4 Extract from 'King Tut died from broken leg, not murder, scientists conclude', *National Geographic*, 1 December 2006

A hole in the king's cranium, discovered in a 1968 X-ray, suggested murder, but modern scanning techniques led scientists to believe that the hole was created when archaeologists removed Tut's mask. The X-ray also revealed a broken leg. DNA studies and CT scans in 2010 suggested that King Tut died from malaria and avascular bone necrosis, both perhaps exacerbated by the broken leg.

Source 9.7.5 Answer to 'How did King Tutankhamen die?' by Curiosity.com

ACTIVITIES

Remembering and understanding

1 Use Source 9.7.1 to write a newsflash on the discovery of the tomb of Tutankhamen.
2 Why do historians think that the tomb robbers were not successful?

Applying and analysing

3 Use Sources 9.7.4 and 9.7.5 to answer these questions:
   a Why was it originally believed that Tutankhamen was murdered?
   b What evidence was used to discredit the murder theory?
   c What is the most recent theory as to the cause of Tutankhamen's death?
   d Identify how the two sources differ in the theories provided for Tutankhamen's death.
4 a What types of objects were buried in tombs?
   b What do the objects identified in Question 4a reveal about Egyptian beliefs in life after death?

Evaluating and creating

5 From the evidence in Tutankhamen's tomb, what hypotheses can you form about Egyptian society and their pharaohs?

Significant individuals

Ramses II

Ramses II came to the throne at age 25 and ruled for the next 67 years. He is often regarded as the greatest and most powerful pharaoh of ancient Egypt.
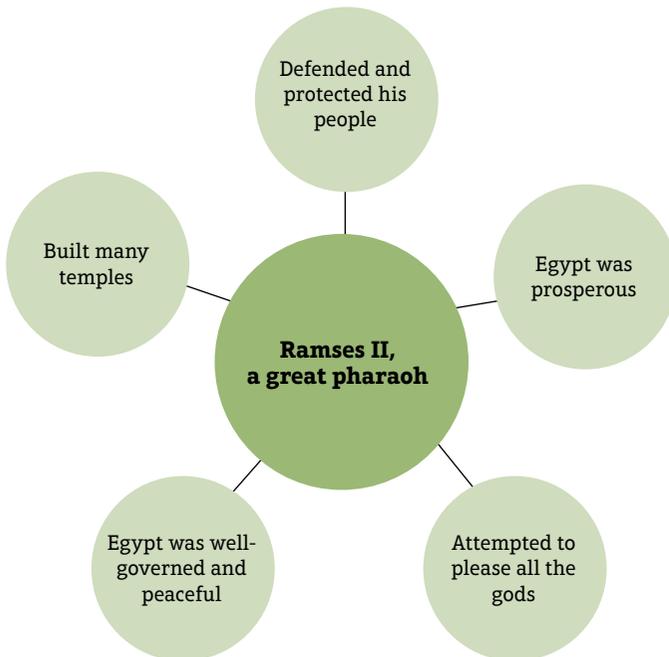
Source 9.8.1 The great Ramses II

At war

Ramses II's most famous campaign was the battle against Kadesh. In year 5 of his reign, Ramses, with several of his sons, left his capital, Pi-Ramesse, and marched towards Kadesh in Syria. On arrival, Ramses was tricked by Hittite allies. The allies deliberately lied to Ramses, telling him that the enemy was 200 kilometres to the north, when in fact the Hittites were lying in wait only 3 kilometres away. The Hittites swiftly attacked and the Egyptian troops panicked and fled.

Ramses, not wanting to lose the battle, threw on his armour, jumped into his chariot and charged at the Hittite attackers. With a little help from an Egyptian relief force, Ramses II saved the Egyptians from defeat.
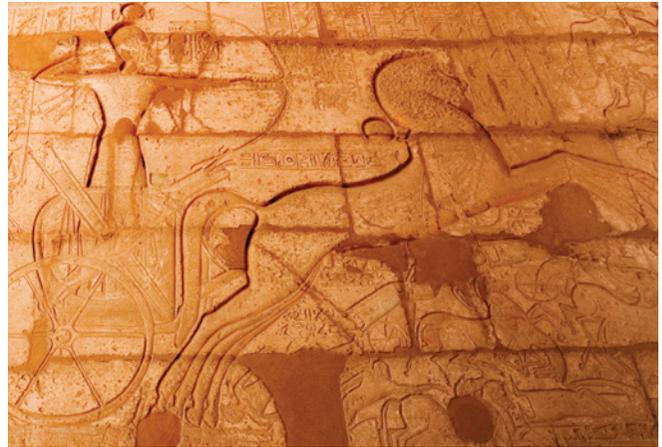
Source 9.8.2 A frieze of Ramses II in his chariot at the Battle of Kadesh, at his funerary temple in Luxor, Thebes

There was no clear winner in this battle; however, on returning to Egypt, Ramses II boasted to the Egyptian people in reliefs and inscriptions of his glorious victory (see Source 9.8.2).

Building program

In his 67-year reign, Ramses had an enormous number of building projects completed.
These included:

- the twin temples at Abu Simbel in Nubia (see Source 9.8.3)
- the Ramesseum (mortuary temple of Ramses)
- the Temple to Thoth at Memphis and restoration of the **sphinx**.
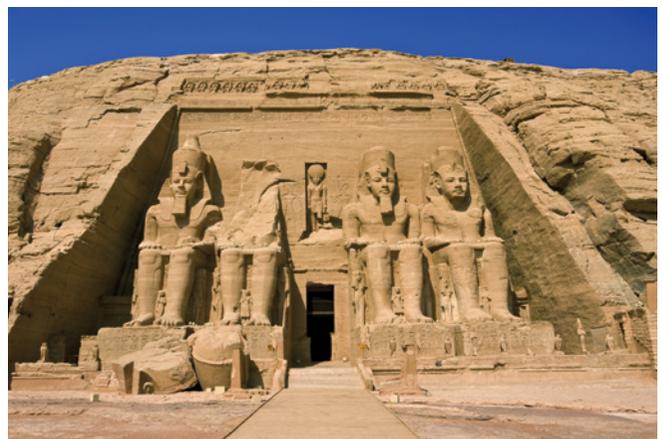
Source 9.8.3 The Great Temple at Abu Simbel

Hatshepsut

Hatshepsut ruled Egypt for 22 years, by far the longest period of rule in ancient Egypt by any female. She became a great pharaoh.

She ruled while Egypt was economically strong and peaceful. When her husband, Thutmose II, died prematurely she became regent (the person appointed to administer a country if the monarch is too young, absent or incapacitated) for her stepson, Thutmose III, who was approximately nine or ten at the time. Initially Hatshepsut was careful not to overstep her role as regent; however, within about two years of her husband's death Hatshepsut had assumed the position of pharaoh.

A female pharaoh

There were no words to define a female monarch and so Hatshepsut is frequently referred to as 'he'. Furthermore, to be accepted as a true king of Egypt Hatshepsut had to assume the symbolism of a pharaoh. Therefore, in most of her images Hatshepsut is shown wearing male regalia. For example:

- a ceremonial false beard
- nemes—folded striped head cloth
- royal crowns
- standing with left foot forward
- depicted as a sphinx (see Source 9.8.4).

Building program

Hatshepsut's projects included:

- repairs to the Temple of Thoth at Hermopolis
- repairs to the Temple of Hathor at Cusae
- the Temple at Deir el-Bahri (Hatshepsut's mortuary temple).

What happened to Hatshepsut?

Hatshepsut died in year 22 of the co-regency with Thutmose III. Her mummy has never been found and there is no evidence of an unnatural death. However, many historians have speculated that Hatshepsut was murdered on the orders of her stepson Thutmose III. This is based on the fact that after her death Hatshepsut's names, titles and images were removed from the walls of numerous temples, and many of her statues were destroyed and dumped.

It is possible that Thutmose III was responsible for the damage done to Hatshepsut's images, but it is also possible that the destruction was carried out by Akhenaten, a pharaoh who introduced worship of the sun-god called Aten at the expense of all other gods.

Source 9.8.4 Sphinx of Hatshepsut from Deir el-Bahri, Thebes. Held in the Metropolitan Museum of Art, New York

ACTIVITIES

Remembering and understanding

1 How did Ramses II boast about his victories to the Egyptian people?
2 Outline how Hatshepsut attempted to legitimise her rule as pharaoh.

Applying and analysing

3 'Ramses II was a great pharaoh'. Justify this statement with reference to the information in this unit and Sources 9.8.1, 9.8.2 and 9.8.3.

Evaluating and creating

4 With a partner, discuss what types of evidence would be required to prove that Hatshepsut was murdered.

Inquiry tasks

TV presenter

Your group of four has been selected to produce a 15-minute current affairs report on **Egyptomania**, currently taking the country by storm. Over the past year your group has discovered many examples of ancient Egyptian iconography reproduced in popular household items, modern jewellery, fashion and furniture, as well as in public buildings and monuments.

The group's task is to:

a research examples of modern Egyptomania

b link the modern examples of Egyptomania with the ancient picture/building/idea that it was based on

c use the examples of modern Egyptomania to demonstrate how the legacy of ancient Egypt lives on to the present day.

It is important to use evidence from sources to support your explanations.

The group could present the 15-minute report to the class either digitally or live. The presentation should contain supporting visual images that will make the report interesting and engaging.

Women of the ancient world

The women of the ancient world look to Egyptian women for inspiration in the campaign for equality. They are launching their own equal rights movement and are using evidence from Egyptian society to prove that women are the legal and moral equals of men.

Your task is to conduct further research into the rights and responsibilities of ancient Egyptian women. You will use your research to produce a campaign poster.

Source 9.9.1 Pyramid at Giza

Your poster must include:

a a catchy campaign title

b one sentence to describe the purpose of your campaign

c an outline of the key rights and responsibilities of ancient Egyptian women

d a statement that links the purpose of your campaign to the rights and responsibilities of ancient Egyptian women

e a persuasive comment to try to convince the viewer to agree with your campaign.

It is important to use a range of historical terms and concepts when communicating your understanding of the past.

The *Who's Who of Ancient Egypt*

You have been commissioned by the magazine *Who's Who of Ancient Egypt* to produce a two-page spread on the great pharaohs of ancient Egypt. Your task is to compile a list of the five greatest Egyptian pharaohs. For each pharaoh you will need to provide:

a a picture

b a timeline of key events in the pharaoh's life

c an outline of the pharaoh's greatest achievements

d a justification as to why this pharaoh is considered one of the five greatest of all time.

Travel brochure

Your task is to create a travel brochure for modern tourists who are planning to visit Egypt to see the artefacts and buildings left behind by the ancient Egyptians. Your brochure should include a brief introductory paragraph to capture the interest of potential tourists. You should then feature between five and ten important historical sites from Egypt. Each featured site should include:

a the name of the site

b its location

c one to two sentences describing the site

d one to two sentences explaining why tourists should visit the site.

GLOSSARY

afterlife life after death; a place where the deceased goes after death

canopic jar a covered jar used in ancient Egyptian burials to hold the internal organs of the deceased

delta an area where a river splits into separate rivers before flowing into a sea

Egyptomania a term to describe the fascination with ancient Egyptian culture and history

embalming preserving a dead body from decay; in ancient Egypt this involved using spices and salt

god a supreme being that is worshipped by people

mummification to preserve a body by drying it with salts, packing the cavities inside with spices and sawdust, and wrapping the body in linen strips

pharaoh the title used for ancient Egyptian kings

pyramid a triangular-shaped monument including a tomb for the deceased

scribe a person employed to write

society a community of people living together

sphinx a statue with a human head and a lion's body

temple a religious building where people worship their god(s)

tomb a large room, often underground, where the dead are buried

Ancient China

China, Asia's greatest civilisation, has a rich and varied history. Beginning with the establishment of the Xia **dynasty** in 2205 BC, this vast empire dominated the Asian continent for more than 4000 years.

Source 10.0.1 Painted terracotta warrior with spear, Western Han dynasty, 206 BC–9 AD, from Shanxi province, China. Currently held in the Louvre Museum, Paris

2700 BC Silk is first produced

**c. 2205–1766 BC
Xia dynasty**

**c. 1766–1122 BC
Shang dynasty**

**c. 1122–481 BC
Zhou dynasty**

551 BC Confucius is born

**c. 481–221 BC
Warring States
period**

**221–207 BC
Qin dynasty**

221 BC Qin conquer Warring States
210 BC Shi Huangdi dies
124 BC Emperor Wudi establishes the Imperial Academy
91 BC Sima Qian completes *Records of a Grand Historian*; Buddhism reaches China

**202 BC–220 AD
Han dynasty**

166 AD Roman ambassadors visit China

220 AD Han dynasty ends

Source 10.0.2
Timeline of ancient China

Geography of ancient China

Location of China

Today, China is the third largest country in the world with a land area of approximately 9.5 million square kilometres. It is located on the Asian mainland and shares borders with 14 countries, including Mongolia in the north, Kazakhstan in the west, India and Nepal in the south-west, and Burma and Vietnam in the south. The Pacific Ocean borders China on the east, the coastline stretching to about 14 500 kilometres.

The Middle Kingdom

China is surrounded by natural barriers—the Gobi Desert and vast plains of Mongolia to the north, the mountain ranges and dense jungles of South-East Asia to the south, the Pacific Ocean to the east and the Himalayan mountains to the west. These barriers isolated China from the rest of the world for a very long time.

Because of this isolation, China regarded itself as the centre of the world—the Middle Kingdom.

Nevertheless, China's borders did change in ancient times due to expansions of empires and invasions. Source 10.1.1 shows the growth of China under different rulers.

Physical features

China's physical landscape is varied. Its mountains in the north and west become smaller and gradually flatten as you travel towards the plains in the east.

China's sheer size means that the climate also varies from north to south. In the north, the climate is mild in summer and very cold in winter. The main crops grown in the north of China included millet and wheat. These crops were used to make noodles, which was the staple of the northern Chinese diet.
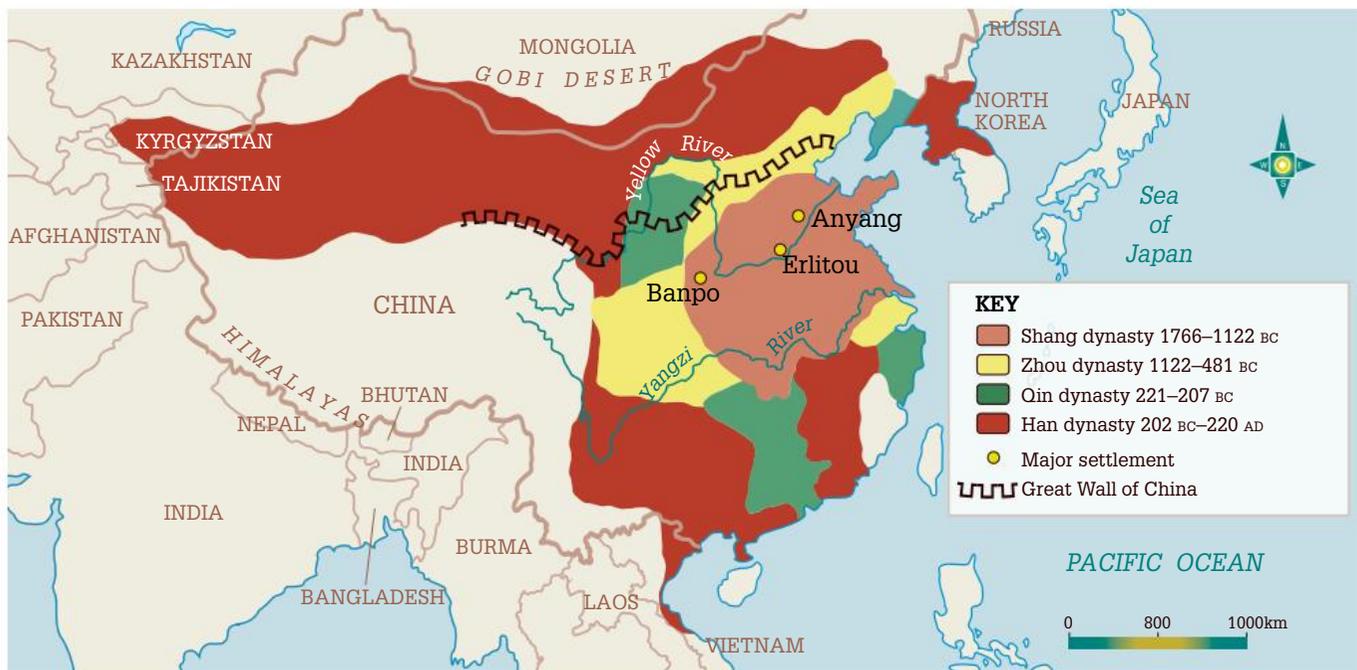
Source 10.1.1 Ancient China

In the south, due to the wetter and warmer climate, farmers grew rice. It was also in the south that the mulberry trees grew. These trees were the food source of silkworms, from which silk was made and which in turn formed a large part of ancient China's trade with the rest of the world.

Two major rivers

The rivers of China were very important for the development of the country. The two major rivers, the Yangzi and the Huang He (Yellow River), are both over 5000 kilometres long. They were the main channels of communication and transportation in ancient times. The flooding of these rivers was essential, yet at times deadly for the Chinese people who lived alongside the banks of the two rivers. Millions died when the rivers flooded, both directly from the floods and indirectly from the famines that would often follow. However, the floodwaters also left behind fertile silt which was essential in allowing the farmers to grow new crops to feed the people.

It was along these rivers that the first Chinese civilisations began. Prehistoric people were nomadic hunters and gatherers, but over time they began to settle in one place. The rivers provided the essentials for life—water and fertile soil. The Yangzi and Yellow rivers were the location of the first settlements in China.

Source 10.1.2 An example of Banpo pottery dating from around 4500 BC. Held at the British Museum, London

The settlement at Banpo, near Xi'an in the Yellow River valley, provides detailed archaeological evidence of one of these early settlements. One of the major archaeological finds at Banpo is a collection of pottery showing the skill and technology of these early Chinese people (see Source 10.1.2).

Over time these small settlements grew into towns and then important cities according to written sources from the first dynasties.

The Gobi

The Gobi Desert, in the north and north-west of China, did not have the necessary resources to support permanent settlements. This desert is one of the largest and driest in the world. The people that lived in the Gobi Desert were nomads and remained so long after settlements began elsewhere in China.

ACTIVITIES

Remembering and understanding

1 List the geographical features that form the natural borders around China.
2 Explain why the ancient Chinese people regarded themselves as living in the centre of the world.
3 a Describe how the physical landscape of China changes from west to east and north to south.
   b Outline what effect this had on the development of agriculture in the various regions of China.

Applying and analysing

4 Examine Source 10.1.1.
   a Explain why the borders of China have not remained the same throughout history.
   b Suggest a reason why the Great Wall of China does not exactly follow the borders of the country.

Evaluating and creating

5 Evaluate the importance of the two major rivers to the development of ancient Chinese civilisation.

Key groups in ancient Chinese society

Social organisation

Ancient Chinese society was strictly organised into classes. Source 10.2.1 shows how each group in society was placed during the Han dynasty (202 BC–220 AD).

Emperor

Civil servants (scholars)

Peasants

Artisans

Merchants

Slaves
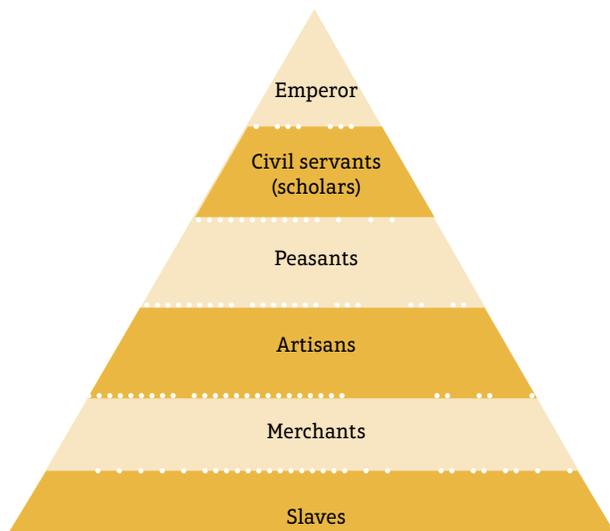
Source 10.2.1 The social structure in ancient China during the Han dynasty (202 BC–220 AD).

The emperor and the Mandate of Heaven

The emperor was the most important person in ancient Chinese society. He ruled from a variety of palaces built of stone and protected by walls and guard towers. The Chinese believed that the emperor had to be obeyed as he was chosen by Heaven to rule. This was called the **Mandate of Heaven**. To show obedience and respect, the people had to kneel and touch the ground with the head, an action known as 'kowtowing'. The emperor was also the only one allowed to wear yellow silk as this was also a sign of royalty.

It was possible for an emperor to lose the Mandate of Heaven. When there were too many natural disasters, or a series of wars that did not go well for China, rebellions would often break out. If a rebellion was successful, the Chinese believed that Heaven had given the Mandate to the new leader, but if the rebellion failed, then Heaven still supported the emperor.

The position of emperor was passed from father to son or to other male family members, creating a dynasty. Each time a new leader succeeded in overthrowing the emperor the dynasty would change. The emperor had to take part in special ceremonies and sacrifices.

Government officials

Immediately below the emperor in social importance were the government officials in the civil service—the **scholar-gentry**. They were called this because to become a government official a man had to pass very difficult examinations and so had to be highly educated. The examination system was based on the teachings of Confucius, who believed that a government needed qualified people to run it.

The Imperial Academy to train civil servants was established in 124 BC by Emperor Wudi. The examinations were open to any boy who was able to pass them. It was not unusual for a rich nobleman to sponsor (support) a poor peasant boy from his estates to enter these examinations, as it would mean prestige for the noble and for the peasant boy's family and village.

These government officials carried out the day-to-day running of the country, in much the same way as the public service operates today in Australia. The officials ensured that the emperor's laws were obeyed. They collected taxes and managed public works.

Source 10.2.2 This painting in the National Library of France shows Chinese scholars sitting the imperial civil service examination. Early 18th century

They were the emperor's main source of information about the state of the country, including such issues as civil unrest, natural disasters and the needs of the people.

Peasants

The peasant class made up 90 per cent of the ancient Chinese population. This class was the poorest of the free classes, but were highly respected because they produced all the food.

The peasants worked very hard, using only basic tools to work the land. They rarely owned the land they farmed. This meant that they had to pay rent to the landowner. This rent was usually about 30 per cent of their produce, but sometimes could be as high as 50 per cent.

In addition, they had to pay about 20 per cent to the emperor in taxes, although they were generally taxed less than the wealthier (but less highly regarded) merchant class. Nevertheless, many peasants were left with very little income to support themselves.

Peasants worked with government officials to improve farming techniques. This included setting up irrigation projects and better food storage facilities. The ancient Chinese had the best farming system in the ancient world.

Ancient Chinese peasants raised a number of different types of animals, including buffalo, goats, chickens and sheep. They also used oxen as working animals to pull their ploughs. Their main crops were barley, millet, rice and wheat.

Source 10.2.3 This painting depicts Chinese peasants growing and harvesting rice, 13th–14th century AD, Freer Gallery of Art, Washington, D.C.

The other role of peasants was to form the ranks of the infantry (foot soldiers) in the army. This was compulsory, and many peasants died in battle due to lack of training and poor armour. If they were captured by the enemy, they were either executed or sold into slavery.

Artisans

Artisans were also highly respected people in society because they made things with their hands such as pottery, porcelain products, jade carvings, jewellery, lacquer wares and a variety of goods made from a range of metals, such as bronze.

Artisans were a small group within the society as only wealthy citizens could afford to buy their goods. Popular artisans could become quite rich in this way. Artisans would train their children in their craft to ensure that their prized skills were kept within the family.

Merchants and traders

The least respected class in ancient Chinese society was the merchant and trader class.

This was because they did not produce anything with their own hands, but bought and sold the goods that were made by artisans or grown by peasants.

They could become very wealthy and lived their lives accordingly. They were the people who travelled the most and were the first to have regular contact with people outside China, along trade routes such as the Silk Road.

Different dynasties throughout China's history put restrictions on the activities of merchants, such as not allowing them to live inside the walls in the towns. Often, they were also not allowed to wear silk or ride horses, as these were signs of prestige in ancient Chinese society.

Slaves

The lowest class in ancient China consisted of the slaves. Slaves were usually prisoners of war or criminals sentenced to slavery. If the crime was serious enough, the culprit's entire family could also be enslaved.

Sometimes, if a man could not pay his taxes he would have no other choice but to sell one of his children into slavery. Although this, too, was illegal (see Source 10.2.4).

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Those who sell their children shall be punished for one year. [Those who sell] relatives of the same surname, who are their superiors or elders within the five grades of mourning, shall die. Those who sell their near relatives, or their concubines, or their sons' wives, shall be banished.

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Source 10.2.4 Extract from C. Martin Wilbur, *Slavery in China during the Former Han Dynasty, 206 BC – AD 25*, Anthropological Series, vol. 34. Field Museum of Natural History, Chicago, 1943

While the number of slaves in society varied during the rule of the different dynasties, it is known that slavery began with the Qin dynasty and was at its peak during the rule of the Han dynasty. Slaves worked in many occupations: in construction and building, as household servants and as government officials. The emperor and his court usually owned hundreds, or at times even thousands, of slaves. A large number of female slaves served in the imperial palace.

Women

Women had the same status as the rest of their family and, if married, took the status of their husbands, although women were not regarded as the equal of men in ancient Chinese society.

Very rich men would often have more than one wife. **Polygamy** (the practice of having more than one wife or husband) was a sign of wealth and common in ancient China. The First Wife was the most important wife, particularly if she had sons to inherit the wealth of the family. She was in charge of the other women and children in the household, even her husband's other wives.

Another way a woman could rise to prominence was to become a **concubine**. These women were the mistresses of wealthy men and they would share his home with his wives. They were also under the control of the First Wife.

The women in a wealthy man's home lived in their own part of the house where they were protected by eunuchs. These men were trusted and could become very powerful at court due to their position with the women.

The emperor would have a number of wives and concubines, and the power struggle between the women could be quite fierce. This was especially so among the women who had sons by the emperor, as each woman wanted their son to be the next emperor.

ACTIVITIES

Remembering and understanding

1 Outline the roles and responsibilities of the emperor.
2 Describe how a person could become a member of the scholar-gentry.
3 a What role did slavery play in ancient Chinese society?
   b What type of slavery was considered illegal?
4 Use a PMI table to interpret the role of women in ancient Chinese society.

Applying and analysing

5 Examine Source 10.2.2
   a Which figure do you think is the emperor? Explain your reasoning.
   b Select the evidence in this painting that suggests the importance of the examination system in ancient China.
   c Use a Venn diagram to compare and contrast this with the examination system in Australia today. Write one or two sentences outlining your conclusions.
6 How would a historian confirm whether the information in Sources 10.2.2 and 10.2.3 are accurate representations of these people and events?

Evaluating and creating

7 Compare the roles and social position of merchants/traders and shopkeepers in ancient China with their modern counterparts in Australia. In what ways do they differ? Use a graphic organiser of your choice to show your conclusions.

Law and religion

Three major philosophies

Law and religion were very important aspects of life in ancient Chinese society. Both these aspects were deeply influenced by three major philosophies: **Confucianism**, **Daoism** and **Legalism**. All three schools of philosophy were concerned with how to be a good person, how to create a good society and understanding humanity's place within the world.

Confucianism

One of the most famous and enduring of Chinese philosophies is Confucianism, based on the teachings of the philosopher Confucius (c. 551–479 BC). The true story of his birth and childhood is unknown as the legends surrounding his early life were written by the Han dynasty historian Sima Qian in the 2nd century BC. What is known is that by middle age Confucius had developed his philosophies and had gathered a group of disciples, or followers, to whom he taught his beliefs. Sima Qian and other sources claim that there were as many as 3000 disciples, while other sources put the number at around 70.

The teachings of Confucius included a code to guide people's behaviour towards one another. For example, to preserve harmonious relationships with family members, you must show loyalty and obedience to your elders or betters—a son must honour his father, a wife her husband, a younger brother his elder brother. Confucius believed that family relationships could be extended throughout society, so that just as a child was obedient to their father, so a Chinese citizen should be obedient to the emperor. Confucius's teachings went further to say that the emperor should care for his people in the same way that a father cares for his children.

Confucius also believed that government officials should be chosen based on each individual's merit and ability, rather than on the more traditional system of family and wealth. That is why the civil service examination system was developed in the 2nd century BC. Confucianism was the major philosophy underpinning Chinese life and government for about 2000 years, ending only in the early 20th century AD, with the collapse of the last Chinese dynasty.

Ancestor worship

An important element of Confucianism was ancestor worship. This was the belief that a person's ancestors or dead relatives were able to influence people's lives. People would often have an altar or shrine to their ancestors in their homes and would make offerings of food to these ancestor spirits.

Daoism

Another philosophical system was that of Daoism. This was based on the teachings of Laozi (c. 604–531 BC), who lived at about the same time as Confucius. He taught that living in harmony with nature was very important and would lead to happiness; this was called the Dao or 'the way'.

Source 10.3.1 A later portrait of Confucius. No paintings or sculptures of the influential philosopher survive from his lifetime.

He also taught that government interference was unnecessary when people understood the natural world.

Laozi taught that the problems of the world occurred because people had turned away from nature in search of material possessions. Although it started as a philosophy, over time Daoism developed into a religious belief system to include gods, temples and priests to teach its beliefs. Artists and writers in particular were attracted to the teachings of Daoism.

Laozi taught that the Yin and the Yang were the two sides of nature—the dark and the light (see Source 10.3.2). The idea behind this was that people needed to have balance in their lives.

Legalism

The philosophy of Legalism developed during the Warring States period (481–221 BC), which was a time of intense civil war and great uncertainty. Legalism proposed that for a society to achieve peace its government needed a clear set of rules or laws with very strict punishments for wrongdoers. The basis of this belief was that people were essentially bad—selfish, greedy and full of fear— but if they knew the consequences of their bad behaviour, they would be more inclined to do the right thing.

This belief taught people that the state was supreme rather than the individual. All people, even the emperor, had to obey the law. Only then would peace be achieved. Legalism also taught that the emperor needed to be paternalistic (treat his subjects like a father would his children), but that he should not be too kind in case he spoilt his people. These two ideas also come from Confucianism.

ACTIVITIES

Remembering and understanding

1   Outline two key teachings of each of the three major ancient Chinese philosophies: Confucianism, Daoism and Legalism.
2   Describe how Confucius believed people should relate to each other for the good of society.

Applying and analysing

3   Use your answer to Question 1 to help you compare and contrast the three philosophies in a three-circle Venn diagram.
4   Devise a T-chart to list and analyse the pros and cons of Confucianism governing China for over 2000 years.

Evaluating and creating

5   In a group of three, debate the merits of each philosophy and report the results of your discussion to the class.

Source 10.3.2 The Daoist symbol of Yin and Yang is today recognised around the world.

Everyday life

Daily life

In ancient China, the daily life of the people depended on their class and wealth. There was a great divide in the lifestyle of the peasants living on the land and that of town dwellers such as government officials.

Peasants

Peasants lived in the countryside as their occupation was growing food for the nation. Peasants made up 90 per cent of the population. The day-to-day life of peasants was very hard as it involved long hours and a great deal of manual labour.

The farming calendar

Farmers had to work year-round producing food for the empire, which followed an annual farming calendar:

- spring—preparing the soil and sowing the new crops
- summer—caring for the crops
- autumn—harvesting the crops
- winter—maintenance of tools and other farming equipment.

Source 10.4.1 A painting showing Chinese peasants threshing, winnowing and sorting rice, 13th–14th century AD. Freer Gallery of Art, Washington, D.C.

Taxes

The peasants had to pay a tax of 20 per cent to the emperor on the produce from their farms. If they did not own their land but rented it, they would also have to pay about 30 per cent of their produce to the landowner. In bad years, the emperor often increased the taxes rather than reducing them. This made life even harder for peasants.

The emperor also required all peasants to spend one month every year working on his lands. In addition, the emperor could require the peasants to work on national projects or serve in the army. In peaceful times, the peasants would work on local projects such as roads and irrigation schemes in their community.

Housing

Peasants lived in small houses made from wood or mud with straw or tiled roofs. There would be four or five people living in the house. These houses were in villages, where there was often a larger house for the landowner and maybe a temple as well. The community would work together to decide on local projects that needed to be carried out.

Food

The staple of peasant meals was rice or noodles and vegetables. While they kept some animals in the village, such as chickens and pigs, peasants rarely ate meat because they could not afford it. They might hunt for some small animals or even go fishing to add some protein to their diet. They often grew fruit trees near their homes, such as peaches or apricots, to supplement their basic diet of grains and vegetables.

Clothing

Peasants wore very simple clothing consisting of trousers made from a harsh fabric called hemp. They would also wear a tunic tied in the middle with a belt. This was the same for both men and women. They would often go barefoot or wear straw sandals.

Women and children

The children of a peasant farmer were expected to help with the work on the farms as soon as they were able. Everyone in the family worked on the farm—men, women and children. Women were also responsible for the meals and the house with the assistance of daughters and daughters-in-law.

Despite peasants paying heavy taxes, the emperor or the state did not take care of them in times of hardship. This meant that sometimes parents were forced to either sell or kill their daughters as they could not support them. Sons were safe because they could work the land for their parents and they also had a duty to support their parents when they were old. When daughters grew up, they married and left their childhood homes to live with their husband's family; however, their day-to-day life remained the same. They were no longer under the control of their father or brother, but of their husband, father-in-law and mother-in-law. In time, they would take charge of the household.

Town dwellers

The emperor, artisans, scholar-gentry, merchants and traders all lived in or very close to the towns and cities. These groups made up about 10 per cent of the total ancient Chinese population.

Not all towns or cities had a palace for the emperor, but those that did had the emperor's palace as its central point. If the emperor did not have a palace in that town, there was usually some other central building. The richer people wanted to live as close as possible to the emperor or the most important buildings in the town. The poorer people lived further away from the palace or major buildings.

Architecture

Each town was surrounded by walls to provide protection. Towns were also divided internally into sections or wards. Each ward was restricted to people of the same occupation, so all the butchers lived in one ward and all the metal workers in another.

There were often markets inside one of the gates of the town where the traders would set up their stalls and people from all classes would come to shop there.

Houses varied in size, reflecting the wealth of the owner, so the houses of wealthy people were generally larger than those of the peasants in the countryside. The richest people had homes built out of stone or wood with tiled roofs (see Sources 10.4.2 and 10.4.3). They were often built around a central courtyard.

Ancient Chinese society had many strict regulations that applied to the construction of residential houses, predominantly to distinguish between the houses of the common people and those of the wealthy officials. These regulations ranged from the layout of the house to its decorative aspect.

Source 10.4.2 Extract from C. Yanxin, *Chinese Architecture*, Cambridge University Press, Melbourne, 2011, pp. 142–3

Source 10.4.3 Ancient bridge over the river at Chapro, c. 1850

Source 10.4.4 A 12th-century copy of an original 10th-century painting by Gu Hongzhong called *Han Hsi-tsai's Night Revels*

Food

The wealthy enjoyed a more varied diet than the poor. They could afford to buy meat and would also have eaten more exotic foods such as snakes and snails.

Clothing

Clothing for the rich indicated their rank. Only the wealthy could afford to wear silk. Jewellery was also a sign of wealth and status (see Source 10.4.4).

Children

Children generally continued their parent's profession so, for example, the child of an artisan would also become an artisan. This was particularly true for the eldest son. The only exception to this was when a talented but poor boy was sponsored by a wealthy patron to be educated in order to sit the civil service examinations, or when the son of a government official was clearly not going to pass the examinations, in which case the father would try to place him in another appropriate position. Daughters, like those in the country, would be married off by their fathers in an arranged marriage and would transfer their obedience and loyalty to their new family.

ACTIVITIES

Remembering and understanding

1   Outline the work of a peasant.
2   Create a table like this one and complete the summary.

	Rich	Poor
Houses		
Food		
Clothing		

Applying and analysing

3   Refer to Source 10.4.2.
    a   What was controlled by the regulations?
    b   Why do you think the regulations existed?
    c   Evaluate the accuracy of this source. Think about whether it is a primary or secondary source to help you with your answer.
4   Examine Source 10.4.4.
    a   Describe what you can see in this painting.
    b   Explain why a historian examining this image may hypothesise that this was the home of a rich family.

Evaluating and creating

5   Evaluate the accuracy of Source 10.4.4. Think about whether it is a primary or secondary source to help you with your answer.

Warfare

War and expansion

Ancient China was a self-contained nation, its land rich in natural resources. So, lack of resources—one of the major reasons for conflict between countries—was not a trigger for war or conquest. Most conflict in ancient China was internal, between its different states. These were largely triggered by terrritorial disputes, and the expansion of one state to the disadvantage of another state.

Xia and Shang dynasties (c. 2205–1122 BC)

Under the early dynasties, the area we know today as China was much smaller. The Xia and Shang dynasties ruled only limited areas in the north of China.

Zhou dynasty (c. 1122–481 BC)

Early Zhou rulers expanded their territory south to the area around the Yangzi River. This expansion resulted in the first major movement of people from the north to the south of China.

The soldiers of the first Shang armies were peasants armed with only bronze or stone weapons and led by chariot-riding aristocrats. Over time, the Zhou dynasty introduced iron weaponry and the chariots became a reflection of the status of their owner (see Source 10.5.1).

Source 10.5.1 A bull's head decoration, inlaid with gold, for a warrior's chariot during the Warring States period. The British Museum, London

The Warring States period (c. 481–221 BC)

In the later Zhou period, the Qin started to move into the territory controlled by the Zhou. The Qin came from the north-west, while the Zhou came from further east. As the influence of the Qin began to grow, the Zhou moved further eastwards across China. When the Zhou dynasty collapsed, there was a lengthy period of dislocation for China as there was no clear ruler. This deadlock lasted for 250 years and it became known as the Warring States period (see Source 10.5.2).

Many warlords at this time did their utmost to keep out invaders by building walls to defend their territory. These walls were the beginnings of the Great Wall of China, although it was not a single wall at this stage but a series of smaller walls.

Qin (221–207 BC)

In 256 BC, a new king of the Qin arose, King Zheng, who was determined to end the wars between the states. To do this, he needed to defeat the other states convincingly. He achieved this in 221 BC and named himself Shi Huangdi. *Shi* means 'first' and *Huangdi* translates as 'sovereign emperor'.

Shi Huangdi was a ruthless ruler, but he was able to expand his control into all the areas of China (see Source 10.5.2). He used the philosophy of Legalism to keep any opposition under control. After he died, his successor only lasted three years before the Han dynasty took over.

The Great Wall of China

During the Warring States period, many warlords had built walls to help defend and control their territories. Shi Huangdi used these walls as the basis for one of his many public works projects, building the Great Wall of China. He ordered that these walls be made into one long wall that would defend his new conquest against outsiders. Shi Huangdi made his new wall taller, wider and stronger with towers built at regular intervals. The Great Wall of China is now more than 5760 kilometres in length.
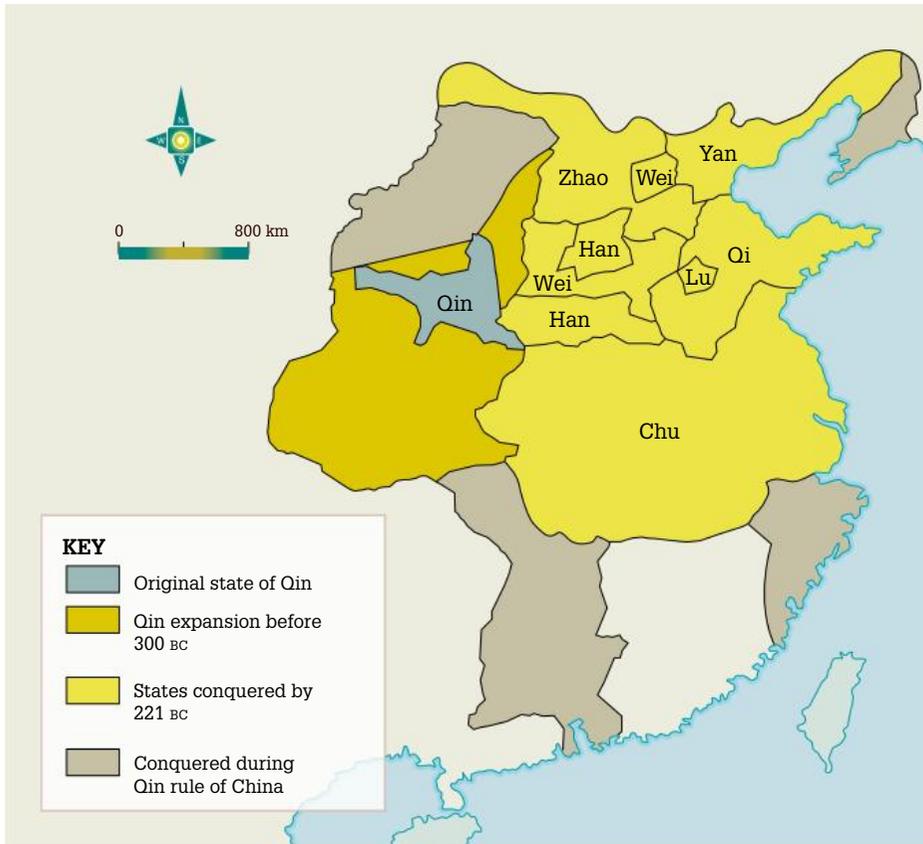
Source 10.5.2 The different states that fought each other during the Warring States period and the growth of the Qin Empire

KEY

	Original state of Qin
	Qin expansion before 300 BC
	States conquered by 221 BC
	Conquered during Qin rule of China

Han dynasty (202 BC–220 AD)

During the Han dynasty, contact with outside peoples and countries occurred for the first time on a large scale. The Han period is often seen as the most glorious in ancient China. It was during this time that China expanded, both in the north and in the west. Contact was also made with Europe and the Middle East along a newly created trading route, which became known as the Silk Road.

The great Han emperor Wu (141–87 BC) gave instructions for the military to defeat the peoples threatening China from the north. After a determined campaign, the Han were successful in 119 BC. The defeat of these nomads reduced the threats from the north-west at that time, although in later centuries there were to be many more invasions from that region with the most notable being the Mongols in the 13th century AD.

In 109 BC, Emperor Wu expanded the Han influence into the area we now call North Korea. From Korea, the Han were able to come into contact across the Sea of Japan with Japan proper. This is one of China's first contacts outside the area of modern China.

By 102 BC, most of southern China was also under Han control. This resulted in many people who were not ethnically Han being deported from China. Their lands were then given to Han people who moved into this part of the country.

Under the Han there was also a major expansion of China westwards, towards India. By the time the last of the Han emperors was overthrown, the land that we know as China was fairly well established.

Source 10.5.3 The Great Wall of China today

Ancient Chinese beliefs about warfare

Each of the three major philosophies of ancient China differed as to how they believed warfare should be approached. These three philosophies were Legalism, Daoism and Confucianism.

Legalism

The foot soldiers or infantry were usually **conscripts** or peasant farmers forced to fight by order of the king or emperor. Failure to do so would result in enslavement or execution. This fitted with the precepts, or rules, of Legalism where punishment for offences needed to be severe in order to deter others from committing the same offence.

The Mandate of Heaven

The Mandate of Heaven was believed to be given to the rightful ruler. When dynasties fell because they were defeated on the battlefield, it was believed this showed that the king or emperor had lost the Mandate of Heaven and was no longer fit to rule. This belief allowed the people to rebel against the emperor, but if they failed, the consequences were again severe, in line with the precepts of Legalism.

Two opposing belief systems

The other two major belief systems of ancient China reflected different attitudes to war:

- Daoism advocated living in harmony with nature, which conflicted with the realities of war when armies would advance across the landscape destroying farms and villages that stood in their way.
- Confucianism, on the other hand, taught obedience to the emperor, and it was therefore perfectly compatible with loyal citizens following the emperor into battle to fight for him.

Source 10.5.4 An 8th-century fresco at Mogao Caves near Dunhuang in Gansu Province showing the Han Emperor Wu worshipping statues of the Buddha

The Art of War

As warfare was a fairly constant state throughout the history of ancient China, war strategy and tactics became a topic that was thoroughly discussed and explored by both philosophers and military men of the time. In about 400 BC, military strategist Sun Tzu wrote his famous treatise *The Art of War*, which dealt with both the theory and practice of warfare (see Source 10.5.5). He believed that war was a necessary evil that should be avoided whenever possible, but if a leader must engage in warfare these key points should be considered:

- the use of deception to gain victory
- avoiding battle on the enemy's terms
- the importance of military intelligence
- the impact of the army's morale on the outcome of conflict.

1 *Generally in war the best policy is to take a state intact; to ruin it is inferior to this.*

2 *To capture the enemy's army is better than to destroy it; to take intact a battalion, a company or a five-man squad is better than to destroy them.*

3 *For to win one hundred victories in one hundred battles is not the same acme [highest point] of skill. To subdue the enemy without fighting is the acme of skill.*

Source 10.5.5 Extract from Sun Tzu's *The Art of War*, Chapter Three 'Offensive Strategy', translated by S.B. Griffith, Watkins Publishing, London, 2011, p. 115

Did you know?
The Art of War is still in print today. It is often applied to other areas of life apart from warfare.

ACTIVITIES

Remembering and understanding

1 Why would peasants have been the most obvious choice for the infantry?
2 Why did the elite warriors decorate their chariots?
3 How was China unified?
4 Explain why the discussion of military strategy and tactics became so important in ancient China.

Applying and analysing

5 Create a table with information about how warfare was influenced by each of the three major belief systems in China.
6 Examine Source 10.5.5.
   a What is this source saying about conducting a war?
   b With which of the major beliefs of the ancient Chinese does Source 10.5.5 appear to agree? Explain your answer.

Evaluating and creating

7 With a partner, discuss in what ways *The Art of War* is still relevant today.
8 Evaluate the importance of the building of the Great Wall of China to the rule of Shi Huangdi.

Death and funerary customs

Ancestor worship

Death and funerary customs in ancient China were dominated by ancestor worship. The ancient Chinese people believed that ancestors could influence the lives of their living relatives. Most houses had some form of altar at which food offerings were made, and there were customary rituals throughout the year when ancestors were acknowledged.

Funerals

Funeral services were usually held at temples or at offering halls. They were times when friends and relatives could come together and remember the deceased person.

Belief in the afterlife

Ancestor worship is closely linked with the ancient Chinese belief in an **afterlife**, where people continued to do the things they had done in this life.

The dead were therefore buried with objects that they could take with them into the afterlife and use there, such as clothing, jewellery, pottery, tools and weapons. The higher your social standing, the more elaborate these objects were. For example, a jade burial suit, such as the one shown in Source 10.6.3, was something only a very wealthy person could afford.

Tombs

In ancient China, burial tombs reflected a person's status in society. Wealthy people had large tombs, while the poor still had a burial tomb but on a smaller scale and in a separate area of town to those of the elite.

Emperors were usually buried in elaborate tombs called mausoleums. Rulers would often begin to plan and build their own **mausoleum** from the moment they came into power. These mausoleums were often very large, consisting of various chambers above and under the ground. Underground chambers usually contained the coffins. The construction of mausoleums changed over time, with early wooden structures evolving into structures built with bricks and rock.

Archaeologists have discovered various tombs from different dynastic periods, with each period showing different burial practices. Many of these discoveries involved the tombs of wealthy people.

Shang dynasty (c. 1766–1122 BC)

The tombs of the Shang dynasty show that wealthy people were buried with ritual vessels made of bronze. These vessels were the types used in ancestor worship. This has led a number of historians to speculate that the Shang people believed they would still need to worship the ancestor in the afterlife.

Zhou dynasty (c. 1122–481 BC)

Under the early Zhou rulers, bodies were also buried with bronze goods, in a similar way to the earlier Shang burial customs. This changed under the later Zhou rulers as lacquer and jade objects were added to those made from bronze. The burial of ritual vessels is also less frequent in the tombs from this period.

Source 10.6.1 The Imperial Ancestral Temple in Beijing

Qin dynasty (221–207 BC)

The Qin only ruled for 15 years, so their burial practices were hardly distinctive, yet the tomb of the first Qin emperor, Shi Huangdi, is one of the most famous in the world. Discovered by two farmers in 1974, it has since been made a World Heritage Site. Although the tomb itself has not been fully excavated, the finds around it display the great wealth buried with Shi Huangdi. Foremost are the thousands of terracotta warriors and horses—life-size replicas of his army that guard his tomb (see Sources 10.6.2 and 10.8.1).

> ### Did you know?
> Among those who were buried in Shi Huangdi's tomb were the workers who built the mausoleum. According to the ancient historian Sima Qian, the second Qin emperor did not believe that the craftsmen who had worked on the tomb should be able to reveal its secrets, so he had them buried alive.

Han dynasty (202 BC–220 AD)

Under the Han, the types of items buried with the wealthy became more elaborate. By the end of the Han period tombs were constructed with replicas of buildings and other artefacts of daily life. Buried goods still included jade and lacquer items, including the jade burial suit seen in Source 10.6.3.

Source 10.6.3 Jade burial suit of princess Tou Wan, Western Han dynasty, late 2nd century BC, from her tomb at Mancheng, Hebei province, China

Source 10.6.2 Terracotta warriors in formation displayed in a burial pit at the Terracotta Army Museum in Xi'an, China

ACTIVITIES

Remembering and understanding

1 What two belief systems governed death and burial customs in ancient China?
2 Why was it important to have items used on a daily basis buried with the deceased person?

Applying and analysing

3 With a partner compile a list of what an archaeologist might find inside a tomb apart from a coffin.

Evaluating and creating

4 How useful are the ancient Chinese tombs found by archaeologists, for historians studying this period? Explain your answer.

Significant individuals

Two important ancient Chinese people

Two of the most influential people in ancient Chinese history are the philosopher Confucius and the first Qin emperor, Shi Huangdi. The religious philosophy based on the teachings of Confucius underpinned ancient Chinese society for the next 2500 years. The first true Chinese empire, created by Qin Shi Huangdi, shaped the future of all China for over 2000 years.

Confucius

Confucius was born about 551 BC and died about 479 BC. This means that he lived during the Warring States period of Chinese history. This was a time of great discontent and instability in ancient China. Confucius was a teacher and philosopher who saw the problems in his world and developed ways for people to live a better life.

The *Analects*

The teachings of Confucius were compiled by his followers into a book called *Analects*. This book contains his discussion and thoughts on the philosophical questions that he pondered for the whole of his life, such as how a person could live a good life and how to develop a good and stable society with good government.

THE FIVE VIRTUES

Confucius's principles of good conduct were summed up by his five virtues:

- integrity—do what you promise to do and fulfil your obligations to others
- humaneness (or altruism)—do to others what you would have them do to you
- righteousness—do what is right and just
- etiquette (or propriety)—show your respect by following custom and ritual
- knowledge—find out as much as you can about the world and avoid errors due to ignorance.

Source 10.7.1 A portrait of Confucius carved on a stone stele (pillar), Shaanxi Provincial Museum, Xi'an, Tang dynasty (618–906 AD)

A model of courtly behaviour

CONTEMPORARY VIEWS OF CONFUCIUS

The *Analects* contain observations of how Confucius demonstrated his teachings in the way he lived his life (see Source 10.7.2).

A sage-king of old

By the end of the 4th century BC, Confucius was generally revered by all, with a later philosopher, Mencius, stating that, 'Ever since man came into this world, there has never been one greater than Confucius'. Later on in his writings, Mencius goes on to claim that Confucius was 'one of the great sage-kings [of old] who, … arises every five hundred years'. As stated earlier, Confucian principles came to underpin all of Chinese society for more than 2500 years.

Confucius, at home in his native village, was simple and unassuming in manner, as though he did not trust himself to speak. But when in the ancestral temple or at Court he speaks readily, though always choosing his words with due caution.

When at court conversing with the officers of a lower grade, he is friendly, though straightforward; when conversing with officers of a higher grade, he is restrained but precise. When the ruler is present he is wary, but not cramped.

When sending a messenger to enquire after someone in another country, he bows himself twice while seeing the messenger off.

Source 10.7.2 Extracts from the *Analects*, book 10

Qin Shi Huangdi

Qin Shi Huangdi was the first emperor of a unified China. He became King Zheng of the Qin as a young boy, but was able to lead the Qin to victory over the other Chinese states that had been at war with each other for many years. In 221 BC, Qin Shi Huangdi finally completed his aim and China became one nation.

As emperor, Qin Shi Huangdi was a ruthless leader who imposed his rule on his people based on the principles of Legalism. He introduced a number of reforms or changes to society to strengthen his authority and to enable him to rule his new empire more easily.

Two major reforms
STANDARDISATION
Before the Qin Empire, each state or region of ancient China spoke a different dialect (their own type of Chinese) and used a different written language. Each state also differed in other aspects. For example:

- they used their own currency or money
- they measured weights and distances in different ways
- their vehicles varied in size and roads were built to suit the width of the vehicles.

All of these differences made it very difficult for a stable economy to develop across ancient China as it was hard for merchants to trade with each other.

Qin Shi Huangdi introduced changes to standardise all these different systems (see Source 10.7.4).

Source 10.7.3 Qin Shi Huangdi (259–210 BC), first emperor of China, 18th-century illustration

Language	Changed the number of written characters to make one written language for all to use
Currency	Introduced a single currency
Weights and measures	Created a standard set of weights and measures that all must use
Transport	Set a uniform axle length (distance between wheels) for carts to improve transport on all roads
Tax	Introduced a consistent land tax system

Source 10.7.4 Standardisation reforms of Qin Shi Huangdi

THE CODE OF QIN

Qin Shi Huangdi also introduced harsh laws under his new legal system known as the 'Code of Qin'. These new laws were thorough and specified clear punishments for all sorts of crimes and those who committed them (see Source 10.7.5).

Death	Criminals accused of murder were generally executed. The Qin used different methods of execution; for example, a criminal might be tied to wagons and ripped apart. Sometimes, a criminal's punishment would extend to his entire family being executed. To add further disgrace, a criminal's corpse might be displayed in a public place.
Mutilation	Those accused of crimes such as violence or stealing were subjected to mutilation as part of their punishment. Mutilation could take different forms, depending on the severity of the crime: castration, amputation of both feet, cutting off the nose, tattooing the face and shaving of the beard (a great humiliation) are just a few examples.
Hard labour	People convicted of stealing, violence or even political opposition were often sentenced to forced labour. For example, many convicts were forced to serve four years of hard labour in building the Great Wall of China.
Flogging	Stealing and violence often attracted the additional punishment of flogging, where a convicted criminal would be beaten with a stick or whipped with bamboo strips.
Fines	Some physical punishments could be avoided by paying different amounts of money instead.

Source 10.7.5 Types of punishment under the Code of Qin

Punishment of the scholars

Qin Shi Huangdi did not allow any criticism of his rule, so from about 213 to 210 BC he set in place a policy of destroying all opposition by the scholars of the empire. Books were burnt and many scholars were executed (see Source 10.7.6). Supposedly, one extreme example is the act of burying alive 460 scholars who opposed Qin Shi Huangdi.

ACTIVITIES

Remembering and understanding

1 What are the *Analects*?
2 **a** Review the section on Confucius, including Sources 10.7.1 and 10.7.2. Compile a list of at least five adjectives to describe Confucius. Compare your list with members of your class to create a common list of five to ten adjectives to describe him.
  b Does your class list support the description of Confucius as a 'sage-king'? Explain why or why not.
3 **a** List two major reforms Qin Shi Huangdi introduced to Chinese society.
  b Relate at least two reasons for these reforms.

Applying and analysing

4 Examine the text and Sources 10.7.4 and 10.7.5 carefully. Why was it important for a unified China to have these standardisation and new criminal laws?
5 Examine Sources 10.7.5 and 10.7.6. How could these sources be used as evidence to support the idea that Qin Shi Huangdi was a tyrant? Give specific evidence from the sources to explain your answer.

Evaluating and creating

6 Considering the *Analects* were compiled by Confucius's followers, discuss with a partner their reliability as a historical source.
7 Write a report, presenting your point of view on the statement 'Qin Shi Huangdi was a great leader.'

Source 10.7.6 The painting overleaf shows Qin Shi Huangdi overseeing the burning of books and the punishment of scholars. Painting held in the National Library of France

Inquiry tasks

Research project

One of the main skills that you, as a historian, need is the ability to research or easily locate the information relevant to your field of study or topic. This research project allows you to choose a topic, and to develop some research and presentation skills as you learn about the topic. Choose *one* of the following topics and complete a research project on that topic:

- The Great Wall of China
- The terracotta army
- Emperor Wu
- The Silk Road
- Technologies of ancient China
- Three major philosophies of China: Confucianism, Daoism and Legalism
- Life in China under the Han dynasty
- Sun Tzu and *The Art of War*
- Confucius
- Qin Shi Huangdi.

Note: You may find it useful to work with a partner or in a small group.

In your project, you should complete the following tasks as appropriate:

a Identify the dates associated with the topic.

b Provide a map to show the location/s that are relevant to the topic.

c Provide some illustrations that are relevant to the topic.

Source 10.8.1 Terracotta warriors from Qin Shi Huangdi's mausoleum

d Locate at least three sources from ancient times that relate to the topic.

e Write a report on what can be learnt from the sources about the topic.

f Imagine that you were alive at the time. Write an account as if you were there and involved in events.

g Write an evaluation of the importance of your topic to the ancient Chinese world.

h Create a presentation to show what you have learnt about your chosen topic. Negotiate the format of your presentation with your teacher. Some suggestions: a slide show, a Wiki page, an AVD (annotated visual display), a 'TV' documentary of your report.

Advertising campaign

It is the year 220 BC and you are an adviser to Emperor Qin Shi Huangdi. He has asked you to prepare an advertising campaign to promote his new reforms. Your task is to prepare a slide show or AVD that outlines in detail your ideas for his advertising campaign. Ideas may include posters, flyers, slogans, buttons, a national celebration day, a festival and so on.

A Roman ambassador's story

Long before the Italian merchant Marco Polo travelled to China in the 13th century AD, it has been recorded that ambassadors from Rome travelled there in the 2nd century AD. Imagine that you are one of those Roman ambassadors who has returned home to tell his story. Write a narrative of at least 500 words, telling of your adventures in the fabled land of ancient China. You may, if you wish, illustrate your tale.

GLOSSARY

afterlife life after death; a place where the deceased goes after death

artisans workers who create goods with their hands after training in the necessary skill; for example, metalwork, making silk, ceramics

concubine a woman who was not married to the emperor but who still lived at the palace and had his children

Confucianism the philosophical teachings of Confucius, which formed the basis of the government's official examination system

conscripts men forced to serve in the army or work on some official project

Daoism the philosophical teachings of Laozi, which includes the idea that people should live in harmony with nature

dynasty a family of rulers

Legalism the philosophy that people needed a strict set of laws with clear punishments

Mandate of Heaven the belief that the emperor was chosen by Heaven to rule, but if the emperor or the dynasty was overthrown then Heaven had withdrawn that Mandate or right to rule

mausoleum a very large and elaborate tomb

polygamy having more than one wife or husband

scholar-gentry educated men in ancient China

Ancient Greece

Greek civilisation spans a period of approximately 2000 years. During its peak in the Classical period (5th century BC), the Greeks established the foundations of Western civilisation. The legacy of ancient Greece to the modern Western world is very important. Democracy, equality before the law, philosophy, science, Western medicine, theatre and athleticism all originated in ancient Greece.

Source 11.0.1 A black-figure pottery detail showing women filling amphorae at a fountain. Attic (Athenian) amphora from Vulci, Latium region, Italy

Before 2000 BC
Bronze Age

2000–1450 BC
Minoan civilisation

1600–1100 BC
Mycenaean civilisation

1100–800 BC
Dark Age

800–480 BC
Archaic period

480–338 BC
Classical period

338–146 BC
Hellenistic period

From 146 BC
Roman period

2000 BC

1500 BC — Earthquake on Thera; collapse of Minoan civilisation

1450 BC — Mycenaeans rule Crete

1240 BC — Mycenaeans conquer Troy

800 BC — Greek alphabet developed

776 BC — The first recorded Olympic Games

750 BC — Homer writes *The Illiad* and *The Odyssey*

650 BC — Reforms of Lycurgus in Sparta

594 BC — Solon reforms laws in Athens

507 BC — Cleisthenes establishes democracy in Athens
490 BC — First Persian War
480 BC — Second Persian War
464 BC — Peloponnesian War begins
462 BC — Courts established in Athens; Peloponnesian War ends

338 BC — Philip II of Macedon invades Greece

146 BC — Romans conquer Greece

Source 11.0.2 Timeline of ancient Greece

Geography of ancient Greece

Physical features

Greece is located on the south-eastern edge of Europe with Asia directly to its east and Africa to its south. Greece consists of a mainland and many islands. The mainland is surrounded by three seas: the Aegean to the east, the Ionian to the west and the Mediterranean to the south. The seas enter deep into the mainland, creating many gulfs and bays and a very long coastline. No matter where you are in Greece you are never far from the sea. An isthmus (a narrow strip of land joining two larger areas of land) in the south links the Peloponnese to the rest of Greece.

Source 11.1.1 Ancient Greece

The Greek mainland is very mountainous with little fertile land, except for the plain of Thessaly and the plain of central Macedonia. The Greeks made the most of the land they had and even terraced the hillsides to grow their major crops of grapes, olives and grains.

The Greeks were predominantly coastal people. The lack of ample farmland made them turn to the sea. Their forests provided them with timber needed to build their ships and so the Greeks became traders, trading their olives, grapes and pottery mainly for metals and grain. Sea travel was the fastest and safest form of transport in antiquity. The Greeks came to control trade across the Mediterranean and Black seas, and sailed beyond the Pillars of Hercules (the Strait of Gibraltar) into the Atlantic Ocean.

Did you know?

The Aegean Sea was named after King Aegeus of Athens, who, according to legend, threw himself into the sea when he thought his son Theseus had been killed by the Cretan Minotaur.

The formation of city-states

The landscape of Greece made communication between the different groups of Greeks very difficult. As a result for most of their history the Greeks did not develop as a single state or a unified nation. The Greek world was a collection of many separate city-states called *poleis*. Each *polis* was made up of a city and the surrounding countryside. It had its own government, currency, calendar, law system and army. The most powerful city-states were Athens, Sparta and Thebes (Source 11.1.1). Conflict between the separate city-states was not uncommon. Despite their differences, the city-states had a strong sense that they were part of a broader Greek world, which they called **Hellas** and in which they shared a common language, religion and similar customs. Non-Greeks were referred to as barbarians, which simply meant non-Greek-speaking.

Colonisation

The philosopher Socrates described the **Hellenes** (Greeks) 'like frogs around a pond'. During the Archaic period (800–480 BC), trade and the search for farming land led the Greeks to establish colonies around the Mediterranean and the Black Sea. The colonies maintained close ties with their metropolis (mother city-state), which also provided support during times of need. Southern Italy, Sicily, Corsica, the southern coast of France and the coast of Libya were dotted with Greek colonies, as were the Black Sea coasts of the Ukraine, Russia, Georgia and Turkey. Some colonies grew to become great Greek city-states in their own right and even rivalled their own metropolis. The cities of Neapolis (Naples) in Italy, Syracuse in Sicily and Massalia (Marseille) in France were all founded by Greek colonists. The Greek world in ancient times encompassed a vast area beyond the boundaries of the Greek peninsula and the surrounding islands.

ACTIVITIES

Remembering and understanding

1 What are the distinguishing features of the Greek terrain?
2 **a** Define the term polis.
   b Name five important Greek poleis.
3 Who were the Hellenes and who were the barbarians?
4 **a** Why did the Greeks form colonies?
   b Define the term 'metropolis'.
   c Name two European cities that were founded by Greeks.

Applying and analysing

5 What does Socrates mean by his analogy (comparison) 'like frogs around a pond'?

Evaluating and creating

6 Evaluate the impact the Greek landscape had on the development of ancient Greek society.

Key groups in ancient Greek society

Spartans

The Spartans considered themselves to be descendants of Heracles. They were Greeks from the north called Dorians, who in the 10th century BC settled in the southern Peloponnese around the older Achean (the name of the original inhabitants of the area) city of Sparta. The area surrounding Sparta was known as Laconia and it included the fertile valley of the Eurotas River. To the north it was protected by a tall mountain range called the Taygetus (see Source 11.2.1) and to the south it had access to the sea. With no natural harbours, the Spartans did not develop shipping or trade.

Source 11.2.1 The Taygetus mountain range surrounds Sparta and provides natural protection.

In the 8th century when most Greek city-states were establishing colonies beyond the Greek mainland, the Spartans reinforced their control over Laconia and conquered the nearby state of Messenia, enslaving the local population. In doing this, Sparta became one of the largest and most powerful city-states. This power was not only based on the rich farmland, but was mainly due to the strength of the Spartan army. In order to maintain their stronghold over the territories and peoples they occupied, the Spartans dedicated their whole lives to serving their country as soldiers. They became obsessed with matters of war and feared that the enslaved people under their rule would revolt and so they ran their country as a military state (see Source 11.2.2), ruthlessly destroying all opposition to their rule.

> *They made the proclamation to the effect that the helots should choose … those who claimed to have done the best service to Sparta on the battlefield, implying that they would be given their freedom. This was, however, a test conducted in the belief that the ones who showed most spirit and came forward to claim their freedom would be the ones likely to turn against Sparta … 2000 were selected … under the impression they were being made free … however, the Spartans did away with them and no one ever knew how each one was killed.*

Source 11.2.2 The Spartans kill 2000 helots, in *History of the Peloponnesian War* written by the Greek historian Thucydides (c. 460–c. 399 BC)

Divisions in Spartan society

Spartan society was organised into three main groups (see Source 11.2.3).

Division	Description
Spartiates	• Dorian Spartans who had full rights • All professional soldiers • Allocated a plot of Laconian land and slaves
Perioikoi	• *Perioikoi* meant 'the ones who dwell around' • Other Dorians settled in Laconia, or local Achaean populations occupied by the Dorian Spartans • Free, allowed some autonomy, but were not citizens • Involved mainly in farming and trade; some were artisans • Joined Spartan army and followed Spartiates into battle • Allowed to travel outside Sparta
Helots	• Inhabitants of Spartan conquered lands; most were Messenians (lived in a nearby region) • Slaves owned by the state • Allocated to adult Spartiates to farm their land • Required to carry their master's weapons into battle

Source 11.2.3 Organisation of Spartan society

Athenians

The city-state of Athens was made up of the city of Athens and the surrounding countryside called Attica. The Athenians were Ionian Greeks (ancient Greeks originating from the eastern part of Greece). They considered themselves to be natives of Attica and were proud that their ancestors did not mix with the Dorian Greeks. The Attic landscape was hilly and mountainous with few and small fertile valleys. The main crops grown were grapes and olives. Attica was densely populated and was required to import most of the grain needed. Mount Pentelikon provided Athens with marble, a raw material required for their public buildings, and silver was mined at Laurion. The greatest source of Athens' wealth, however, was trade. Attica had a long coastline with a number of natural harbours. The main port of Athens, Piraeus, grew into the busiest port of the Mediterranean during the Classical period.

Divisions in Athenian society

Athenian society was organised into three main groups (see Source 11.2.4).

Division	Description
Citizens	• Males born to free Athenian parents • Only allowed to marry Athenians • Had full political rights and could vote at the Assembly and hold a position in government • Could own land • Had full legal rights • Most were farmers, traders, shopkeepers or artisans • Expected to serve in the army, cavalry or navy at times of war
Metics	• Free Greek or foreign migrants • Had no political rights • Not permitted to marry Athenian citizens • Could not own land • Required to pay taxes • Protected by the law • Mainly artisans or traders • Required to serve in the Athenian army
Slaves	• Non-Greeks bought or born into slavery • The property of citizens or the state • Had no legal rights • Paid for their work; some became rich • Most worked on farms or as household slaves • Many employed by the state as police, record-keepers or in the silver mines of Athens

Source 11.2.4 Organisation of Athenian society

ACTIVITIES

Remembering and understanding

1 **a** What was a metic?
   b How were a metic's rights different from those of a citizen in Athens?

Applying and analysing

2 Compare the Spartans' treatment of the perioikoi and the helots.
3 Use a Venn diagram to compare and contrast Athens and Sparta.

Evaluating and creating

4 Evaluate the factors which led to the differences between Athens and Sparta.

Government and law

Development of different political systems

Social change over time brought about the development of different political systems in the city-states. Many states experienced a similar pattern of political change. The emergence of city-states in the early 8th century BC was closely connected to the decline of monarchies. These gave rise to aristocracies ruled by noble or wealthy landowners.

Lawgivers

In the 7th century, colonisation and trade led to the rise of a wealthy non-aristocratic class of citizens who demanded rights and a share in power. To settle the disputes between these two groups, lawgivers (powerful men who pass laws to help organise society), such as Draco and Solon in Athens (the first lawgivers), compiled law codes to redistribute power. Eventually, many aristocracies were replaced by oligarchies, whereby a small group of influential individuals held the power.

Did you know?

Draco was the first ancient Greek lawgiver but his written code of laws was so harsh that it gave rise to the word 'Draconian', which is still in use today to refer to any harsh measures taken by people in power.

Tyrants

These changes did not settle social unrest. The majority of people continued to have limited rights and little or no say in the running of their city-state. At times, ambitious individuals became tyrants as they gained the support of the lower classes and seized complete control. A tyrant in antiquity was not necessarily an oppressive ruler.

A number of tyrants, like Periander of Corinth and Peisistratos of Athens, were popular leaders who ruled with the consent of the people.

Government in Sparta

According to ancient authors, Lycurgus, a Spartan, received instructions from the **oracle** of Delphi to establish Sparta's laws in the 7th century BC. While we do not know if Lycurgus actually existed, we do know that Sparta was ruled by an oligarchy composed of ephors (leaders), elders and two kings. Citizens could attend the Assembly to vote for leaders, but could not make proposals or question the decisions of their rulers (see Source 11.3.1).

Government in Sparta	Description
Two kings	• Descendants of two royal families • Figureheads without real power • One remained in Sparta while the other led the army into battle
Gerousia (Council of Elders)	• Consisted of two kings and 28 members over the age of 60 who served for life • Organised discussions of the *Apella* • A high court for serious cases requiring death sentence or exile
Five ephors (leaders)	• Most powerful people in Sparta • Served for one year • Chosen by the *Apella* • Oversaw all legal matters, foreign policy and decisions of the *Apella* • Could overrule the kings and even punish them
Apella (Assembly of Citizens)	• Attended by Spartan citizens over the age of 30, but they could not speak • Elected members of the *Gerousia* and the ephors

Source 11.3.1 Spartan government

Government in Athens

Important political reforms were made by Solon in 594 BC. To protect the poor, he passed laws cancelling all debts and he gave all citizens the right of appeal in court.

In 507 BC another lawgiver called Cleisthenes, an aristocrat by birth, sided with the common people in their rebellion against tyranny and introduced new reforms that established democracy in Athens (see Source 11.3.2). For the first time in history every citizen was equal before the law. In order to protect citizens' rights and to encourage loyalty to the city-state over loyalty to the family or neighbourhood, Cleisthenes divided the Athenians into 10 tribes. Each tribe consisted of members from the city of Athens, the coast and rural areas.

> *Our constitution is called a democracy because power is in the hands not of a minority but of the whole people. When it is a question of settling private disputes, everyone is equal before the law; when it is a question of putting one person before another in positions of public responsibility, what counts is not membership of a particular class, but the actual ability which the man possesses. No one … is kept in political obscurity because of poverty.*

Source 11.3.2 This is how the famous Athenian politician Pericles described democracy, in Thucydides' *History of the Peloponnesian War.*

Source 11.3.3 The *kleroterion* was a device used to randomly select citizens for state positions or juries.

Source 11.3.4 shows how Athenian government was organised.

Government in Athens	Description
Ekklesia (Assembly of Athens)	• Most important political body • Included all male Athenian citizens over 18 • Directly involved in decision-making by exercising their vote • Citizens addressed the Assembly and expressed their opinion
***Boule* (Council of 500)**	• Each of the 10 tribes chose by **lot** 50 citizens over the age of 30 to serve as councillors for one year • Councillors prepared the agenda for the Assembly • Oversaw the implementation of the Assembly's decisions
10 *strategoi* (generals)	• The army was divided into 10 units extracted from 10 tribes • Each tribe elected a general every year to lead the unit • Influential political figures
Juries and law courts	• Solon established the Heliaea, the law court where citizens exercised the right of appeal • 6000 citizens selected by lot to serve as jurors • The Areopagus (court) dealt with murder and other very serious crimes

Source 11.3.4 Athenian government

ACTIVITIES

Remembering and understanding

1 Explain why the government in Sparta was an oligarchy despite having two kings.

Applying and analysing

2 Examine Sources 11.3.2 and 11.3.3. Outline the principles of democracy revealed by each source.

Evaluating and creating

3 With a partner, discuss whether you prefer Spartan or Athenian governance. Explain your decision.

Religion

Creation story

The original Greek gods represented the basic components of the universe that came into being at the time of creation: Gaia (earth), Uranus (sky), Pontus (sea), Darkness, Night, Light and Day. Eros (primordial love) represented the driving force that brought the components together, sparking life in the universe.

The Titans

The Titans, born out of the union of Gaia and Uranus, were the first **deities** to rule over the universe. Helios controlled the movements of the sun, and Selene those of the moon. Oceanus ruled over the ocean, while Atlas held the heavens and the earth on his shoulders. The Titan Prometheus created humans from clay and gave them food and fire.

Most famous among the Titans were Cronus and Rhea (see Source 11.4.1). Cronus had been warned that one day he would be overthrown by one of his children, and so he forced Rhea to hand over each of their children to him and he in turn swallowed them. When Zeus was born she hid him on the island of Crete and she presented Cronus with a rock covered in swaddling clothes to trick him. When Zeus grew up he sought out, challenged and defeated his father. Cronus was given a potion that forced him to vomit up Zeus' older brothers and sisters. Zeus and his siblings then waged a 10-year war against the Titans. They eventually won and became the rulers of the world.

Since we are three brothers born of Rhea and Cronus,
Zeus, and I, and the third is Hades, lord of the dead men.
All was divided among us three, each given his domain.
I when the lots were drew the grey sea to live in forever;
Hades drew the lot of the mists and the darkness,
and Zeus was allotted the wide sky, in the clouds and the bright air.
But earth and high Olympus are common to all three.

Source 11.4.1 The division of the world as described by Poseidon in the *Iliad*, an epic poem written by Homer in the 8th century BC

The Olympian gods

The Greeks were polytheists (believing in multiple gods). The 12 most important Greek gods lived on Mount Olympus in northern Greece. They ate ambrosia and drank nectar to sustain their immortality.

The gods judged the mortals below and were primarily concerned with the respect and honour that was due to them. The gods were anthropomorphic. This means that they were like humans, able to express emotions like love, anger and revenge. The gods often pretended to be mortals and visited the earth, where they associated with humans. They favoured certain mortals and brought misfortune on others.

Honouring the gods

Each god influenced a different aspect of daily life. This enabled the Greeks to direct their prayers to certain deities. For example, a farmer lamenting poor harvests prayed to Demeter to change his fortunes to produce a profitable yield, while a merchant planning a successful trade expedition would pray to Poseidon to grant safe passage across the sea. Source 11.4.2 outlines which god was responsible for each aspect of Greek life.

Olympian god	Domain	Symbol
Zeus	• the sky • weather • ruler of all gods	• thunderbolt • eagle • oak tree
Hera	• marriage • women, childbirth • wife of Zeus	• diadem • pomegranate • peacock
Poseidon	• the sea • earthquakes	• trident • dolphin • horse
Demeter	• farming, grain, bread	• torch • corn
Aphrodite	• love • beauty	• myrtle • dove
Hestia	• hearth • home	• hearth
Apollo	• the Sun • light • music • prophecy	• lyre • laurel wreath • bow and arrows
Ares	• war	• spear • helmet • chariot • dog • boar
Hephaestus	• fire • blacksmiths	• axe • anvil • hammer
Hermes	• trade • protector of travellers • messenger of the gods • wisdom	• winged shoes • the staff with entwined serpents
Athena	• warfare • crafts • wisdom	• olive tree • helmet • spear • owl
Artemis	• the hunt • protector of young girls • the Moon	• bow • deer

Honouring the gods in the form of religious rites played a significant role in Greek society. The Greeks performed a variety of rites to please the gods, as failure to do so could incur their wrath. These included animal sacrifices and **libations** (a drink poured as an offering to a god) of wine. Animals chosen for sacrifice needed to have a certain skin colour. There were specifications regarding how the animal was to be slaughtered, the shape of the blade that was to be used and the type of wood that was to be burnt for roasting the flesh. Libation offerings, usually of wine, had to be performed on specific days to honour the various gods. Greek ritualistic traditions for the worship of each of the gods were so complex that it was the job of officials to oversee correct religious practices.

Did you know?

Pan, who was half-goat and half-human in form, was god of the wild, shepherds and flocks. He inflicted fear in humans and animals that came across him. The word 'panic' is derived from his name.

Religious festivals

The most important activities in Greek society were centred on the gods. These included processions, athletic games and theatrical performances. Religious festivals provided a break from the daily routine. In a world where there was no such thing as the weekend, religious celebrations were important holidays. Some festivals were local in character and contributed to a sense of civic pride within the city-state. Others were panhellenic, involving all Greeks. The Greeks were a divided people but they all shared a common language, culture and religion. Participation in panhellenic religious celebrations strengthened ties between the city-states and instilled a sense of ethnic unity among their citizens.

Source 11.4.2 Ancient Greek gods
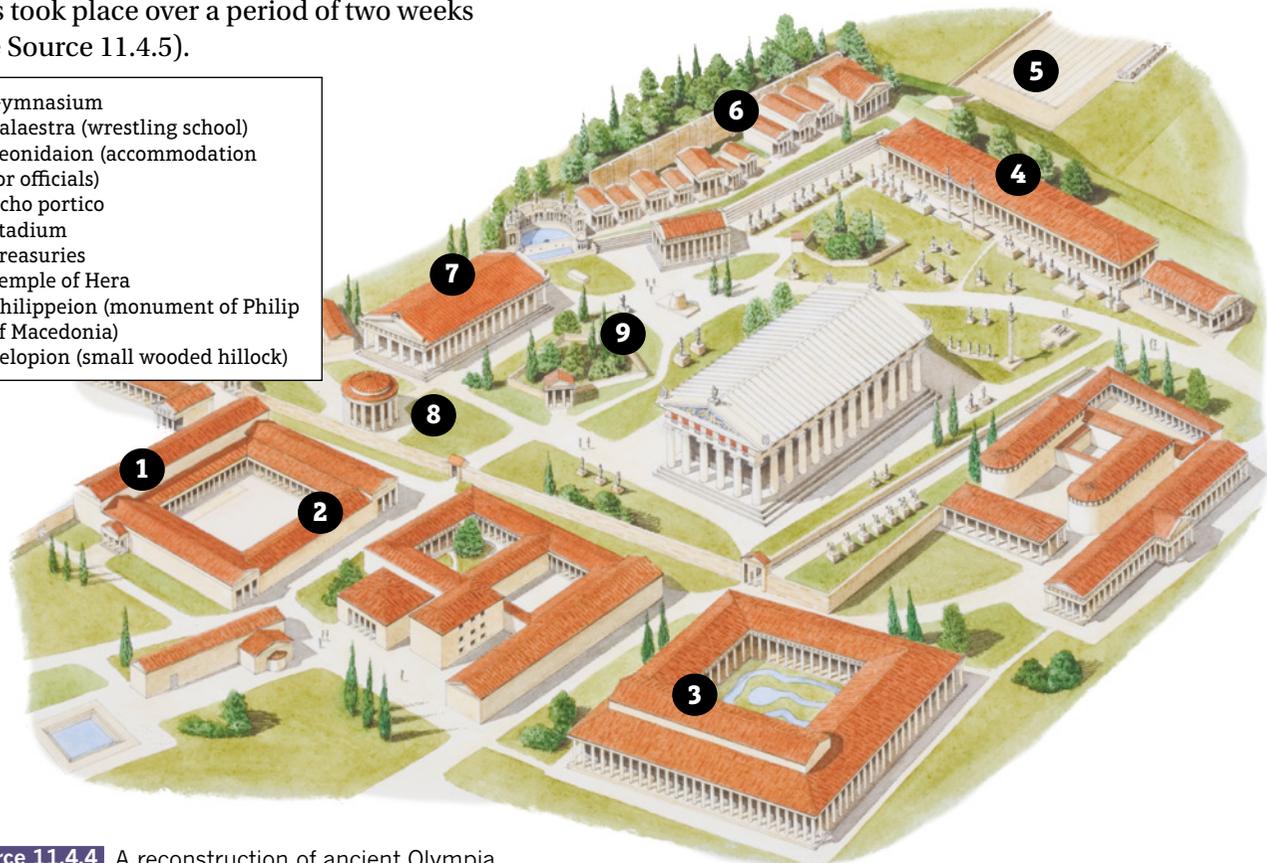
Panhellenic Athletic Games

Athletes from the Greeks city-states came together to compete to honour their gods and to bring glory to their city-state. The games were made up of four separate sporting festivals (see Source 11.4.3). They were a great cultural event, attracting poets, musicians, actors and playwrights who provided additional entertainment.

Panhellenic Athletic Games	Location	God honoured	Victor's crown
Olympic	Olympia	Zeus	olive leaves
Phythian	Delphi	Apollo	laurel leaves
Isthmian	Corinth	Poseidon	pine leaves
Nemean	Nemea	Zeus	wild celery leaves

Source 11.4.3 The Panhellenic Athletic Games

The most prestigious were the Olympic Games, which were held to honour Zeus every four years in Olympia in south-western Greece (see Source 11.4.4). The athletic contests lasted five days, but the celebrations and the religious rites took place over a period of two weeks (see Source 11.4.5).

1 Gymnasium
2 Palaestra (wrestling school)
3 Leonidaion (accommodation for officials)
4 Echo portico
5 Stadium
6 Treasuries
7 Temple of Hera
8 Philippeion (monument of Philip of Macedonia)
9 Pelopion (small wooded hillock)

A truce was called during the games and all wars were required to stop to allow athletes and spectators to come to Olympia in peace.

The main athletic events at the games included running, discus, wrestling, boxing, long jump, javelin, horse and chariot racing and pentathlon (discus, javelin, long jump, wrestling and running). Another event was the *pankration*, a cross between wrestling and boxing, in which everything was allowed except for biting and eye-gouging. Victorious athletes did not receive any medals or money. They were awarded a simple wreath at the games. With victory came great prestige, fame and honour. The winning athletes were treated as heroes in their native city-state.

Did you know?

Olympic champions were so admired that the *gloios* (a gluey mixture of sweat, oil and dirt) scraped off their bodies was believed to have medicinal qualities.

Source 11.4.4 A reconstruction of ancient Olympia
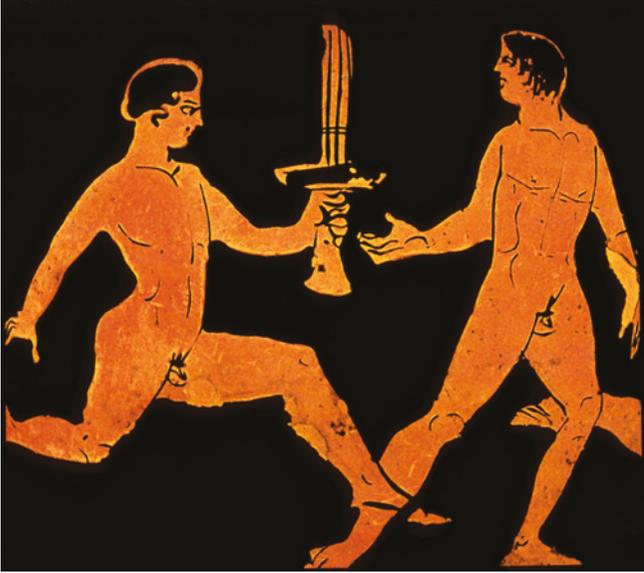
Source 11.4.5 The torch-race was not an event in the ancient Olympics. It was a purely religious ceremony that was not held in the stadium. It involved passing the sacred flame as quickly as possible in order to retain its purity. The torch-race ended at the altar of the god that was celebrated. Louvre Museum, Paris

Theatre

Drama festivals were held to honour the god Dionysus and to entertain the people. In Athens the Greater Dionysian Festival was celebrated in spring. The theatre contained an altar where offerings were made to Dionysus at the opening of each festival. A number of tragedies and comedies were performed throughout the day. These were judged and first, second and third places were awarded. A commemorative trophy for the winning play was publicly displayed on a tripod. The plots of the plays often focused on famous myths and legends and the lives of Dionysus and other gods. Since the plots were known to everyone, it was up to the skill of the playwright to intrigue and entertain the audience. The actors were always men who wore masks and costumes appropriate to their character.

Religious sanctuaries

There were a number of important sites of great religious significance throughout Greece. The most important was the oracle of Apollo at Delphi. This was the name given to the sybil or priestess, called the Pythia, through which Apollo spoke.

People went to Delphi in large numbers hoping to seek advice from the oracle. After a ritual bath and a meal of special herbs the oracle sat on a tripod over a fissure in the ground inhaling the vapours that arose. While in a trance the priestess posed the questions asked by the worshippers. Her response was believed to be the words of Apollo. The prophecy was often unclear and open to interpretation. Another important oracle in antiquity was that of Zeus in Dodona in north-western Greece. Here it was believed that Zeus communicated through the rustling of the leaves of an oak tree.

The sanctuary of Epidaurus in the Peloponnese was a famous healing centre dedicated to the god of medicine, Asclepius. The sick arrived at Epidaurus hoping to be cured. It was believed that Asclepius visited the sick and cured them during the night. Both conventional medicine and faith healing were practised at Epidaurus. Theatrical performances and athletic facilities were also available and were often prescribed for both physical and emotional healing.

ACTIVITIES

Remembering and understanding
1 Why would the Greeks have honoured the Titan Prometheus?
2 How did the Greeks show their respect for the gods?
3 Explain the importance of the Panhellenic Games.

Applying and analysing
4 Devise a family tree of the Greek gods beginning with the original Greek gods.

Evaluating and creating
5 Using the information in this unit and your own research, choose one of the gods listed in Source 11.4.2 or the Oracle of Apollo at Delphi, to create an evaluative AVD. Include a short paragraph which outlines the importance to the ancient Greeks of your chosen god or oracle.

Everyday life

Everyday life in Sparta

Spartans were forbidden from pursuing any interest other than military affairs. It is not surprising that they have left us with very few primary sources from which we can study their society. Most sources relating to Sparta are Athenian and are most likely biased.

Childhood

When a Spartan boy was born he was bathed in wine and was then presented to a council of elders who examined him to see if he was healthy. If the child was too weak or deformed he was abandoned and left to die on Mount Taygetus. When he turned seven, the boy left his home and family to be educated by the state. There was no other option for Spartan boys but to be trained as soldiers to serve their state.

Boys lived in barracks in groups called 'packs'. They were trained to endure harsh conditions and to be obedient. They went barefoot; their hair was cut short and they were given little to wear and little to eat. They were also encouraged to steal but were severely punished if they were caught.

Boys received a basic education and were taught to read and write. They were also trained in music and dance. Love of country, respect for the laws and elders, admiration of bravery and disregard for death were important values that were instilled in them.

Adulthood

From the age of 20 Spartan men became full-time warriors ready to fight for Sparta when called to duty. They kept their hair long and grew a beard but no moustache (see Source 11.5.1). They ate in the mess hall, called the *syssition,* and continued to live in barracks even if they were married.

At age 30 they were granted full political rights and allocated land for farming by the state. A part of their produce was used to supply the common *syssition*. From this age they could spend the nights at home with their families.

The Spartans served their state up to the age of 60. They led a life of vigorous training and discipline and were always ready to take up arms should there be an external attack or an uprising of the helots. The Spartans had so much confidence in their army that their city was not protected by walls. Spartan soldiers wore red in battle in order not to be deterred by bloodstains. There was no room for cowardice on the battlefield. Spartans who dropped their weapons and ran away during battle were not welcomed back to Sparta and the dishonour of such an act was considered worse than death.

Source 11.5.1 A bronze statuette of a Spartan warrior, about 6th century BC

Love of wealth and all luxuries was considered dishonourable. All property belonged to the state and the Spartan currency, made of iron, was heavy to carry and had little value. There was no reason for Spartans to accumulate wealth. Spartans were also forbidden to travel outside Sparta and foreigners could only visit Sparta for short periods. This was done to ensure that Spartans were not corrupted by others.

Did you know?

The Spartan staple food was a black soup made out of salt, blood and vinegar. A Sybarite (native of Sybaris, an ancient Greek city in southern Italy) visiting Sparta remarked after eating in the communal mess hall: 'Now I know why Spartans do not fear death.'

Women

Unlike other Greek women, Spartan women led active and independent lives. From the age of seven they received a basic education in reading, writing, music and dance (see Source 11.5.2). They were trained to be physically healthy and strong. A woman's primary role was to produce healthy soldiers for Sparta. At the age of 18 they were married but did not live with their husbands until the men turned 30.

Since helot women did all the housework and the men were always away, Spartan women looked after the finances and supervised work in the house and on the farm. They were much more independent than other Greek women and were quite outspoken and were even allowed to dance and sing in front of men. Like men, their duty to Sparta came first. Spartan mothers were known to send their sons into battle telling them, 'Come back with your shield or on it.' Women, especially those who were mothers, were highly respected in Sparta.

Everyday life in Athens

Childhood

In wealthy families, children up to the age of seven were looked after at home by their mothers or nurses. Like children today they played with toys and games with other children. Archaeologists have

Source 11.5.2 A bronze figurine of a Spartan girl dancing, about 6th century BC, British Museum, London

found a number of toys, including rattles, dolls, toy soldiers and animals on wheels. Written sources also indicate that children were brought up listening to the legends of heroes and Aesop's fables.

BOYHOOD

From the age of seven, boys and girls were treated differently. Boys went to school escorted by their *paidagogos* (slave tutor), who carried their books, kept them focused in class and assisted them with their work. Schools were privately run and boys were taught reading, writing and arithmetic. They were taught to play a musical instrument such as the **lyre** (a stringed instrument) or the **aulos** (an ancient Greek wind instrument) (see Source 11.5.3 for images of the lyre). Boys also attended the *palaestra* where they exercised and trained in wrestling and other sports.

Source 11.5.3 An ancient Greek drinking cup from about the 5th century BC showing classroom scenes including a music lesson on the lyre, a student reciting poetry and a slave tutor waiting

Boys from less affluent families finished their education at 14 and then accompanied their fathers to work. Wealthier families had their sons continue their education up to the age of 18. They became pupils of one of the many **sophists** (professional teachers and intellectuals) in Athens and, among other things, they were trained in public speaking. Between the ages of 18 and 20, young Athenians received military training.

THE LIVES OF GIRLS

Girls did not go to school, but many were taught to read and write at home. They were brought up by their mothers and they were taught all the household duties, which included cleaning, cooking, spinning and weaving. Their education involved preparing them for their later roles as wives and mothers.

Adulthood

Athenian males became citizens at the age of 20. They were required to attend the Assembly of Athens for 40 days each year where they exercised their right to vote on state matters. At some time in their adult lives they were also called to serve in government. They considered it a great honour to be a citizen and to be directly involved in the running of their state.

THE AGORA AND THE GYMNASIA

Citizens spent much of their time discussing politics in the **agora**, which was the city's great open space where all the state offices, religious buildings and shops were located. Here they met their friends, discussed the latest news or developments and listened to the politicians or to the many philosophers of Athens. The experience of the agora was an education in itself. Wealthier citizens could also attend the city's **gymnasia** where they could exercise their bodies and their minds. In the gymnasia they mixed with other citizens, including influential politicians and philosophers.

FESTIVALS

A number of religious festivals were held in Athens throughout the year. They provided colour, spectacle and a break from routine. These included theatrical performances at the Dionysian festival and the athletic competitions of the Panathenaic Games.

MEN AT HOME

At home the formal reception room was reserved for men and was called the *andron*. Here the men entertained their male friends at drinking parties called *symposia* (see Source 11.5.4).
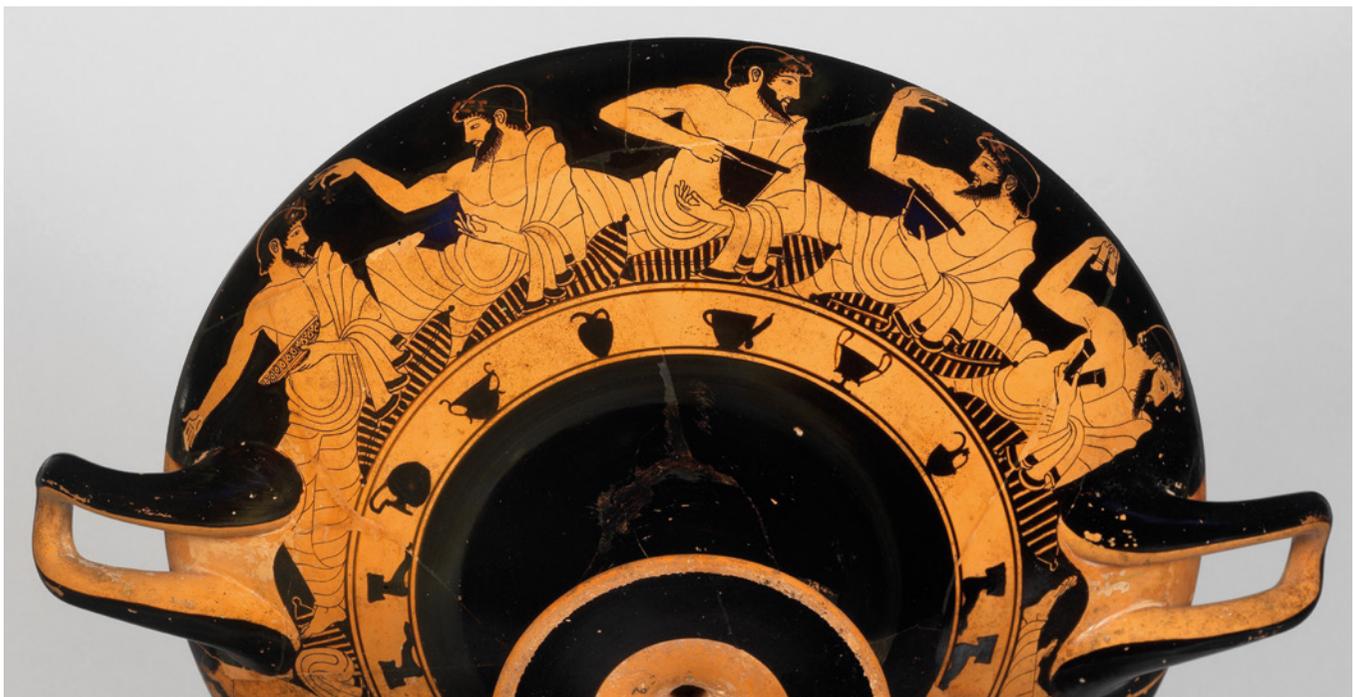
Source 11.5.4 An earthenware drinking cup decorated with a scene from a symposium, about 500 BC. Held in the Berlin State Museum

The men lay on couches, banqueted and drank diluted or watered-down wine. It was considered uncivilised to drink undiluted wine as clarity of mind was necessary for the discussions that followed.

Women

Women in Athens had no political rights, did not own property and could not inherit money. They were usually married at the age of 14 to much older men. Their husbands were chosen by their fathers, who also provided a dowry (property or money brought by the bride to her husband on marriage) to the groom. Upon marriage, women exchanged the authority of their fathers for that of their husbands.

WOMEN AT HOME

Women were confined to the home. They looked after the children and did the housework. If they were wealthy they supervised the slaves who undertook all household duties. A special area in the upper floor of the house, known as the *gynaikon*, was reserved for women and children when male visitors came. Women rarely left the house and when they did they were escorted, usually to fetch water from public fountains (see Source 11.5.5), participate in certain religious festivals or visit the tombs of loved ones. The only women who could attend the symposia were *hetairai* (courtesans), who provided entertainment for the men.

Source 11.5.5 A black figure hydria (water vessel) depicting women water carriers, about 6th century BC. Held in the National Etruscan Museum, Rome

Man is by nature superior to the female and so the man should rule and the woman should be ruled. (Aristotle, 384–322 BC, philosopher)

We keep hetairai for the sake of pleasure, female slaves for our daily care and wives to give us legitimate children and to be the guardians of our households. (Demosthenes, 384–322 BC, orator or public speaker)

A woman who travels outside her house should be old enough that people ask whose mother she is, not whose wife she is. (Hypereides, 389–322 BC, orator and speech writer)

A woman's reputation is highest when men say little about her, whether it be good or evil. (Pericles, 495–429 BC, statesman)

Source 11.5.6 Some thoughts on women given by men in Athens

ACTIVITIES

Remembering and understanding

1 How did the state prevent the Spartans from becoming corrupt?
2 What was the prime role of women in Sparta and how did this affect their lives?
3 Describe the life of an Athenian citizen.
4 What was a symposium?

Applying and analysing

5 Construct a Venn diagram and compare the similarities and differences in the childhood of Spartan and Athenian boys.
6 Explain the statement: 'The experience of the agora was an education in itself.'
7 Read Source 11.5.6. What does each of the statements tell us about the attitude towards women in Athens?

Evaluating and creating

8 Imagine you lived in ancient Greece. Who would you rather be? An Athenian or a Spartan? A man or a woman? Explain your answer.

Warfare

A divided land

The ancient Greek world was a divided one, where resources and good land were rare. War was a fact of life and city-states would often settle their differences on the battlefield. Some wars were isolated and fought over local territorial disputes. In the case of the Peloponnesian War, however, rivalry between Athens and Sparta plunged the entire Greek world into a gruesome war that lasted 27 years and divided the city-states into cultural and political allegiances. In spite of these divisions within the Greek world, there were occasions in which the Greeks united against their common foreign enemy: the Persians.

The Greek army

In the Mycenaean period (1600–1100 BC), warfare tactics differed significantly from those of the later periods. The famous epic poet Homer, in his work the *Iliad*, portrays a military ideology based on the heroic actions of individual warriors who were mostly members of an aristocratic ruling class. In the Trojan War, warriors fought for individual honour and glory in an attempt to be immortalised as heroes. By the 7th century BC, however, this notion of personal glory had been replaced by a sense of civic duty and pride. Soldiers fought for the power and prestige of their city-state rather than their own personal fame. This change in approach to warfare is evident in the military tactics of the time. While Homer describes the gruesome hand-to-hand duels between individual champions, like the epic contest between Achilles and Hector, in the Classical period strength in numbers and the organised discipline of the military unit were valued over the individual heroism of Homeric warfare.

The hoplite

At the core of the Greek army was the foot soldier called the hoplite (from the Greek word *hoplon* meaning shield). Hoplites were protected by heavy bronze armour, which consisted of a helmet, cuirass to protect the upper body, greaves to protect the legs and a large circular shield. They fought with long iron-tipped spears and swords (see Source 11.6.1). Hoplites were citizens of average wealth and responsible for the purchase of their own armour. They received military training when they reached adulthood and they were always prepared to take up arms whenever their city-state called them to duty. Poorer citizens who could not afford the armour served as archers, lightly-armed soldiers and peltasts (javelin throwers), and supported the hoplite units in battle. During peacetime, soldiers would go on with their normal lives practising their chosen professions. Only Sparta maintained a professional army at all times.

Source 11.6.1 Two hoplites prepare for battle, Staatliche Antikensammlungen (State Collections of Antiques), Munich

Source 11.6.2 The phalanx formation

Source 11.6.3 Illustration of an Athenian trireme, by Stefano Bianchetti, 1883
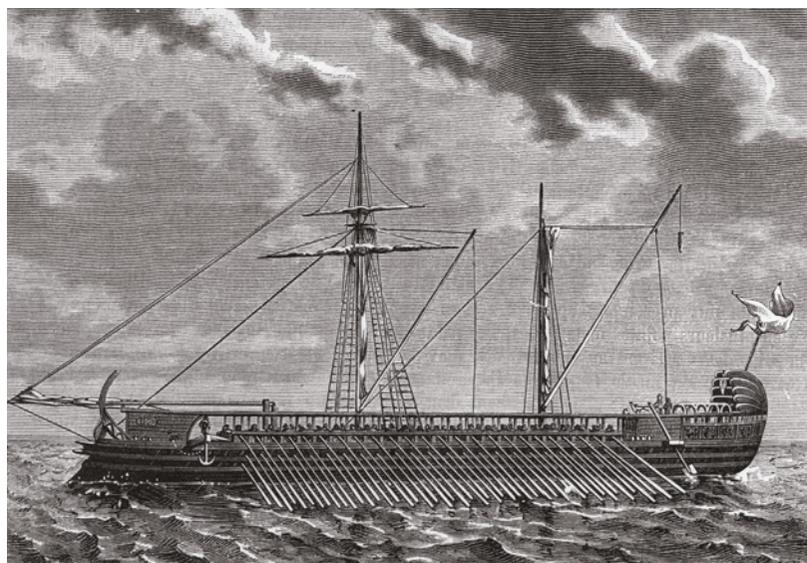
The phalanx

The hoplites marched into battle in a military formation called the phalanx (Source 11.6.2). They would line up closely together, usually eight men deep, with overlapping shields. The left part of each hoplite's shield protected the right side of the hoplite to his left. The phalanx advanced like a wall of shields with spears protruding from between the shields. Those in the first rows could stab the enemy while those in the rows behind would press forwards ensuring that the phalanx kept together. It was a great honour for hoplites to be placed in the front row next to their officers.

Sea battles

The Greeks were mainly a coastal people. In order to protect themselves from possible outside threats, Greek city-states were required to maintain a fleet of warships. At the height of Athenian power, Athens laid claim to the largest fleet in the Greek world. More than 20 000 citizens served in the fleet. Sailors were usually poor citizens who could not afford the armour required to be a hoplite.

Most of these men were also great supporters of democracy, so the strength of the fleet came to represent the strength of democracy.

The fastest warship during the Classical period was the trireme (Source 11.6.3). It had 170 oarsmen—85 on each side. The oars were arranged in three rows.

Triremes also had one or two masts with sails. During battle the sails were taken down and the oarsmen used their strength to power the ship. Triremes were fitted with heavy bronze prows, which were used to ram holes in enemy ships. Hoplites from the upper decks of triremes would fight to protect their ships or board the enemy ships.

ACTIVITIES

Remembering and understanding

1 Recall the reasons why the ancient Greeks engaged in warfare.
2 Describe the armour of a hoplite.
3 What was the phalanx and how did it operate in battle?

Applying and analysing

4 Explain the connection between naval strength and democracy in Athens.
5 Compare and contrast the change in the perception of the warrior from the Mycenaean to the Classical period.
6 Explain why the trireme is considered a great military innovation.

Evaluating and creating

7 With a partner, evaluate the statement 'It is better to fight for individual honour and glory than for civic duty and pride.' Explain your reasoning.

Ancient Greece at war
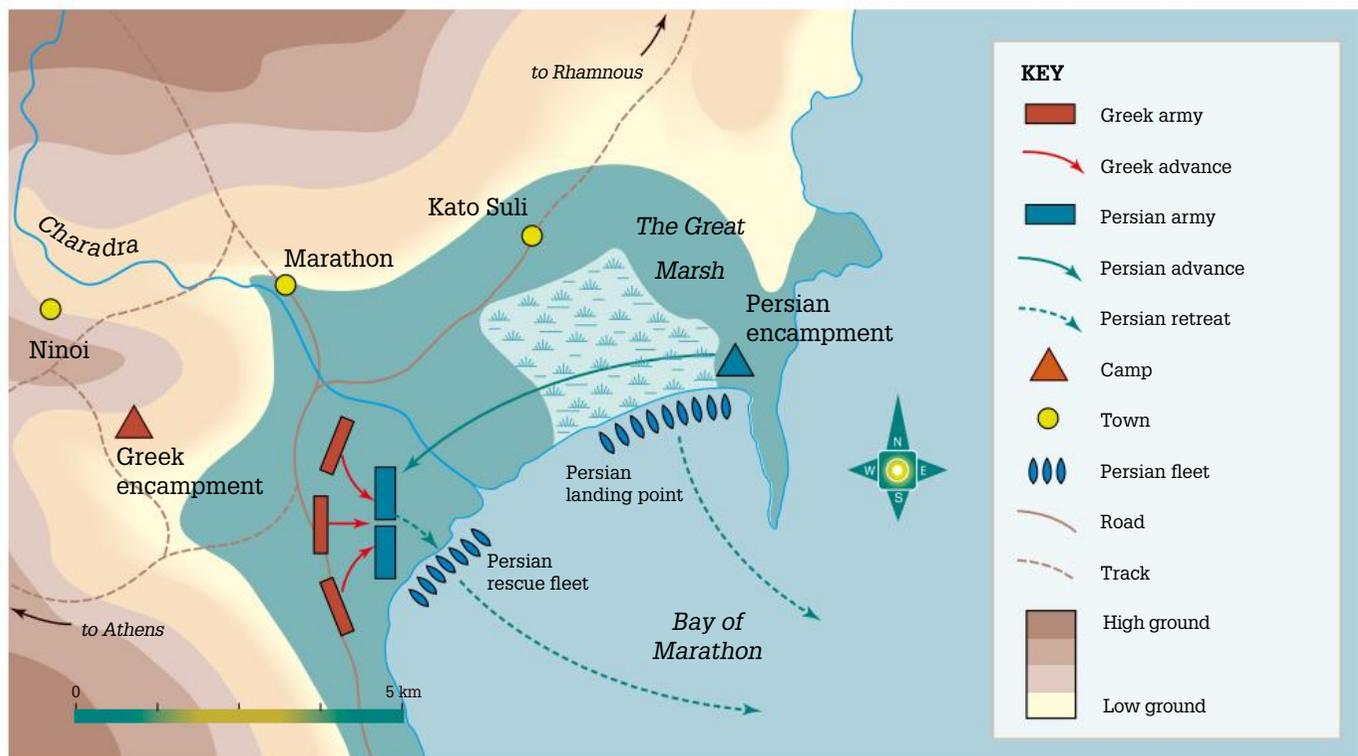
The Persian Wars

Origins of the conflict

In the second half of the 6th century BC, Persia's expansion towards the west brought the Persians into contact with the Greek colonies on the Asia Minor coast. The Persians, under King Darius, controlled a vast empire extending from India to the Asia Minor coast.

In 499 BC the Ionians rebelled against the Persians and asked the mainland Greeks for assistance. Athens and Eretria, which shared a common ancestry with the Ionian Greeks, agreed to help with a small expedition of ships. While the Persians eventually crushed the Ionian revolt, Darius never forgot Athens' role within it. He had a servant repeat to him every day 'Remember, master, the Athenians'.

In 492 BC Darius sent the commander Mardonius across the Hellespont from Asia into Europe. He managed to subdue the Greeks of Thrace and Macedonia, but his expedition was aborted when his fleet was shipwrecked near the Athos peninsula in northern Greece.

The Battle of Marathon

In 490 BC Darius sent a second expedition across the Aegean Sea. On their way to Athens the Persians sacked and destroyed Eretria and then landed on the Athenian coast at Marathon (see Source 11.7.1). The Athenians sent runner Pheidippides to Sparta to seek help. He ran 246 kilometres over mountainous terrain in only two days. The Spartans replied that they would send an army at the end of their religious festival.

Source 11.7.1 The battle of Marathon

Without Spartan assistance, the 10 000 Athenians and 1000 Plataeans were outnumbered by the Persians on the plain of Marathon. The Athenian general Miltiades stretched his forces to tackle the Persians by strengthening the wings (the battalions of soldiers at each side of the central force) of his army. As the Persians broke through the weak Athenian centre, the wings of the Athenian forces surrounded the Persians and attacked. This tactic led the Greeks into a decisive victory. Only 192 Athenians died, while the Persians suffered a loss of almost 6000 men. The remaining Persian forces retreated with their ships and sailed for Athens. In response, the Athenians marched to Athens and arrived there before the Persians. Not wanting another confrontation, the Persians sailed back to Asia.

The Battle of Thermopylae

King Darius died in 486 BC and was succeeded by his son Xerxes, who did not forget his father's plans to punish the Greeks. In 480 BC Xerxes himself led a vast force of over 200 000 men and 1000 ships across the Hellespont into Europe. The army was so large that it was described as 'drinking rivers dry' as it passed across northern Greece and headed south into central Greece. There was no resistance on the way as the city-states were overwhelmed by its size. The Persian threat forced the Greeks to unite.

The Greeks appointed the king of Sparta, Leonidas (see Source 11.7.2), to lead a force of 7000 soldiers and defend the pass of Thermopylae, a narrow stretch of land between the mountains and the sea. A combined Greek fleet of less than 300 ships arrived at Artemision in an attempt to prevent the passage of the Persian ships further south.

THE 300 SPARTANS

At Thermopylae, Xerxes was unable to use all of his army due to the narrowness of the space between the mountains and the sea. This allowed the Greeks to hold back smaller groups of Persians for several days.

A Greek traitor, Ephialtes, informed Xerxes of a path through the mountains that led behind the Greek lines. The Persians followed the path and surrounded the Greeks. Knowing that defeat was inevitable, Leonidas ordered the Greek army to retreat. He, along with 300 Spartans and 700 soldiers from the nearby town of Thespiae, refused to surrender and sacrificed their lives to allow the other Greeks to withdraw safely. On the same day, the Persian and Greek fleets met in an indecisive battle with losses on both sides. On hearing that the Greek army had withdrawn, the Greek fleet retreated south to the island of Salamis.

The Battle of Salamis

When the Persian army arrived in Athens they found a deserted city. On the advice of the Athenian general Themistocles, the Athenians had evacuated their city to prepare to fight the Persians at sea in the narrow straits between the island of Salamis and Athens.

As at Thermopylae, the Greeks were greatly outnumbered. Themistocles sent a message to Xerxes. Pretending to betray the Greeks, he urged him to strike at once as the Greeks were squabbling and were

Source 11.7.2 A rare Spartan sculpture believed to be King Leonidas, Archaeological Museum, Sparta

about to retreat. Xerxes fell for the trap and ordered the attack. When the Persian ships entered the straits, the Greeks waited in formation. The bulky Persian warships were no match for the faster, more compact Greek triremes, which were easily manoeuvred in the narrow straits, allowing them to attack and sink enemy ships. The Battle of Salamis was a tremendous victory for the Greeks and especially for Athenians who provided most of the ships.

• ....

There is not so much gold in the world nor land so fair that we would take it for pay to join the common enemy (the Persians) and bring Greece into subjection. There are many compelling reasons against our doing so … the first and greatest is the burning of our temples and images of our gods—now ashes and rubble. It is our bounded duty to avenge this desecration … not to clasp the hand that wrought it. Again, there is the Greek nation— the community of blood and language, temples and ritual, and our common customs; if Athens were to betray all this, it would not be well done. We would have you know that so long as a single Athenian remains alive we will make no peace with Xerxes.

• ....

Source 11.7.3 Extract from *The Histories* by Herodotus (c. 490–c. 425 BC)

Final victories

Xerxes abandoned Greece in humiliation. The Persian fleet was defeated, but the army was intact. Xerxes left Mardonius in charge of the army. In 479 BC a combined Greek army of 35 000 men, led by the Spartan general Pausanias, defeated the Persian army at Plataea west of Athens. On the same day, the Greek fleet defeated the Persian fleet at Mycale off the Asia Minor coast. These victories marked the end of the Persian threat.

The Peloponnesian War

Reasons for the war

The Peloponnesian War took place between Greek city-states. The two opponents were Athens and her allies and Sparta and her allies. In 445 BC Athens

and Sparta signed a peace treaty; however, unity in the Greek world did not last very long as old divisions and suspicions surfaced again. The Greek world was deeply divided between two factions: Athens and her allies (the Delian **League**) and Sparta and her allies (the Peloponnesian League). The factors that led to this division were:

- the tribal differences between Athens and her allies, who were mainly Ionian Greeks, and Sparta and her allies, who were mainly Dorian Greeks
- political differences—Athens was a democracy and supported democratic parties throughout the Greek world while Sparta supported oligarchies
- the competition between Athens and Sparta to dominate the affairs of the Greek world
- the competition to control the western trading routes between Sparta's ally Corinth and Athens.

The conflict

The Peloponnesian War lasted almost 27 years. The Athenians evacuated the countryside and locked themselves within their city walls. Their strength lay in their fleet. As long as they controlled the seas the city had a secure source of provisions. The Spartans had the superior land force. They led a combined Peloponnesian army into Athenian territory. Historians divide the Peloponnesian War into three phases (see Source 11.7.4).

The defeat of Athens

After the devastating defeat of the Athenian fleet, Lysander sailed to Athens and blockaded the city.

Without her fleet, Athens had no access to any supplies and was forced to surrender. Sparta's allies demanded that Athens be destroyed, but the Spartans decided against this out of respect for the crucial role that Athens had played in the Greek victory over Persia. Sparta instead imposed the following conditions. Athens was to:

- dismantle the city walls
- limit her fleet to only 12 ships
- allow the return of the exiled Athenian supporters of oligarchy
- share the same enemies and friends with Sparta and follow Sparta into battle.

Phases	Major events
Archidamian War 431–421 BC	• Between spring and autumn each year the Spartans, led by King Archidamus, invaded Attica and devastated the countryside. The Athenians boarded their ships and sailed to the Peloponnese and plundered the coastline. • In 430 the plague struck Athens, killing thousands including Pericles. • In 421 the Peace of Nicias was signed between Athens and Sparta. Each side returned what they had gained in the war.
Sicilian Expedition 415–413 BC	• In an attempt to extend their influence in Sicily, the Athenians sent a large military expedition to capture the city-state of Syracuse, an ally of Sparta. The Athenians suffered a crushing defeat.
Deceleian/Ionian War 413–404 BC	• The Spartans tightened their stronghold on Athens by fortifying Deceleia near Athens. The Athenians were now locked within their walls all year round. • The Spartans sought financial assistance from the Persians. They wanted to build a fleet to match that of Athens. • In 405 the Spartan fleet under Lysander surprised and defeated the Athenian fleet at Aigospotamoi. • In 404 Athens surrendered to the Spartans.

Source 11.7.4 The three phases of the Peloponnesian War

Aftermath

The Peloponnesian War was a devastating civil war that lasted approximately 27 years and involved nearly all of the Greek world. Thousands of Greeks died in battle and thousands of civilians were killed or sold into slavery. Many cities were deserted. Vast areas of farmland were abandoned. Trade almost came to a halt and the economies of the Greek city-states were gravely affected.

• ....

The Peloponnesian War … throughout its course brought unprecedented suffering for Hellas. Never before had so many cities been captured and then devastated, whether by foreign armies or by the Hellenic powers themselves; never had there been so many exiles; never such loss of life—both in the actual warfare and in internal revolutions … and there was the plague which did more harm and destroyed more lives …

All these calamities fell together upon the Hellenes after the outbreak of war … What made war inevitable was the growth of Athenian power and the fear which this caused in Sparta.

• ....

Source 11.7.5 The historian Thucydides (c. 460–c. 395 BC) comments on the importance of the Peloponnesian War in his *History of the Peloponnesian War*

ACTIVITIES

Remembering and understanding

1 a Why did the Persians come into contact with the Greeks?
  b Why was Darius angry with the Athenians?
2 Describe Miltiades' military plan that led to Athenian success at Marathon.
3 What was Themistocles' role in the Battle of Salamis?

Applying and analysing

4 What does Herodotus tell us in Source 11.7.3 about the Greek world and the concept of 'Hellenicity' or 'Greekness'?
5 Rank the reasons that led to the Peloponnesian War from the most to the least significant. Explain your choices.
6 Explain why each condition of surrender was imposed on Athens by Sparta.

Evaluating and creating

7 Was the death of Leonidas and his men at Thermopylae futile? Discuss.
8 a Refer to Source 11.7.5 and list the reasons given by Thucydides to support his claim that the Peloponnesian War was the greatest war of his time.
  b Do you agree with Thucydides that the Peloponnesian War was greater in significance than the Persian Wars?

Death and funerary customs

The afterlife

The ancient Greeks believed that the soul of the dead continued to exist in an afterlife in an enclosed area beneath the earth, called the Underworld. Lord of the Underworld was Pluto or Hades, who ruled over the dead with his wife Persephone (see Source 11.8.1). The name Hades was used as an alternative name for both god and Underworld.

When the soul left the body of the deceased it was escorted by the god Hermes to the river Styx, which encircled the Underworld. There, Charon the ferryman carried the soul across the river in his boat. The passage of the soul was prepaid by relatives who placed a coin in or on the mouth of the deceased. The gates to the Underworld were guarded by the three-headed dog Cerberus who ensured that the living did not enter.

Source 11.8.1 A red figure vase depicting the Underworld, with Hades and Persephone in the centre and Cerberus, the three-headed dog, in the foreground

Judging the soul

Each soul was judged by three judges in the Underworld. Rhadamanthus judged the souls of Asians and Aeacus those of Europeans, while Minos, who presided over both, dealt with disputed cases. If a soul was judged to be evil it was sent to the depths of the Underworld, to a place called Tartarus. There the souls received punishment for their wrongdoings. A pious and virtuous soul was sent to the Elysian Fields, a place of light, warmth, happiness, games and music.

Funerary customs

Honouring the dead and providing an appropriate burial was considered an important duty and responsibility of the relatives of the deceased.

Both full burial of the corpse and cremation were practised in Greece between the 8th and 4th centuries BC. The choice between the two varied over time and from place to place.

Burial rites

Burial rites consisted of three parts.

LAYING OUT THE BODY

The laying out of the body took place in the family home the day after the death. The women prepared the body. They bathed, anointed and dressed it and laid it on a **bier**. The head of the deceased was raised on a headrest and the body was decorated with flowers, wreaths and jewellery. The body was displayed for a whole day. Friends and family came to pay their last respects. Women dressed in black and with their hair shorn would beat their breasts and sing traditional laments. A vessel containing spring water was placed outside the house as a sign of mourning and to allow visitors to wash their hands to purify themselves as they left.

THE FUNERAL PROCESSION

The funeral procession from the house to the cemetery took place on the third day before dawn. The body was wrapped in a shroud and covered by a cloak. The procession was required by law to be noiseless as it made its way through the streets of the city. At the cemetery the body was placed on a funeral pyre and the ashes were collected by relatives and placed in a funerary urn (see Source 11.8.2). The ashes or the corpse were then buried with other grave goods, such as jewellery, vases, statuettes or gifts from loved ones. Libations of wine and oil were poured over the grave.

THE FUNERAL BANQUET

The funeral banquet took place at the home of the deceased and it allowed for friends and relatives to come together and talk about their loved one that passed away.

Did you know?

In Athens there were laws in place that limited extravagant funerals and elaborate tombs and even prescribed the amount of money that could be spent, as well as the number of mourners who could attend a funeral.

Grave markers

The cemeteries in Greece were situated outside the city walls and along the main roads. Many grave markers have survived, such as large vases, funerary statues and grave **stelae** (tombstones). The more elaborate tombs belonged to wealthier citizens. Soldiers who died in battle were often cremated and buried on-site in man-made hills called tumuli.
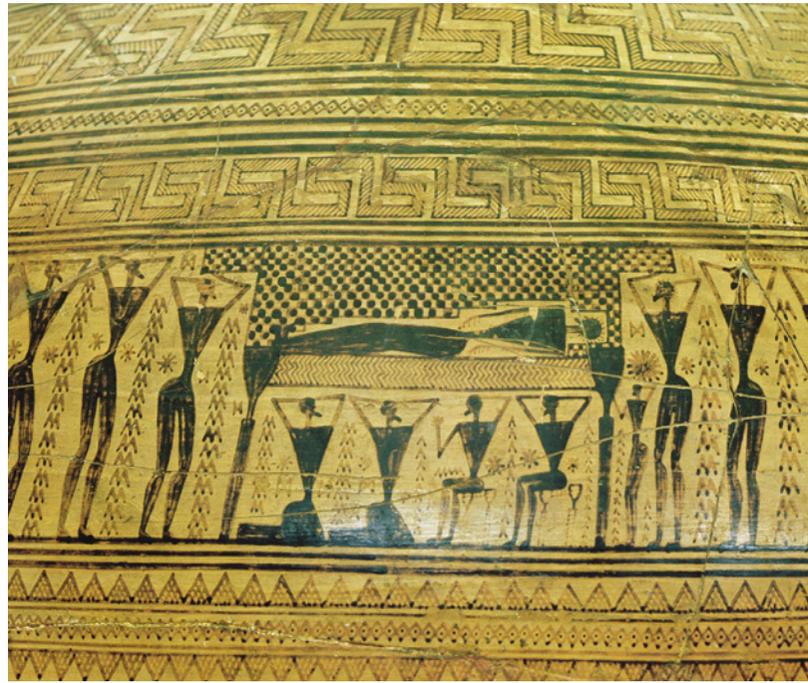
Source 11.8.2 A funerary urn depicting a funeral scene, about 750 BC. Held in the National Archaeological Museum, Athens

ACTIVITIES

Remembering and understanding

1 Who or what is Hades?
2 a What happened to the souls sent to Tartarus?
  b What were the Elysian Fields?

Applying and analysing

3 Sketch a five- to 10-panel storyboard or cartoon strip that depicts the journey of a soul to the Underworld and its judgement.

Evaluating and creating

4 Create an illustrated flow chart to select and demonstrate the important steps of an ancient Greek funerary ritual.

Significant individuals: Pericles

Pericles the politician

Pericles was an important Athenian statesman who dominated Athenian politics from 460 to 429 BC. Although an aristocrat by birth, he was a loyal supporter of democracy. Pericles supported reforms that limited the power of the aristocrats. He strengthened the democratic rights of citizens and introduced payment for official positions for those who were poor and could not otherwise serve the state. He also provided poor citizens with free entry to the city's drama festivals.
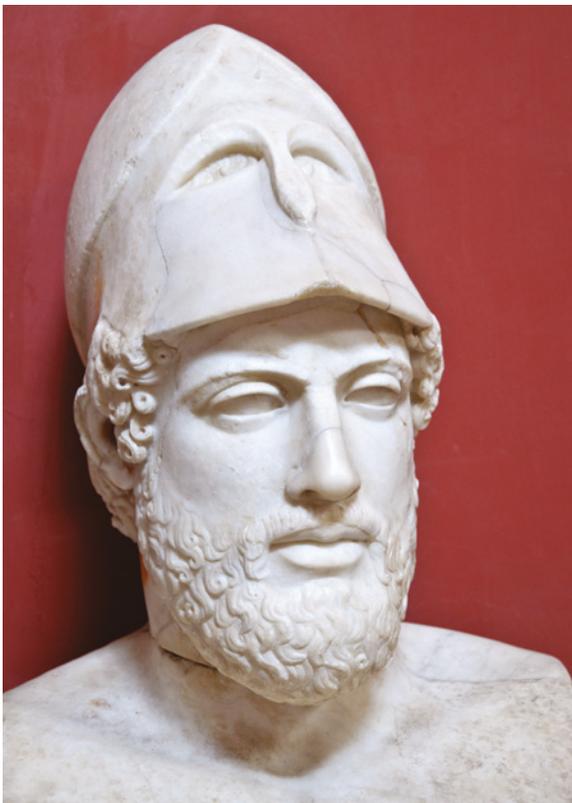
Source 11.9.1 A sculpture of Pericles. Pio-Clementine Museum of the Vatican

A charismatic man

Pericles was a charismatic and compelling leader and a skilled public speaker (see Source 11.9.1). He managed to sway public opinion and gain the support of the Athenian Assembly. His popularity was such that he was repeatedly re-elected to public office (see Source 11.9.2).

Achievements of Pericles

Pericles transformed the Delian League from an alliance of Greek city-states to an Athenian empire of subject states. Athens taxed her allies, forced them to use Athenian currency, dominated trade and became very wealthy. On the advice of Pericles, the treasury of the League was transferred from Delos to Athens. This gave Athens complete control of the League's money.

In order to support Athenian interests and trade, Pericles led Athens to form alliances with the Greek city-states in Sicily and southern Italy, and to found the new colony of Thurii. The port of Athens, Piraeus, became the largest and busiest port in the Mediterranean.

Pericles was also responsible for the introduction of strict citizenship laws. Athens had a growing population of **metics** and foreigners. In order to protect the rights of Athenians, citizenship was only granted to those with proven Athenian ancestry. Metics were not allowed to own land or to marry Athenians.

Pericles, because of his position, his intelligence and his known integrity, could respect the liberty of the people and at the same time hold them in check. It was he who led them rather than they who led him, and, since he never sought power from any wrong motive, he was under no necessity of flattering them.

Source 11.9.2 Description of Pericles by Thucydides, from *History of the Peloponnesian War*

494 BC
- Born in Athens
- Son of Xanthippus and Agariste
- A member of the aristocratic family Alcmaeonids
- Descendant of Cleisthenes, the founder of democracy

480 BC
Experiences the Persian Wars, the evacuation of Athens and the destruction of his city by the Persians

472 BC
Makes his first official appearance in political life as *choregos* (someone who finances theatre productions), by funding the play *The Persians,* written by Aeschylus

463/2 BC
- Disagrees with the policies of Cimon (statesman and general)
- Gives his support to reforms to further limit the power of the aristocrats

454 BC
Commissions the construction of new Parthenon

445 BC
Signs the 30 Years Peace Treaty with the Spartans (lasts until 431 BC)

444/3 BC
Backs the founding of the colony of Thurii in southern Italy to expand Athenian trade and influence in the western Mediterranean

433–429 BC
Elected *strategos* (general) every year, except in 430

429 BC
Dies from the plague in the early years of the Peloponnesian War

Source 11.9.3 Timeline of Pericles' life

The Periclean Age

Pericles' name is so closely associated with the Golden Age of Athens that the term 'Periclean Age' is used. Under his patronage, Athens became the greatest cultural centre in Greece, attracting builders, artists, craftsmen and great thinkers from all over Greece. Great men like the architects Callicrates and Ictinus, the sculptors Pheidias and Myron, the philosophers Socrates and Plato and the playwrights Aeschylus, Sophocles, Euripides and Aristophanes contributed greatly to the birth of Western civilisation.

Source 11.9.4 Pericles was the inspiration behind the building of the Acropolis.

Rebuilding the Acropolis

The original buildings on the Acropolis of Athens were destroyed during the Persian Wars (see Source 11.9.4). Pericles commissioned three new temples to be built on the site: the Delian League Parthenon, dedicated to the patron goddess of the city; Athena Parthenos, the temple of Athena Nike; and the Erechtheion, dedicated to Poseidon and Athena. These buildings came to symbolise the rebirth of the city, the newly found confidence of a democracy that defeated Persia and dominated an alliance of Greek city-states.

ACTIVITIES

Remembering and understanding
1. How did Pericles make Athens more democratic?
2. Outline Pericles' foreign policy. What was its purpose?
3. Why did Pericles introduce strict citizenship laws?

Applying and analysing
4. According to Thucydides what qualities made Pericles a great leader? Refer to Source 11.9.2.

Evaluating and creating
5. Pericles is quoted as saying 'What you leave behind is not engraved in stone monuments, but what is woven into the lives of others.' Evaluate the legacy of Pericles in the light of this statement.

Inquiry tasks

Research project: Atlantis

One of the most famous Greek legends was that of the lost world of Atlantis. The ancient Greeks told of a great civilisation that suddenly disappeared and sank to the bottom of the sea. In recent years, archaeologists and scientists have evaluated the latest evidence and have suggested that Atlantis did in fact exist. They point to the Greek island of Santorini, which was known as Thera in antiquity, as its likely location.

In order to complete this task, you are required to work in small groups. Divide the following research areas among the group:

a the ancient legend of Atlantis as it appears in Homer and in Plato

b the Minoan civilisation

c the archaeological site of Akrotiri in Santorini (see Source 11.10.1)

d the geological evidence of the eruption of the Thera volcano in the 17th century BC.

At the end of the individual research, group members discuss and collate their findings. The group is then required to put the pieces of the puzzle together and present a plausible connection between the Minoan civilisation, the devastation of Thera and legendary Atlantis. Present the group's findings and conclusions as a written report or a PowerPoint presentation. The individual research areas may serve as headings for the presentation. In your conclusion you must discuss how credible the evidence is.

Horseshoe debate

Prepare for a horseshoe debate by making a list of arguments for or against the following proposition: 'The British Museum should return the Parthenon Marbles to Greece.'

First familiarise yourself with the background to the topic by researching the answers to these questions and any others you may have:

a What are the Parthenon Marbles (also known as the Elgin Marbles)?

b How did they end up in the British Museum in London?

c What are the arguments of the British Museum for retaining the Pathenon Marbles?

d Why are the Greeks requesting their return?

Unlike a traditional debate in which you would have to argue for the affirmative or the negative, a horseshoe debate allows you to change sides as you become more or less convinced by the arguments of your class members. The classroom should be structured with seating in the shape of a horseshoe or a 'U'. On the right of the horseshoe are those who agree with the proposition and on the left are those who disagree. By sitting further to the left or right you are informing everyone that you either strongly agree or disagree with the proposition. Those who are uncertain will sit in the middle of the horseshoe, but need to decide to which side they lean. To ensure the debate runs smoothly it is important that everyone makes a brief opening statement after seating themselves. Feel free to change seats as you change your mind. At the end, debrief by noting how the horseshoe looked at the beginning of the debate and how it looks at the end. Discuss the most convincing arguments, one way or the other, and give feedback to the class about whether or not you finished the debate with a new point of view.

Exhibition guide

Write a museum guide for an exhibition on ancient Greek art. The exhibition includes examples from the following periods of Greek art:

- pottery (Geometric and Classical periods)
- sculpture (Archaic, Classical and Hellenistic periods)
- architectural details (Doric, Ionic and Corinthian styles)
- fashion and jewellery
- weapons.

Research and find three examples that you think best represent each of the exhibition areas mentioned above. Include an image of each and write a paragraph to describe its distinguishing features, the materials used and when it was made. Ensure that your exhibition guide is informative and visually appealing.

Source 11.10.1 A wall fresco from Akrotiri in Thera depicting a Minoan island city surrounded by another island in the background, 17th century BC. National Archaeological Museum, Athens

GLOSSARY

agora the marketplace or centre of a Greek city-state where public offices and shops were located and people met to socialise

aulos an ancient Greek wind instrument

bier a stand on which a corpse is laid before the funeral

deities gods or goddesses, or divine beings

gymnasia complexes of sporting and teaching facilities where Greeks exercised both their body and mind

Hellas the Greek word for Greece

Hellene the Greek word for person of Greek descent

league an alliance of states

libation a liquid offering, usually of wine, to the gods

lot (chosen by) names were randomly chosen from a list of registered citizens

lyre an ancient Greek U-shaped string instrument used to accompany songs and recitations

metic a Greek or foreigner migrant living in a city-state

oracle a place of prophecy or the prophecy itself or the person giving the prophecy

sophist a wise person or philosopher or teacher

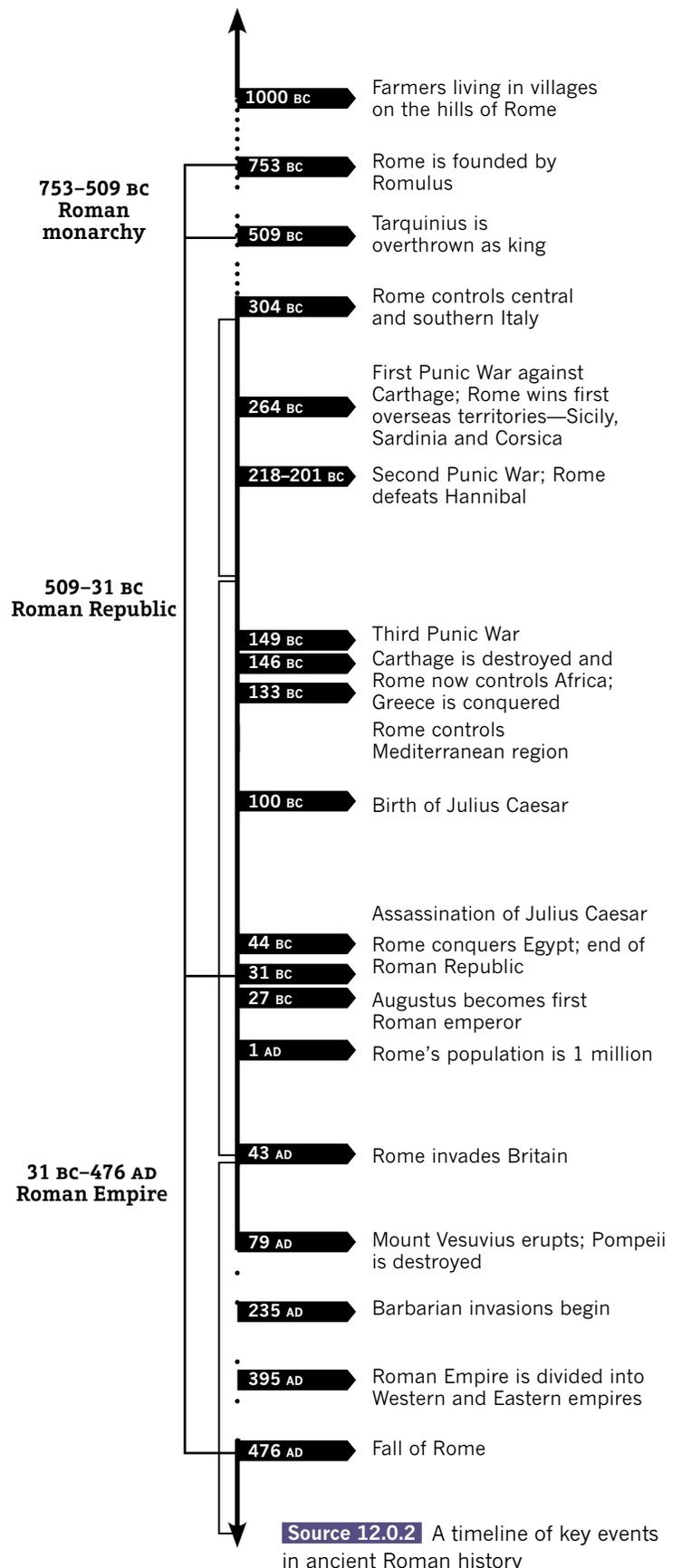**stelae** upright stone slabs or pillars that serve as monuments or markers, especially as gravestones

Ancient Rome

From humble beginnings on a hillside beside the Tiber River, the ancient Romans first built a **republic** and then an empire that was a world power for over 1000 years. Rome ruled all of the lands around the Mediterranean Sea and as far away as Britain and Syria. It influenced the development of Western culture and its legacy lives on today.

Source 12.0.1 The Pantheon, originally built by general Marcus Agrippa in 27–25 BC, is now the central feature of the Piazza della Rotunda in Rome.

753–509 BC Roman monarchy

509–31 BC Roman Republic

31 BC–476 AD Roman Empire

1000 BC Farmers living in villages on the hills of Rome

753 BC Rome is founded by Romulus

509 BC Tarquinius is overthrown as king

304 BC Rome controls central and southern Italy

264 BC First Punic War against Carthage; Rome wins first overseas territories—Sicily, Sardinia and Corsica

218–201 BC Second Punic War; Rome defeats Hannibal

149 BC Third Punic War
146 BC Carthage is destroyed and Rome now controls Africa; Greece is conquered
133 BC Rome controls Mediterranean region

100 BC Birth of Julius Caesar

Assassination of Julius Caesar
44 BC Rome conquers Egypt; end of Roman Republic
31 BC
27 BC Augustus becomes first Roman emperor
1 AD Rome's population is 1 million

43 AD Rome invades Britain

79 AD Mount Vesuvius erupts; Pompeii is destroyed

235 AD Barbarian invasions begin

395 AD Roman Empire is divided into Western and Eastern empires

476 AD Fall of Rome

Source 12.0.2 A timeline of key events in ancient Roman history

Geography of ancient Rome

The geographical setting

The city of ancient Rome was located in central Italy near the west coast and developed over many centuries. Rome's earliest inhabitants settled beside the Tiber River, which flows from the centre of the Italian **peninsula** into the Mediterranean Sea (see Source 12.1.1). They chose a position about 24 kilometres upstream from the coast because it featured a safe crossing point, a fresh water supply and fertile soil for farming.

This crossing point was near seven hills. The earliest Romans established their farms on these hills high above the swamp land of the valleys. The three hills closest to the river came to be known by the Romans as Capitoline, Palatine and Aventine. The four hills a little beyond these are the Quirinal, Viminal, Esquiline and Caelian.

Beyond the hills, the vast and rich **agricultural plain** of Latium spread out to the west. Ancient volcanic activity in this region explains the fertile soil of the plain.

KEY
- Roman Empire at its greatest extent
- Mountain ranges
- Major settlement
- River

BRITAIN
ATLANTIC OCEAN
GAUL
Alps
Apennines
Tiber River
Black Sea
CORSICA
Rome
SPAIN
SARDINIA
ITALY
ASIA MINOR
GREECE
Carthage
SICILY
Mediterranean Sea
SYRIA
EGYPT
AFRICA

0   1000 km

Source 12.1.1 The Roman world

Feature	Benefit
Natural defences	Ancient Rome was surrounded by the Apennines to the east and the Alps to the north. These mountain ranges protected Rome's inhabitants from attack; especially during winter, when snow made it difficult to cross the mountains. They also provided safe higher ground when the Tiber River flooded. The Pontine marshlands protected Rome from the south, and the Mediterranean Sea provided a barrier in the west; especially in earlier times, when enemies skilled in shipbuilding and navigation were not yet common.
Fertile land	The rich agricultural land of the Latium plain allowed farmers to grow larger and better crops. This abundance of food contributed to population growth. Successful agriculture also meant that Rome could feed its growing army.
Trade routes	Ancient Rome was located at the intersection of several important trade and communication routes. It dominated the main roads that ran north and south along the peninsula, and west to east from the sea into the interior. This connected Rome with other settlements in Italy for trade.
Tiber River	The Tiber was navigable by ships allowing goods to be carried to and from the Mediterranean coast. This was particularly important as there was no natural harbour or port along this part of the west coast of Italy.
Mediterranean Sea	As Rome had easy access to the Mediterranean Sea it could reach the rich trading cities of the East, northern Africa, Spain and Gaul.
Central location	Rome's central position enabled it to control the Italian peninsula. In turn, the peninsula's central location in the Mediterranean led to Rome's control of the region and beyond.

Source 12.1.2 Geographical features that led to the rise of Rome as an ancient world power

Did you know?

Rome is traditionally believed to have been founded on the Palatine Hill by Romulus. Initially there were seven settlements on seven hills. Over time the people of each hill began to meet for religious games, which then led to cooperative efforts such as draining marshlands. Thus the city of Rome came into being.

Access to natural resources

The Romans were able to access valuable resources from their region. The nearby Alban Hills were quarried for a volcanic stone called 'tufa', which was used for building. There were also other stones such as marble, and clay for pottery. The Apennines, a mountain range extending across the length of the Italian peninsula, were thickly forested with trees useful for building ships and housing. Also, the salt pans at the mouth of the Tiber provided sea salt, which was highly prized by communities on the Italian peninsula.

Creating an empire

Source 12.1.2 shows how ancient Rome's physical features allowed for the successful growth of its civilisation on the Italian peninsula and in the Mediterranean region and beyond.

ACTIVITIES

Remembering and understanding

1   Identify at least two key reasons for the choice of location of Rome by the first settlers in the area.

Applying and analysing

2   Rank the geographic features outlined in Source 12.1.2 in order of most important to least important. Explain your ranking to a partner.

Evaluating and creating

3   The Latin term *mare nostrum* means 'our sea'. Formulate a hypothesis that explains why the ancient Romans used this term.

Law and government

The monarchy

Ancient Rome's earliest rulers were kings. The **monarchy** lasted for about two and a half centuries, from 753 to 509 BC.

Imperium

Ancient Rome's monarchy was non-hereditary, meaning that a king could not inherit his position from his father. It was based on the accepted authority of the king. Romans believed that this authority, called **imperium**, was given to Romulus by the god Jupiter. It meant that the gods gave the king the ability to issue orders and to rule society.

Roman society

Romulus, as the first king of Rome, organised Roman society into groups of citizens, non-citizens and slaves. The **patricians** or nobles were citizens who enjoyed an important status. Romulus also chose a small group of wise patricians as his advisers. This group was called the Senate. The rest of the citizens, called **equites** and **plebeians**, could participate in the people's Assemblies, where they could vote on proposed new laws.

Absolute power of the king

Initially, Romulus governed Rome with the advice of the Senate, but over time he began to make independent decisions. By the end of his reign, Romulus had gained absolute power for the kings of Rome to rule the city as they wished. The kings controlled religion, law-making, the courts, the military and all treaties with neighbouring tribes.

Roman law

Little is known about Roman law during the period of the monarchy. However, during the early republic, existing laws were published in a public document called the Twelve Tables. All the laws were clarified so that careful and consistent judgments could be made. The process of legislation was also established during this period. Legislation began with the proposal of laws during Senate meetings by patricians. Once the Senate had given its approval, the plebeians would enact the legislation during a vote in the Assemblies.

Did you know?

Legend tells us that the first king of Rome, Romulus, and his twin brother, Remus, were the sons of Mars, the Roman god of war. They were abandoned as babies, but saved by a she-wolf who fed them her milk. Later a shepherd brought them up as his own sons. When they grew up they decided to start their own settlement on the hill where they had been saved, but the brothers quarrelled and Romulus killed Remus and declared himself king of Rome.

Source 12.2.1 A bronze statue of Romulus and Remus, the legendary founders of Rome, in the Capitoline Museum, Rome
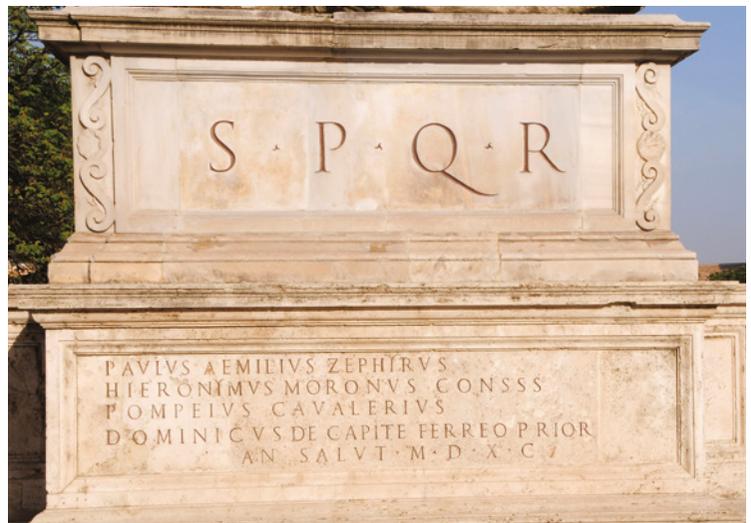
Source 12.2.2 An SPQR inscription at the Piazza del Campidoglio in Rome. SPQR was the motto of the Roman Republic. It stands for *Senatus Populusque Romanus*, which means 'The Senate and People of Rome', reflecting the ideals of the new republic and its government by and for the people.

The Roman Republic

For the *populus Romanus* or community of Rome, social status was highly important. The structure of society was rigid and strict laws ensured that some people had more power than others. There were two important distinctions between groups of people. First, the legal distinction between those who were free and slaves. Second, Romans who were freeborn could be citizens or non-citizens. Citizens were the most important people in Rome (see Source 12.2.3).
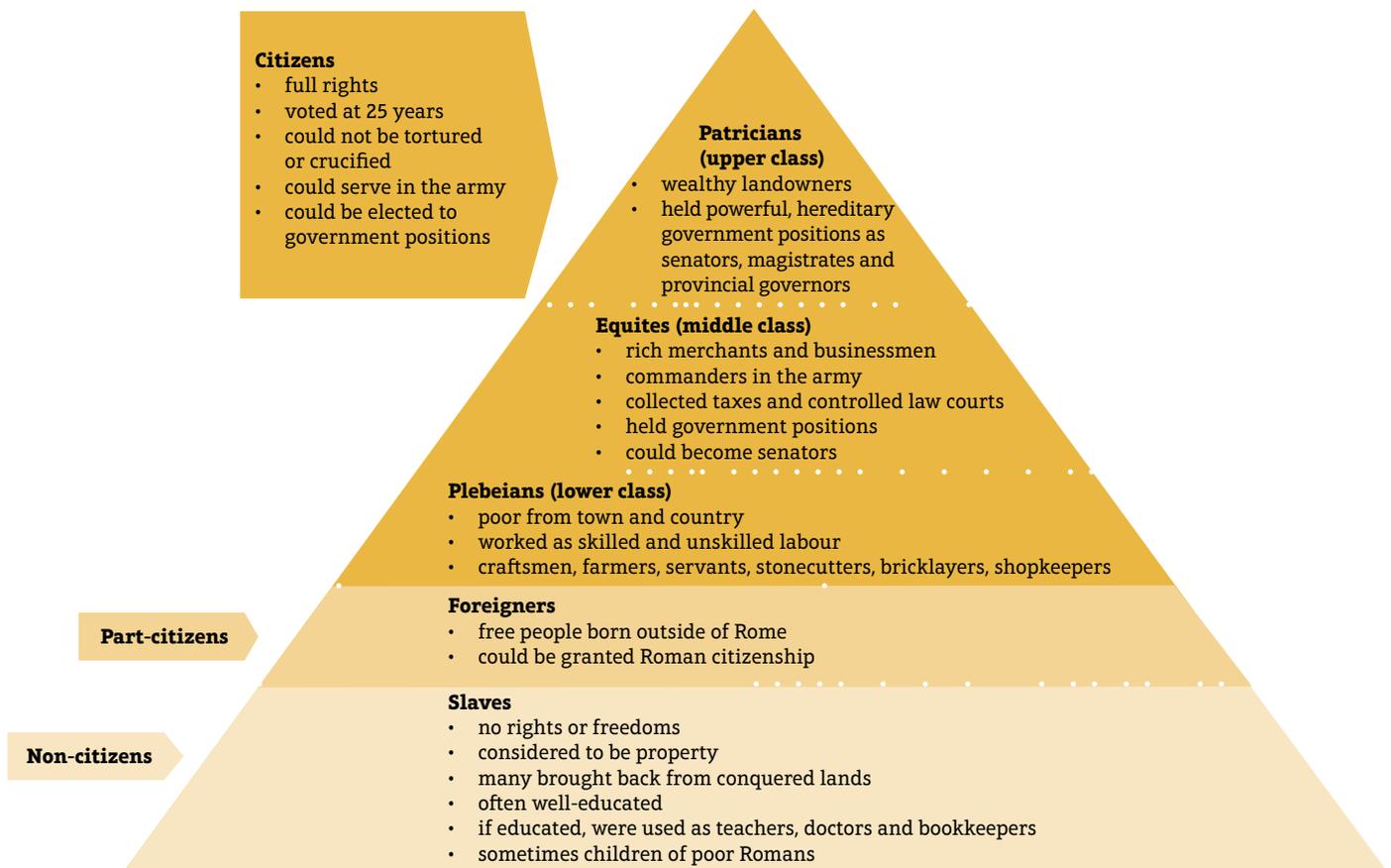
The consulship

The leadership of Rome during the republic was very different from that during the monarchy. In the Roman Republic, two men were elected as leaders or consuls from among the Senate and they shared the *imperium* for one year only. Consuls could not be immediately re-elected. Consuls had full command of the army and the power to impose the death penalty. Unlike kings, consuls were accountable for their actions and they had to obey the laws and customs of the republic. They could be prosecuted for any offences once their term of office expired.

Source 12.2.4 A painting showing what the Roman Senate may have looked like. Fresco, 1889, by Cesare Maccari. Palazzo Madama, Rome

The Senate

Originally a new Senate was chosen every year. However, over time this changed so that senators were appointed for life. During Senate meetings, a consul would present a matter for discussion and then ask each senator for his opinion. When the senators all agreed on a particular point, the consul would accept their advice.

Citizens
- full rights
- voted at 25 years
- could not be tortured or crucified
- could serve in the army
- could be elected to government positions

Patricians (upper class)
- wealthy landowners
- held powerful, hereditary government positions as senators, magistrates and provincial governors

Equites (middle class)
- rich merchants and businessmen
- commanders in the army
- collected taxes and controlled law courts
- held government positions
- could become senators

Plebeians (lower class)
- poor from town and country
- worked as skilled and unskilled labour
- craftsmen, farmers, servants, stonecutters, bricklayers, shopkeepers

Part-citizens

Foreigners
- free people born outside of Rome
- could be granted Roman citizenship

Non-citizens

Slaves
- no rights or freedoms
- considered to be property
- many brought back from conquered lands
- often well-educated
- if educated, were used as teachers, doctors and bookkeepers
- sometimes children of poor Romans

Source 12.2.3 Social status in ancient Rome

Magistrates and public duty

The public duties of the consuls gradually grew and eventually other men from the Senate were elected to assist them. They were called magistrates. Like the consuls, they served for a fixed time and were held accountable. They administered important aspects of daily life in Rome, including the record of citizenship, the law courts, public finances, food supply and markets, and the upkeep of public buildings. They also dominated public religion in the role of priests.

Plebeians

Those citizens who were not patricians were plebeians (or common people). There were vast differences in wealth between these two groups and even among the plebeians themselves. For the majority of the plebeian population, life was hard and unpredictable. Rome was an agrarian society (dependent on agriculture) with many poor farmers. Most of the plebeian population suffered from poverty, lack of land, famine and financial debt.

Source 12.2.5 A fresco (wall painting) from Ostia, Rome's ancient port, showing the loading of grain onto the ship *Isis Giminiana*, 2nd–3rd century AD, Vatican Museums and Galleries

Equites

Some richer plebeians made their wealth by investing in business and finance. They became known as the *ordo equister* (equestrian order) and their members were called 'equites'. Over time they were given the right to become part of the Senate.

Assemblies of the people

There was a democratic element to the government of Rome. The republic maintained the Assemblies of the people. During the Assemblies, the plebeians had the right to enact laws through a vote. They also had the right to vote for patricians who were running in elections for the magistracies and consulships.

Slaves

Slaves were an important group in Rome because they were a vital part of the economy. Slave traders obtained them from pirates and slave markets throughout the Mediterranean region. Poverty-stricken Roman parents also sold their children into slavery. Slaves provided both skilled and unskilled labour in Roman society. They worked in mines, small industries, households and on farms. Slaves could be granted freedom by their owners or they could raise money to buy their freedom. These ex-slaves were called **freedmen** and **freedwomen**. In some cases, freedom and citizenship were granted at the same time.

Did you know?

There were three slave rebellions during the late Roman Republic. They were called the Servile Wars. The most famous of these was the Third Servile War (73–71 BC), a slave revolt led by an escaped gladiator, Spartacus. He successfully defeated the Roman army in seven battles before finally being defeated by General Marcus Crassus. At its peak, Spartacus's army was believed to have been 90 000 to 120 000 men strong.

The Roman Empire

Towards the end of the republic, Roman society was characterised by civil war as competing groups of people attempted to gain power. Julius Caesar (100–44 BC) became the most powerful man in Rome in 49 BC and declared himself consul and dictator of Rome for life. Many Romans feared that he was going to declare himself king of Rome, and so he was assassinated in the Senate on the Ides of March (15 March) in 44 BC. After his death, there were continual struggles for power between different leaders until, in 27 BC, Octavian Caesar (Julius Caesar's great-nephew and adopted son) took absolute power. He became the first emperor of Rome, taking the name of Augustus.

Society during the empire

Many aspects of Roman society remained the same under the empire. The wealthy patrician and plebeian

families still held important political positions in Rome; the political bodies such as the Senate and the Assemblies remained. However, the emperor introduced several important changes that reflected a shift in the balance of power away from the senatorial elite. This began when Augustus assumed many powers over the whole of Roman society.

Source 12.2.6 shows some of the changes to the social and political structure that were introduced by Augustus.

Emperor	• He held the title **princeps** or first citizen. • He also held supreme power (imperium) over the army and finances of Rome. • He was the head of civil, judicial, military and religious life of Rome. • The army owed him allegiance. • He was the head of the imperial household.
Patricians	This group still dominated the Senate and magistracies, but in limited capacity: • Political power of the Senate was reduced. • The size of the Senate was reduced and limited to 600. • The Senate was given control of the state treasury. • The Senate became a legislative body. • Assemblies of the people lost all importance, and the emperor adopted their powers and roles. • The role of censor was taken by the emperor. • Magistrates lost their roles to equites and freedmen. • Equites lost their political power but assumed new bureaucratic responsibilities (see below). • The provincial elite were attracted to the new political opportunities in Rome.
Equites	These wealthy plebeians were traditionally the citizens who were the businessmen in Roman society. They were now given military and administrative responsibilities to run the empire: • Some received the title of prefect or commander, such as commander of the corn supply to Rome, commander of the fire brigade and police force in the city of Rome, or commander of the Praetorian Guard (the emperor's personal bodyguard). • Others were given the title procurator, which meant that these men worked as agents for the emperor in the provinces. They managed the overseas properties of the emperor.
Governors in the empire	• These men were paid a salary during the empire. • They had been consuls and this was the career path offered once the consulship expired. • They were often appointed by the emperor himself.
Law	• The law courts continued to function as under the republic. • Two new courts were created to deal with cases of treason against the state and poor administration. • Consuls or the princeps himself presided over these courts. • The princeps was the final court of appeal, meaning that the emperor could be approached for a verdict directly. • The office of city prefect was created, providing Rome with a judge and chief of police.

Source 12.2.6 Summary of changes introduced by Augustus

ACTIVITIES

Remembering and understanding

1 Outline the main differences between citizens and non-citizens.
2 What was the role of a consul in Rome?
3 What contribution did the magistrates make to Roman public life?
4 Explain the importance of slaves in Roman society.

Applying and analysing

5 **a** Analyse the changes made by Emperor Augustus to the social and political structure by using a T-chart to compare and contrast them with the social and political structure of the Roman Republic.
   b Explain how these changes consolidated Augustus's power.

Evaluating and creating

6 Look closely at Source 12.2.1 and consider the legend of Romulus and Remus carefully. Suggest some interpretations about the symbolism of this statue and of the legend.
7. In Roman society, the key indicators of high social status for men were freedom, being born into a wealthy and powerful patrician family, a senatorial career and the ownership of slaves. Using a Venn diagram, compare and contrast the key indicators of social status (for men and women) in Australian society today.

Religion

Religion

The earliest Roman gods were impersonal spiritual powers that represented natural forces such as weather and fertility. Early Roman religion developed from the rituals performed by the first farmers who lived in the hills of Rome.

Religion changed significantly when Greek colonists arrived on the Italian peninsula. Greek gods had human form and they were absorbed into Roman culture. They became the major Roman gods, although many had different names. The three most important Roman gods—Jupiter, Juno and Minerva—were worshipped in a temple on the Capitoline Hill in Rome.

Did you know?

Did you know that the Roman god Vulcan was a blacksmith who lived under the volcano Mount Etna? When he got angry, Mount Etna would erupt.

Source 12.3.1 Mosaic depicting Neptune carrying his trident and riding in a chariot, Bardo Museum, Tunis

The gods

Gods were a very important part of people's lives. Romans worshiped a pantheon or collection of gods, whom they believed controlled all facets of life and nature (see Source 12.3.1). Every home had a shrine to the goddess of the hearth, home and family, Vesta.

Rulers consulted priests before making decisions. Farmers only planted crops if the gods approved. As the Romans believed the gods to be easily angered, priests regularly offered blood sacrifices of animals to them to prevent any catastrophes occurring. There were strict rituals in making sacrifices to ensure they were made in the ways the gods would approve of.

God/Goddess	Description
Jupiter	Chief of the gods, god of thunder and lightning
Juno	Wife of Jupiter, associated with fertility and childbirth
Minerva	Goddess of wisdom, arts and crafts, and also war
Neptune	God of the sea
Mars	God of war
Venus	Goddess of love and fertility
Apollo	God of the Sun
Vulcan	God of fire
Ceres	Goddess of the Earth
Pluto	God of the underworld and of death
Saturn	God of time
Cupid	God of love
Bona Dea	An earth and fertility goddess, worshipped exclusively by Roman women

Source 12.3.2 The major ancient Roman gods

Minerva

Minerva was very powerful. She was born from the head of her father, Jupiter, wearing armour and carrying weapons. She was often shown with an owl to represent her wisdom and knowledge. She was also the goddess of good advice, science, arts, medicine, weaving and war.

Juno

Juno was the goddess who protected Rome and watched over the lives of women. She carried a spear and a shield and wore a goat skin. Juno protected pregnant women. In her temple, offerings with ties were forbidden as it was believed knots or belts would hinder the birth of a child.

Source 12.3.3 Statue of the goddess Minerva

Source 12.3.4 The ruins of the temples of Minerva, Jupiter and Juno in Tunisia, northern Africa

Jupiter

Jupiter was father of all the gods. Juno was his sister and wife, and Minerva was his daughter. Jupiter was associated with thunder, storms and lightning and was feared for his violence. He often wore a white beard and held a sceptre on which was his symbol, an eagle. He was worshipped by the army, who led processions to his temple after a victory.

Did you know?

Romans believed they went to the realm of the god Pluto in the underworld when they died. The dead person's spirit was ferried across the River Styx to Hades, the place of the dead. A coin was placed under the tongue of the deceased at the funeral, to pay Charon, the ferryman. Spirits were judged in Hades; the good went to heaven and the bad went to hell.

Religious festivals

The Roman year was organised around religious activities. During the period of the empire, almost one-third of the year was devoted to religious ceremonies and games. There were about 40 religious festivals a year, some lasting for days. Everyone participated in religious activities, including women, children and slaves. Some rituals were performed by the Vestal Virgins, a group of women priestesses devoted to the goddess Vesta. One of their duties was to sprinkle salted flour over victims about to be sacrificed.

Quinquatria

This religious festival celebrated the birth of the goddess Minerva on 19 March, but later was extended to five days. Plays were performed, there were competitions for poets and orators, wild beast shows and gladiator contests.

Ides

These festivals were sacred to the god Jupiter. They were celebrated each month, either on the thirteenth day in a short month, or the fifteenth day in a long month. The ritual involved a white lamb being led along the main street in Rome to the temple of Jupiter, where it was sacrificed.

ACTIVITIES

Remembering and understanding
1 Provide an example of religion impacting on people's daily lives.
2 Who were the Vestal Virgins?

Applying and analysing
3 Why do you think the Romans chose to have so many gods?
4 Create a table with two columns. In one column list at least six of the gods listed in Source 12.3.2; in the other column, name the equivalent ancient Greek god. You may need to do some research.

Evaluating and creating
5 Explain why you think the ancient Romans adopted religious beliefs from the ancient Greeks.
6 Research Roman gods and create a list of at least six gods. Rank them in order of importance, explaining why you chose this ranking.

Everyday life

Roman family life

Ancient Roman households were like modern nuclear families—they included the married couple and their children. Wealthier households included slaves. The *paterfamilias* or father was the head of the family and he had absolute control. Wealthier Roman families lived in a town house or an atrium house. Other families lived in one or more rented rooms in a crowded apartment block, called *insula*.

Role of women

Women ran the household and cared for the children. Patrician women had some financial freedom and could inherit and dispose of property. During the early Roman Republic, married women and their finances were under the control of their husbands. By the end of the republic, a woman's father maintained control, and he could decide issues about her finances and whether or not to make a different marriage for her.

Women from patrician families were valuable in creating political alliances through marriage. Getting a divorce was easy and remarriage was frequent. Husbands could divorce their wives on the grounds of infertility or adultery.

Children

Children legally belonged to the father, who had the power to disown or sell his children into slavery. Adoption of boys within elite families was common, especially if a father had no male children to inherit his property. Patrician boys had three names: a personal name, a clan name and a family name— for example, Marcus Aurelius Antoninus. Girls were given one name, which was the clan or family name in feminine form.

For example, the daughters of Antoninus would be called Antonia Major and Antonia Minor if there were two daughters in the family (if there were three or more, they would be numbered).

Learning and play

Children were instructed in the following:

- obedience and respect
- *pietas,* or behaving correctly towards the family and the gods
- ancestors and customs
- virtues, including persistence, courage and loyalty.

During the republic, fathers taught their sons to read, write and use weapons. Later on, freedmen and educated slaves took on this role. Patrician boys studied literature and public speaking. At 16 or 17 years of age, they might be taken to observe the Senate and they could spend time with the army. Girls were taught how to run a home by their mothers, and to read and write. Children played with a range of toys made out of wood or bones. Children in poorer families started work as young as six.

Food and drink

Only wealthy Romans ate three meals a day. Breakfast was seen as a luxury. The majority of Romans relied on handouts of grain to make porridge or rough bread. On special occasions they were given meat, sweet wine and vegetables.

Romans loved intense flavours. The strong, fish-flavoured sauce called *garum* was very popular. Pepper, spices and herbs were available, although pepper was very costly. Romans enjoyed sweet dishes flavoured with honey and fruit as well as pastries and cakes. They also enjoyed pork, domestic fowl, fish and shellfish.

A wide range of vegetables were grown including cabbage, lettuce, asparagus, onions, garlic and beans. Olive oil was a staple. Vendors at the markets sold fresh meats, vegetables, fish and shellfish. Food could not be stored for long, so smoked, pickled or salted meat and fish were popular.

Commercial and home ovens were used for baking bread and pastries, and meals were cooked in cauldrons which hung over braziers or open fires. People who lived in apartment blocks had no kitchens and relied on communal ovens and foodstalls or bars that sold hot food.

Watered wine was the most common drink and was sometimes drunk spiced and heated. Milk was used for making cheese or medicine and was considered an uncivilised drink.

Clothing

All ancient Romans, whether rich or poor or male or female, wore a simple tunic with a cord or belt. However, wealthy Romans had clothing made of richer fabrics and colours, and wore decorative brooches and clasps. So, clothing was important as it indicated a person's social standing or rank (see Source 12.4.1).
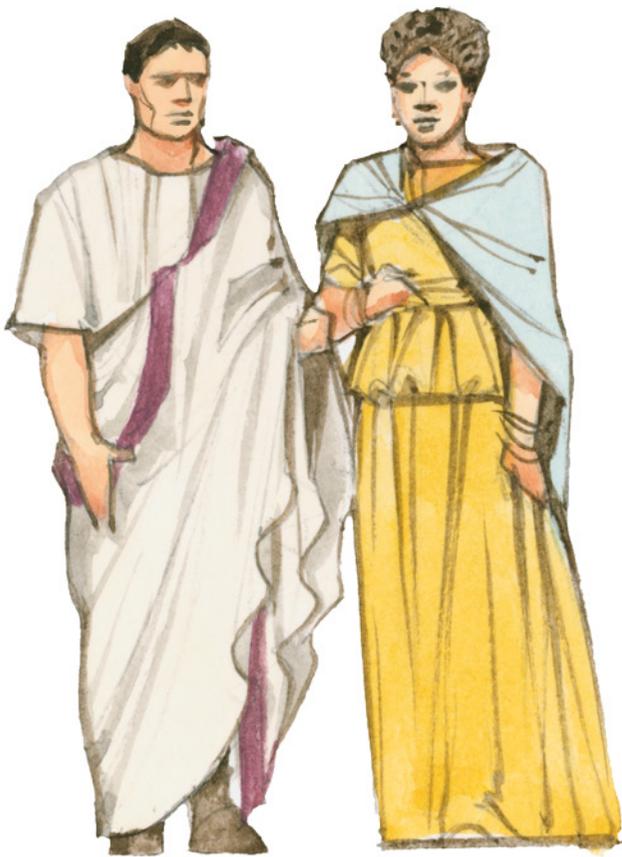
Wealthy male citizens wore a toga over a short tunic. Togas were expensive as they were made out of fine wool.

Wealthy women were distinguished by wearing rich colours and fine materials such as silk.

Senators were distinguished from other patricians by the broad purple stripe on their togas.

Most citizens would have worn a short-sleeved tunic tied around the waist with a belt. Capes or cloaks were added in colder weather.

Women wore tunics covered by a long, full dress called a *stola*. It was tied high on the waist with a thin belt or girdle. Women also wore cloaks.

Source 12.4.1 Clothes worn by Roman men and women

Public entertainment

Entertainment was an important feature of Roman society.

Gladiatorial games

Public games were spectacular and included gladiatorial fights. Gladiators were condemned criminals, slaves or prisoners of war who fought to the death. Mosaics and terracotta figurines provide evidence of the different types of helmets, shields and swords or daggers that they used. For example, a *retiarius* fought with a net and a trident, while a Thracian fought with a curved sword and a round shield. Women, dwarves and wild animals also fought against gladiators for the shock value. A large and expensive trade in supplying animals for the games developed during the empire, many coming from Egypt and elsewhere in Africa. These bloody combats took place in the arena of an amphitheatre.

Chariot racing

Chariot racing dates back to the monarchy and was the most popular form of public entertainment. There were four teams—blue, green, white and red—and the rivalry between them and their fans was intense.

Theatre

More sedate entertainment could be found in the theatres where plays, mimes and pantomimes were performed. Only men could act in plays, but women could perform in mimes and pantomimes. Pantomimes with lots of singing and dancing were considered to be unsophisticated and tasteless.

Did you know?

The first known shopping mall was built by the Emperor Trajan. There were 150 shops on several floors selling everything from clothes to food. Citizens, freedmen, freedwomen and slaves could all shop there.

Source 12.4.2 The Colosseum was the site of gladiator fights in ancient Rome

Private entertainment

Public baths

Bathing was a recreational and social activity in Roman society. Citizens attended the public baths. Some wealthier households had private baths. A visit to the baths could include enjoying the hot and cold plunge pools, getting a massage and having body hair removed. Public baths might have an exercise area and offered the sale of takeaway food.

Banquets

Lavish banquets also provided entertainment. Roman writers describe gourmet treats and eye-catching food creations. The wealthy enjoyed delicacies such as snails, dormice (small rodents with furry tails) and small wild birds. Entertainment of music and dancing was offered at dinner parties. Poorer citizens visited taverns and played gambling games with dice, knucklebones and gaming counters.

Punishment and the law

The Romans distinguished between public and private law, and penalties were aimed at vengeance and deterrence.

Torture was common by the 1st century AD and prisons were also used as a form of punishment. In some cases, exile (removal from one's native country) was used as a punishment. Emperor Augustus had his own daughter Julia exiled for adultery (extramarital affairs).

Public offences	
Offence	**Punishment**
• Treason against the state • Murder	• Decapitation • Crucifixion • Exposure to wild animals • Beatings • Heavy fines • Working in the mines

Private offences	
Offence	**Punishment**
• Theft • Assault	• Fines • Confiscation of property

Source 12.4.3 Roman penalties for crimes

Health and medicine

Romans believed that making offerings to the gods would help with ill health. They wore amulets and bought magical spells. However, they also knew about the medicinal properties of herbs and drugs. There are many letters that mention health problems such as eye infections and bad teeth. Henbane and opium were used for pain relief, and vinegar was used as an antiseptic. Wealthy families had the use of doctors, and midwives specialised in helping women in childbirth. An interesting range of metal surgical instruments has survived including needles, scalpels, probes and hooks.

ACTIVITIES

Remembering and understanding

1   Identify two ways that Roman families were similar to modern Australian families and two ways in which they differed.
2   Use a T-chart to list the similarities and differences in Roman food to the foods we eat today.
3   List the forms of public and private entertainment common in Rome.
4   Describe Roman medicine.

Applying and analysing

5   Examine the values that children in ancient Rome were expected to follow under the heading 'Learning and play'. Discuss, with a partner, why these virtues were so important in Roman society.
6   Interpret the ancient Roman diet by creating sketches for either an AVD or an illustrated concept map.

Evaluating and creating

7   Devise a hypothesis to explain why gladiatorial games were so popular in ancient Rome.
8   **a** Produce a Venn diagram to compare and contrast life in ancient Rome with life in modern Australia.
     b Discuss your findings in a short paragraph of 50 to 100 words.

The Roman army

A warlike society

From Rome's earliest days, Romans expected their generals and soldiers to march out and fight neighbouring communities. They valued victory in war and they believed that the gods—especially Jupiter, Mars and Minerva—would help them to win battles. Romans enjoyed watching their generals celebrate military victories in public processions through Rome called 'triumphs'.

The army

The Roman army first began with the conscription of citizens for a limited campaign season during the warmer months. During the republic, men eagerly volunteered when they were presented with a campaign that promised killing, plunder and the prestige associated with victory. Towards the end of the republic, generals rewarded the veterans of campaigns with land. Allies who volunteered to fight for Rome were rewarded with Roman citizenship.

The main unit of the army was the legion (about 5000 men), which was divided into cohorts. Each cohort was further divided into centuries (units of 80 to 100 men). During the rule of Augustus, there were about 25 legions.

The army also included specialised units of cavalry and archers. These were called auxiliary units.

Where did the army fight?

The legions and auxiliaries were moved around the empire as it grew. Legions were posted to different provinces to provide permanent garrisons in cities and to guard important geographical locations, such as overland trade routes, river crossings and even mines. Guarding the frontier was the most important role of the provincial army. This included monitoring the progress of the local tribes and crushing rebellions.

Roman soldiers

During the early Roman Empire, the soldiers' pay and period of service were increased. A soldier could remain in the army for 25 years. He was granted a share in any plunder and was given a final payment at the end of his service. Soldiers were not allowed to marry, although many had 'unofficial' wives and children.

The basic diet of the soldier was a baked wheat biscuit, bacon, cheese and sour wine. He had to carry enough rations to last for 15 days on the march. When camp was established soldiers were given meat, fish, fruit, vegetables, and salt and wheat to make their own bread.

Training and battle were tough and brutal experiences. Being in the army was about discipline and duty. Training included endless drills such as running in armour, cleaning weapons, marching and parade practice (see Source 12.5.1).

Source 12.5.1 A detail from Trajan's Column in Rome (built in 113 AD) showing soldiers completing various activities and drills

Source 12.5.2 An 18th-century AD artist's impression of Roman soldiers in different battledress and armour. A typical soldier's uniform consisted of a woollen tunic, body armour, shoulder plates, a helmet, groin protection and sandals. His weapons included a javelin, a sword, a dagger and a shield.

Soldiers had to be ready for any circumstance and be able to ride a horse, swim or build a camp or a road. In battle, soldiers were armed with a sword, a javelin and a shield.

Deadly attack

During battle, the cohorts were drawn up in rows which could be made into a deadly wedge formation in order to break the enemy line. Soldiers began their attack by throwing javelins from a distance to disrupt the enemy lines and then charged forward with swords and shields for hand-to-hand combat. The Roman army's success in battle was based on discipline and excellent training.

When legions besieged cities, they used a number of tactics, including battering rams tipped with iron, timber ramps and siege towers on rollers. They also used artillery, including bolt-shooting machines called *catapoltae* and stone throwers. The latter could hurl stones up to 500 metres and break walls of brick, wood and stone. The soldiers themselves could raise their shields to form the *testudo* or tortoise formation (see Source 12.5.3).

The Romans showed little mercy once they defeated an enemy. Inhabitants of cities were either all killed or sold into slavery and the towns were pillaged.

Source 12.5.3 A detail from Trajan's Column showing the *testudo*

ACTIVITIES

Remembering and understanding

1. Paraphrase the development of the Roman army using a flow chart to select the key points of change.
2. With a partner, discuss the types of drills that soldiers completed when they were not fighting and explain why these drills were important.

Applying and analysing

3. Look carefully at Source 12.5.1 and interpret what the soldiers are doing in this scene. Compare this with the activities shown in Source 12.5.3.

Evaluating and creating

4. Work in pairs and prepare a dramatisation of a TV interview between a presenter and a Roman legionary (soldier) who is stationed along a provincial frontier. In your script you should re-create the typical experience of such a legionary—the highs and the lows of being in the Roman army.

Warfare

Rome and Italy

Rome was not the only powerful city in their region. From the earliest days Rome was almost continuously at war against her immediate neighbours. By the late 4th century BC, Rome had conquered the entire Italian peninsula. Territory that was conquered was annexed to Rome, either through an alliance or through settlement. Some communities were granted Roman citizenship, which meant they owed loyalty to Rome and had to serve in the Roman army.

Roman expansion

During the republic, Rome came into conflict with communities beyond Italy. Initially, Greece and northern Africa were conquered after a series of long and hard-fought wars. Over time, Rome sought more territories to conquer and came into conflict with the peoples of Spain, Gaul, Britain, Egypt and Syria.

This contact was violent and bloody; Rome inflicted massacres, deportations, enslavement, destruction of cities as well as taxation and forced recruitment into the Roman army.

The Punic Wars

The Phoenician city of Carthage, situated in northern Africa, dominated the Western world and was Rome's great rival for control of the Mediterranean region. Rome engaged in three wars against Carthage between 264 and 146 BC, called the Punic Wars (see Source 12.6.1). Originally Rome and Carthage had relied on treaties to ensure friendly relations and to prevent Rome from imposing on Carthage's trade routes.

Rome and Carthage first came into conflict over the island of Sicily in 264 BC, which was controlled by the Carthaginians. This was the first Punic War, which ended with the Romans gaining partial control of Sicily, giving them an opportunity to develop as a naval power.

KEY
- Carthage controlled, 264 BC
- Carthaginian land added to Rome, 146 BC
- Rome controlled, 264 BC
- Added to Rome, 146 BC

Invasion routes
- Hannibal
- Scipio
- Major battles
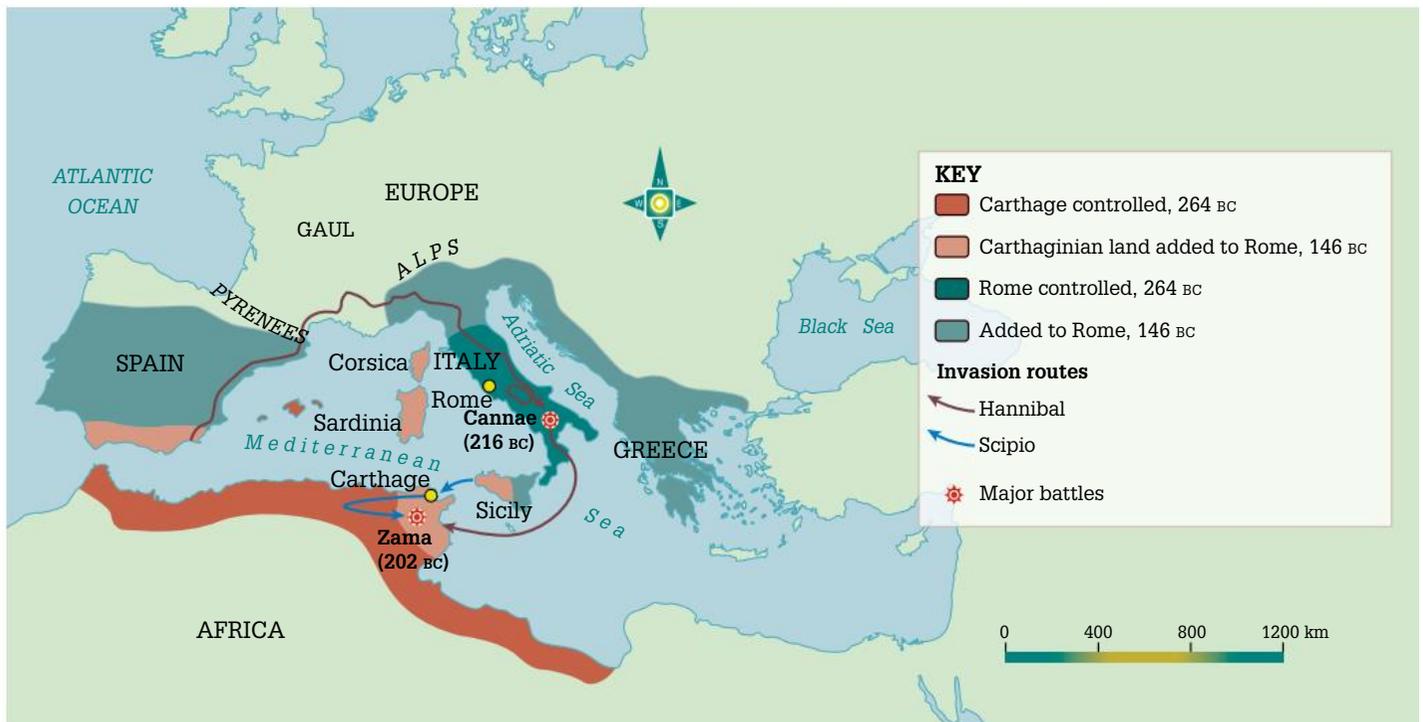
Source 12.6.1 Key routes and sites of the Punic Wars

A turning point

The Punic Wars represented an important turning point in Roman history. The Romans themselves considered it to be their finest hour. Fighting against the military genius of Carthage's general, Hannibal, made the Roman generals rethink the structure of the army, and how to best mobilise their resources and manpower. From this point onwards, Rome was able to sustain troops in the field anywhere in the Mediterranean in a way that no other ancient state had been able to do. Rome also gained a reputation for dealing harshly with states that broke treaties and thus caused long and costly wars.

The second Punic War

The Carthaginians and their generals did not give up easily. They provoked another war with Rome when the brilliant general Hannibal (see Source 12.6.2) captured the town of Saguntum on the Spanish peninsula. Both sides were ready for war and Rome had planned to fight it in Spain and Africa. However, Hannibal outmanoeuvred the Romans and marched his army from Spain through southern France and across the Alps into Italy. He crushed the Roman legions in a series of battles that ended in southern Italy, at Cannae. The defeat at Cannae was crushing, and Hannibal expected Rome to surrender.

The Roman response was immediate. Generals raised new legions and a talented young Roman general called Publius Cornelius Scipio took the war to Carthage (see Source 12.6.3). He invaded Africa and forced Hannibal to retreat from Italy. Carthage was defeated and forced to pay Rome a huge amount of money. Rome also annexed Spain, which was rich in copper, lead, tin, and gold and silver mines.

Source 12.6.2 A Roman coin featuring the head of Hannibal

Source 12.6.3 A 16th-century AD painting of the Battle of Zama in 202 BC, in which Scipio defeated Hannibal. Pushkin Museum, Moscow

The third Punic War

By 150 BC, however, Rome was looking for another opportunity to fight Carthage. It pushed Carthage into breaking the peace treaty and declared war. The Romans captured Carthage after a siege. By the final year of the war Rome had become so powerful in the Mediterranean region that it was fighting wars on two fronts—northern Africa and Greece. In 146 BC, Rome utterly destroyed the ancient cities of Carthage in northern Africa and Corinth in Greece, cementing Rome's position as the superpower of the Mediterranean region.

ACTIVITIES

Remembering and understanding

1   Refer to Source 12.6.1.
    a Where was Carthage located in relation to Rome?
    b Explain why both the Carthaginians and the Romans were interested in controlling Sicily, Sardinia and Corsica.

Applying and analysing

2   Assess what Rome gained from these long wars with the Carthaginians.

Evaluating and creating

3   Write a news report that examines the Roman victory at the end of the Punic Wars. Write it from either a Roman or a Carthaginian perspective.

Death and funerary customs

Belief in the afterlife

Ancient Romans valued the correct observation of funerary rituals because to do so ensured that the souls of the dead could reach the afterlife. The thousands of funerary portraits, monuments and inscriptions that survive in the archaeological record are evidence of the importance of the Roman belief in the afterlife. The Romans believed that the dead lived on in their tomb and that they could influence the fortunes of their surviving relatives. It was important to secure the good favour of the dead and offerings to the dead were therefore a crucial part of everyday life. Offerings could be made in front of images of the household ancestors or at their tombs.

The underworld

Romans believed that after death the soul was taken across the River Styx by Charon, the ferryman, to Hades or the underworld. Hades was located in the centre of the earth and was ruled by the god of death, Pluto. The entrance to the underworld was guarded by the three-headed dog Cerberus, who ensured that no souls could escape. In Hades, the souls were judged on their deeds (see Source 12.7.1).

Judgement	Type of people	Destination in the underworld
Good	Warriors and heroes	Elysian Fields or paradise
Neutral	Good, honest people	Plain of Asphodel
Bad	People who had committed bad deeds or had offended the gods	Tartarus or the Hall of Fury

Source 12.7.1 The judgement of souls

Funerary practices

Ancient Romans practised both cremation and inhumation (burial). These practices did vary over the 1000 years of Rome's existence.

Burials were conducted in cemeteries outside the city. Funerals ranged from simple rituals to elaborate and expensive public performances by rich patricians. At an expensive funeral there would have been professional mourning women, musicians and dancers. The public funeral procession also may have included a *laudatio*, a ceremony in which a funeral speech was read aloud while the deceased was displayed in an upright position. The poorer citizens belonged to a funeral club to help them afford funeral expenses. Whatever the social status of the deceased and their family, all burials at the grave site included various rites, which included the offering of food and drink to the deceased. The mourning period lasted for nine days, finishing with another feast.

Tombs

Tombs varied greatly and were often designed for more than one burial. Wealthy patricians could afford large and elaborate monuments. For example, the tomb of the wealthy magistrate Gaius Cestius is an impressive pyramid that was built at the end of the 1st century BC (see Source 12.7.2).

Catacombs

The Romans also built underground or rock-cut tombs called catacombs. These included a network of passages leading to burial chambers. The best-known catacombs are underneath St Peter's Basilica in Rome. Funeral clubs built collective tombs called *columbaria*, which translates as 'dovecotes'. The ashes of the deceased were placed in a little cupboard.

Source 12.7.2 The tomb of the magistrate Caius Cestius, in Rome, built between 18 and 12 BC

Source 12.7.3 The interior of the Columbarium of Pomponius Hylas, Rome, 1st century AD

Columbaria contain hundreds of these little cupboards (see Source 12.7.3). The deceased was buried with grave goods such as food, drink and lamps. Perfumes and gold rings signified the high status of the deceased.

Remembering the dead

Romans also valued rituals associated with remembering the dead. A family's public reputation was important in death as well as in life. The tombs that were built along the main roads leading in to Rome featured highly visible portraits and inscriptions (see Source 12.7.4). Patrician houses displayed bronze or stone portrait busts of the family ancestors. Sometimes these portraits included a list of achievements. There was a lot of family pride behind these displays. Funerary busts showing a deceased married couple were also popular. Even the poorest Romans were identified in death by simple inscriptions with the deceased's name. About three-quarters of the 250 000 Latin inscriptions that have been found are funerary inscriptions.

Source 12.7.4 A pair of ancient Roman marble funerary reliefs, 1st century BC or AD

Did you know?

Some Roman funerary portraits were more like masks made out of wax. They could be worn by the living members of the family during public funeral processions. Other portraits in marble were painted with bright colours.

ACTIVITIES

Remembering and understanding

1 Identify three examples of Roman funerary practices.
2 Explain the importance of funerary rituals to the Romans.

Applying and analysing

3 Interpret what archaeological evidence suggests about Roman burial practices, using Sources 12.7.2, 12.7.3 and 12.7.4 and information from this unit.

Significant individuals

Julius Caesar

Julius Caesar (100–44 BC) remains one of the best-known figures of ancient Rome, due to Greek and Roman writers who wrote about his life and achievements. The Roman historian Suetonius (c. 69–c. 122 AD) outlined Caesar's spectacular political career, during which he rose quickly through the magistracies, the consulship and finally to leadership of the extraordinary dictatorship. Caesar's achievements are also well documented by his own written accounts of his wars in Gaul (France).
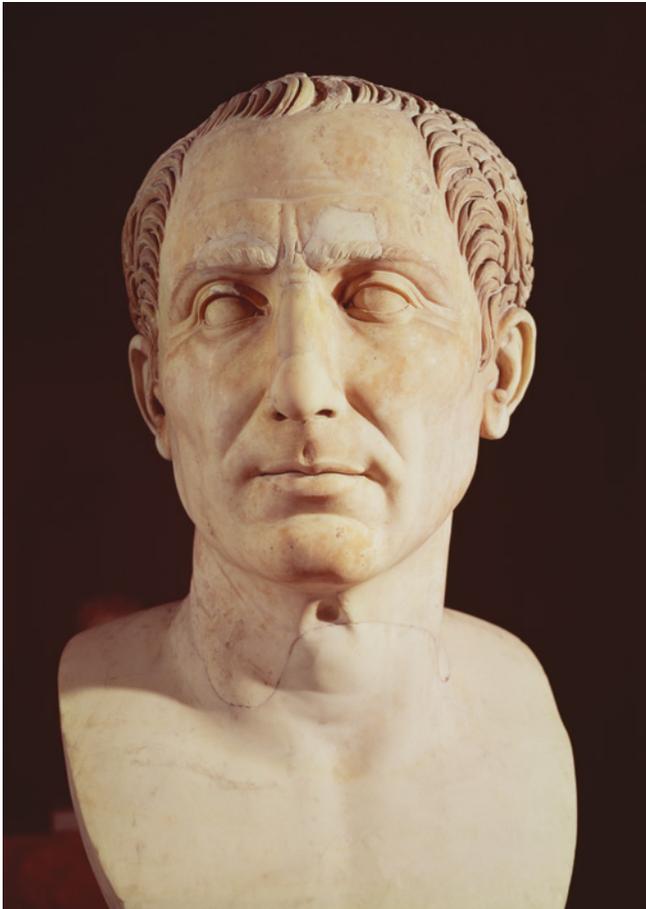
Source 12.8.1 A marble bust of Julius Caesar, 1st century BC. Museo e Gallerie Nazionali di Capodimonte, Naples

Caesar—the great general

The Greek historian Plutarch (c. 46–c. 120 AD) describes Caesar's ability as a general during his war against the tribes of Gaul between 58 and 52 BC (see Source 12.8.2).

For although it was not full ten years that he waged war in Gaul, he took by storm more than eight hundred cities, subdued three hundred nations, and fought pitched battles at different times with three million men, of whom he slew one million in hand to hand fighting and took as many more prisoners. His soldiers showed such good will and zeal in his service that those who in their previous campaigns had been in no way superior to others were invincible and irresistible in confronting every danger to enhance Caesar's fame.

Source 12.8.2 Extracts from 'Julius Caesar' in Plutarch's biographical series *Parallel Lives*

Caesar—the builder

As part of his role as leader of Rome, Caesar introduced a building program that was intended to repair the huge damage caused during the violence of the civil wars. He demolished the burnt-out remains of the old Senate House called the Curia and built a new one, the Curia Iulia. He commissioned a new building called the Basilica Iulia to house the law courts. He laid out a new forum (public square) also named after himself and dedicated a temple to the goddess Venus, the patron goddess of his family (see Source 12.8.3).
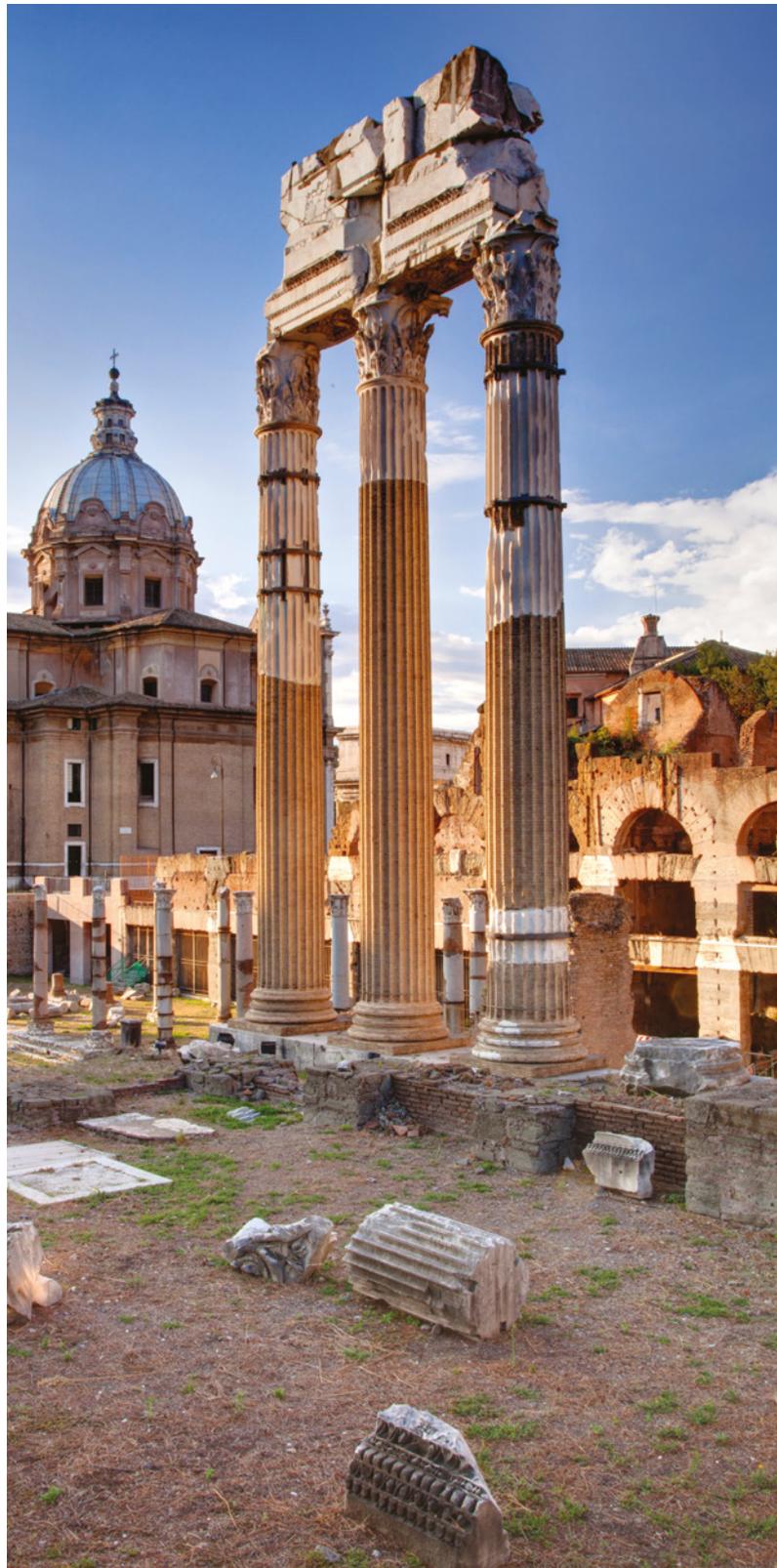
Caesar—the man

The Roman historian Suetonius wrote many biographies of famous Romans, including one of Julius Caesar, which gave a great insight into his deeds and character (see Source 12.8.4).

He was highly skilled in arms and horsemanship, and of incredible powers of endurance. On the march he headed his army, sometimes on horseback, but oftener on foot, bareheaded both in the heat of the sun and in rain. He covered great distances with incredible speed, making a hundred miles a day in a hired carriage and with little baggage, swimming the rivers which barred his path or crossing them on inflated skins, and very often arriving before the messengers sent to announce his coming …

… He is said to have been tall of stature, with a fair complexion, shapely limbs, a somewhat full face, and keen black eyes; sound of health, except that towards the end he was subject to sudden fainting fits and to nightmares as well. He was twice attacked by the falling sickness [thought to have been epilepsy] during his campaigns. He was somewhat overnice in the care of his person, being not only carefully trimmed and shaved, but even having superfluous hair plucked out, as some have charged; while his baldness was a disfigurement which troubled him greatly, since he found that it was often the subject of the gibes of his detractors. Because of it he used to comb forward his scanty locks from the crown of his head, and of all the honors voted him by the senate and people there was none which he received or made use of more gladly than the privilege of wearing a laurel wreath at all times.

Source 12.8.4 Description of Caesar by Roman historian Suetonius, in *De Vita Caesarum: Divus Iulius* (*On the Lives of the Caesars: the Deified Julius*), written c. 110 AD

Source 12.8.3 The archaeological remains of the Temple of Venus dedicated by Julius Caesar and the Roman Forum. The temple was built in 46 BC.

Caesar—a modern assessment

Historians of the modern period have read and interpreted the descriptions of Caesar written during the ancient world. As secondary sources, these modern perspectives importantly provide some objective assessment about Caesar and contribute to an ongoing debate about his personality, his achievements and his downfall. Source 12.8.5 is an example of one modern era historian's viewpoint of Julius Caesar.

Caesar's outstanding abilities are unquestioned. One of the world's greatest soldiers, he was also a writer of great distinction and an orator of the first rank. Urbane, cultured and courteous, he possessed a will of steel and an intensity of intellect that may have been reflected in his tall spare figure, his clear complexion and his lively dark eyes. An aristocratic by birth and nature, he had a true Roman sense of the practical: clear in purpose and swift in decision, he could be ruthless and coldblooded, but was more often clement and generous. The charm, as well as the force, of his personality captivated the loyalty of his troops and supporters, but awareness of his genius engendered in him a certain aloofness.

Source 12.8.5 A modern perspective of Caesar, in H. H. Scullard, *From the Gracchi to Nero: A History of Rome from 133 BC to AD 68*, first published in 1959

Augustus

Like his adopted father, Julius Caesar, Augustus (63 BC–14 AD) left behind a rich legacy of written and archaeological evidence. Augustus wanted to build a more beautiful Rome and to consolidate the empire. He brought peace to Rome and the end to civil war.

Augustus—the founder of a dynasty

The family of Augustus held an important political and social position in Roman society. The imperial household included his wife Livia, his adopted sons and his grandsons (see Source 12.8.6). It became increasingly important to Augustus to have a suitable successor.

Source 12.8.6 A relief from the Altar of Peace showing Augustus and his family in procession. This altar, dedicated to the Roman goddess of peace, was built in 13 BC in honour of Augustus, to celebrate the peace following his military victories in Spain and Gaul.

Augustus—father of his country

Augustus was not only the spiritual leader of Rome in his role as Pontifex Maximus (see Source 12.8.7), but he was also given the title of Father of Rome in 2 BC as Augustus records in his writings (see Source 12.8.8).

A statue of Augustus in religious mode, as Pontifex Maximus, with his head veiled for a sacrifice (c. 12 BC), National Museum of Rome

.. ..

In my thirteenth consulship the senate, the equestrian order and the whole people of Rome gave me the title of Father of my Country, and resolved that this should be inscribed in the porch of my house and in the Curia Julia and in the Forum Augustum below the chariot which had been set there in my honour by decree of the senate.

.. ..

Source 12.8.8 Augustus describes how he was given the title 'Father of my Country', in *Res Gestae Divi August* (*The Deeds of the Divine Augustus*)

The golden age of Rome

Augustus's reign as emperor has been regarded as a golden age for Rome. He restored the **Pax Romana** (Roman peace), which enabled the economy, the arts and agriculture to thrive. Augustus initiated an impressive building program, whereby he completed the buildings planned by Julius Caesar and then built his own grand buildings.

Augustus himself claimed (in his book *Res Gestae Divi Augusti*, which translates as 'The Deeds of the Divine Augustus') that in one year alone he restored or built 82 temples. He also ordered the construction of the now famous public baths of Rome. Augustus took great personal concern in the arts and was a personal patron of many artists, such as the poet Virgil, who completed his epic, the *Aeneid*, during this period. Augustus also passed many sweeping law reforms to maintain the stability of Rome through stable marriages and an increase of the birth rate in Rome. He made adultery illegal and offered tax incentives to families with more than three children and penalties for childless marriages. So strictly did Augustus himself adhere to his laws that he banished his own daughter, Julia, and his granddaughter for adultery.

ACTIVITIES

Remembering and understanding

1 Examine Sources 12.8.1 and 12.8.2 carefully. What aspects of Caesar's role in Rome do they share?
2 Choose three words that capture the essence of Scullard's perspective of Caesar. Justify your choice.
3 **a** List Augustus's achievements as first emperor of Rome.
   b Explain why his reign was called 'the golden age of Rome'.

Applying and analysing

4 Sketch a portrait of Julius Caesar based on Suetonius's description of him in Source 12.8.4.
5 What do Sources 12.8.6 to 12.8.8 reveal about how Augustus wanted to represent himself and his family?

Evaluating and creating

6 Formulate a hypothesis that would explain why both Julius Caesar and Augustus wanted to repair and add more buildings to the city of Rome.
7 Construct a Venn diagram to compare and contrast the achievements of Julius Caesar and Augustus.

Inquiry tasks

Designing a new Roman Forum

Imagine you are a project manager of a big construction company employed by Emperor Augustus. He wants to make the Roman Forum beautiful for the people of Rome; however, he is not sure where to begin.

Prepare a poster for Augustus showing the buildings that already exist in the forum, with its recent additions by Julius Caesar.

Use the following steps to guide you through this activity:

- Research the buildings that were part of the forum during the time of the Roman republic.
- Research the building program of Julius Caesar. Identify buildings such as the Basilica Iulia and the Temple of Venus Genetrix.
- Collect images that are either 3-D reconstructions or illustrations of reconstructed buildings. You will be able to find these on the internet.
- Present your findings in a well-illustrated and labelled poster. It should include plans of the forum and images of buildings.

Roman battle formations

The Romans developed one of the most advanced and skilful armies of its time. The infantry were trained in clever battle formations to gain superiority over enemy attacks. Some commonly used tactics were the orb, the wedge, the tortoise, the single line formation, the cannae tactic, roll up the line tactic, the square formation and others.

Select three of these battle formations to research, investigating:

- what the formation looked like
- how it was carried out
- under what situations the formation was used
- the advantages and disadvantages of using the formation
- actual situations where the formation was used by the Roman army.

Source 12.9.1 The Roman Forum

You may present your findings in one of the following ways:

- audio visual display
- role-play (if completed as a group task)
- oral presentation
- electronic slide show.

Reconstructing the past

Historians can only reconstruct the past based on the facts as they appear in written sources or in archaeological evidence. This may mean that they know quite a lot about some events, but not much about others.

Choose an event from the following list:

- Romulus becoming Rome's first king
- Hannibal's journey across the Alps to Rome
- The fall of Rome by 476 AD
- The assassination of Julius Caesar.

Conduct some research using your library or the internet. Complete the following scaffold to reflect your understanding:

- My hypothesis about what actually happened is …
- I think it occurred because …
- After I gathered some evidence, I found …
- As a result of conducting this inquiry, I learnt …

GLOSSARY

agricultural plain an extensive area of level or rolling treeless land

equites wealthy plebeians who were involved in commerce and finance

freedmen/freedwomen slaves who were granted freedom by their master

imperium power and authority originally given by the Roman gods to the kings

monarchy a system of government in which there is a king or queen

patricians the old noble families of Rome

Pax Romana a long peace within the Roman Empire that lasted for nearly 200 years

peninsula a portion of land nearly surrounded by water; a peninsula is connected to the mainland

plebeians the common people of Rome

princeps the first (most important) citizen of Rome

republic a system of government in which the public is involved

Ancient India

Ancient Indian civilisation began in about 2600 BC in the valley of the Indus River. Ancient India was characterised by sophisticated thought, beautiful art, power and wealth, and the diversity of its population and culture. From this culture developed the great Indian religions of Hinduism, Buddhism and Jainism. Significant advances were made in mathematics, astronomy and medicine.

Source 13.0.1 One of the four gateways to the Great Stupa at Sanchi. The stupa itself (the dome in the background) was commissioned by the famous Indian ruler Ashoka in the 3rd century BC.

4000 BC	First settlements in the Indus Valley
2600 BC	Great cities of the Indus Valley civilisation established
2300 BC	Harappa flourishes
1750 BC	Harappa declines
1400 BC	Aryans from the north-west begin to arrive over the Hindu Kush, bringing the Vedas
900 BC	Indo-Aryan tribes begin to move east along the alluvial plain of the Ganges
700 BC	Brahmanas completed
600 BC	Vedas are first written down
563 BC	Buddha is born
540 BC	Vardhamana Mahavira is born
500 BC	Vedanta Upanishads completed
483 BC	Buddha dies
468 BC	Vardhamana Mahavira dies
324 BC	Chandragupta Maurya comes to power
300 BC	*Ramayana* is completed
269 BC	Ashoka comes to power
1 AD	
200 AD	*Sangams* (colleges) of Madura flourish

Source 13.0.2
A timeline of ancient India

Geography of ancient India

Setting and natural features

Ancient India occupied territory that is now part of modern-day India, Pakistan and Bangladesh (see Source 13.1.3). India's three major zones contain nearly every kind of topography, climate and landform (see Source 13.1.1).

Northern India
The mountains in the north provide protection from invaders and Arctic winds. Himalayan ice and snow from this area provides water and silt for the alluvial plains further south.
Central India
The centre's giant alluvial plain, which is covered in nutrient-rich sediment, receives the seasonal monsoon rains. It is the home of the Indus River (after which India is named) and 'Mother Ganga', or the Ganges, India's most important river. The Ganges is worshipped as a goddess by Hindus.
Southern India
The large mountain mass in the south may originally have been part of East Africa. It forms a natural barrier between northern and southern India. Much of southern India experiences drought as it is dependent on rain for water.

Source 13.1.1 India's three major geographical zones

Geography shaping history

India's unique geography influenced the development of ancient Indian civilisation.

Earliest human traces

The earliest trace of human habitation in India can be seen in flakes of stone found in the Soan Valley in northern India. The men and women who produced these flakes migrated over the Hindu Kush or Himalayan mountains into India between 100 000 and 60 000 BC.

Source 13.1.2 The Nilgiri Hills, part of the Western Ghats, a mountain range in south-west India

Indus Valley settlement and civilisation

During the fourth millennium BC, settlements in the Indus Valley were established. The Indus Valley plain is very similar to the Nile Valley of ancient Egypt and the Tigris–Euphrates Valley of ancient Sumer. Natural fertiliser was deposited in the form of silt from the annual flooding of the Indus River.

Different crops were grown in different areas: the western plain was suitable for rice cultivation; on the eastern plain and in northern Punjab, wheat, barley and millet were grown. By 2600 BC, these early settlements had developed into the great cities of the Indus Valley civilisation—Harappa, Mohenjo-Daro, Kalibangan and Lothal—and they flourished for the next 900 years.

Iron and its impact

India's geography also influenced the settlement of central and eastern India. In the 10th century BC, Indo-Aryan tribes began to move eastwards along the alluvial plain of the Ganges. As the area was covered in thick jungle, iron tools like axes and ploughs were needed to clear the growth and plough the rich soil. This had not been possible beforehand as the Indo-Aryans did not know about iron.
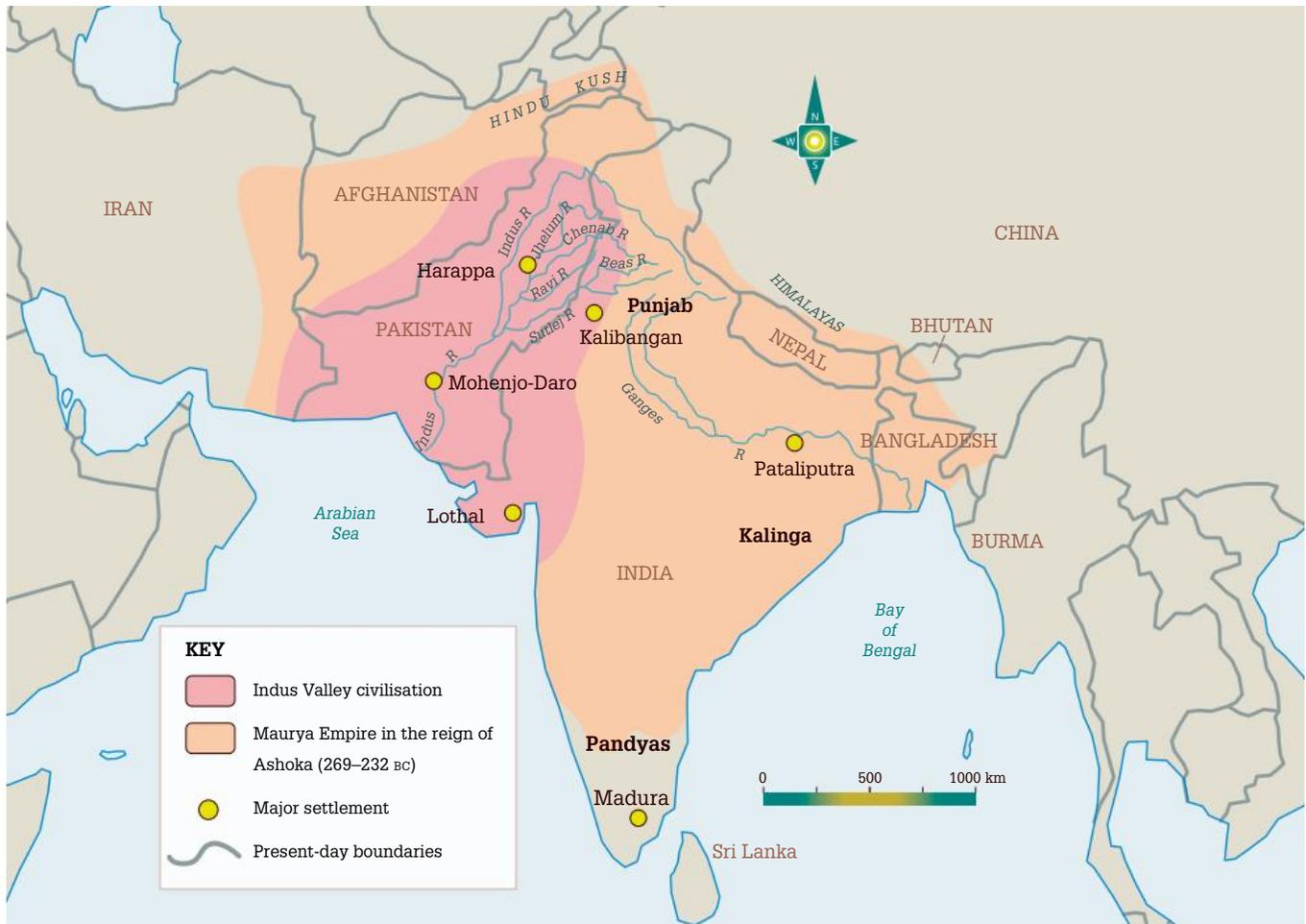
Source 13.1.3 Ancient India

Did you know?

Archaeological evidence suggests that Harappa declined after about 1750 BC. Houses became smaller, and the quality of pottery and drainage systems deteriorated. At Mohenjo-Daro, houses were abandoned, and jewellery and precious objects were found hidden in elevated places; some skeletons were found trapped under rubble. An early theory was that Aryan invaders from the north overran the cities. More recent theories suggest plate movements in the earth's crust caused catastrophic flooding, permanently altering the course of waterways, including the Indus River. Unable to grow crops, people abandoned their homes and moved elsewhere.

ACTIVITIES

Remembering and understanding

1   List the three modern-day countries which were once part of ancient India.
2   Outline how the discovery of iron influenced the settlement of ancient India.

Applying and analysing

3   Distinguish between each of the three major Indian geographic zones by completing a Y-chart for each. In each section of your Y-chart, write the headings: 'Looks like', 'Feels like', 'Sounds like'.

Evaluating and creating

4   Locate the regions of Punjab and Kalinga on Source 13.1.3. If an ancient Indian person wanted to establish a new settlement, which of these two regions would be a better choice for that settlement? Explain why.

Key groups in ancient Indian society

Aryan migration

The chief form of social organisation in ancient India started to develop from about 1400 BC when a group of peoples known as **Aryans** (meaning noble or high-born) began arriving in India via the Hindu Kush mountains to the north-west. They brought what is referred to as 'Vedic culture' with them, a culture from which Hinduism, Jainism and Buddhism later sprang.

The Aryans established small hereditary kingdoms and inhabited the 'Land of the Seven Rivers'. These rivers were the Jhelum, Chenab, Ravi, Beas, Sutlej, Indus and Sarasvati.

The Vedas

There is very little archaeological evidence for this period of Indian history. Historians must rely on the sacred books known as the Vedas. It was not until about 600 BC that the Vedas were written down; before then, they were transmitted orally.

Aryan political, social and economic life

The Aryans who crossed into India lived in tribal groupings called *janas*. Each tribe had a **raja** (king), **Brahmans** (priests) and *vish* (commoners). The role of Brahmans was particularly important—they were responsible for memorising Vedic hymns and performing sacrifices. Although each Aryan tribe was self-governing, they were united against non-Aryan 'dark' enemies called *dasas*.

The Aryans rode chariots harnessed to horses and used weapons such as the bronze axe and longbow. Chariot-racing was the leading sport. They also loved music, wine and gambling.

Aryan families

Aryan families were patriarchal (controlled by the father). Sons were prized. They helped care for the herds, could bring honour in battle, and were the only ones who could carry out a father's funeral correctly. Daughters were not valued in

Source 13.2.1 An ancient battle scene, taken from the epic *Razmnameh* (one of the two great Vedic epics), which shows two great Aryan warriors, Arjuna and Bhishma, in their war chariots attacking one another (centre left and right). Below, more charioted horses are waiting, while a group of horsemen, sounding a trumpet and drum, stand in the top right corner. However, the armour is 16th-century Mughal, which reflects the date of the painting, c. 1598 AD. British Museum, London

Aryan society. This was mainly because when they married, their families would have to pay a dowry to the groom's family (usually in the form of money, jewellery, household goods and cattle).

A class system

Over the next 400 years, Aryans became Indo-Aryans. They were no longer just nomadic herders, but also farmers. Their economy had changed as well. The social structure became more complex as they conquered new peoples.

The new system saw rajas rule with the assistance of Kshatriyas (warriors) and household elders. Rajas were also expected to seek advice from **rishis** or sages (holy wise men). Everyone in Indo-Aryan society became members of one of four ***varnas*** (classes), sometimes called 'castes'. Each *varna* was ranked, and associated with a colour and a part of the male body (see Source 13.2.2).

Varna	Name	Colour	Part of body
First	Brahmans (priests)	white	head
Second	Kshatriyas (warriors and rulers)	red	arms
Third	Vaisyas (merchants)	brown	thighs
Fourth	Sudras (farmers, craftsmen and labourers)	black	feet

Source 13.2.2 The four *varnas*

Did you know?

The Horse Sacrifice was an important ritual performed by rajas in this period. To increase a raja's realm and also prove his prowess, a great white stallion was allowed to wander freely for a year. A troop of royal horsemen followed the horse and claimed any land looked at or trodden on by the horse. The horse was then driven home: the horsemen pretended to mate it with the raja's wives, then killed and quartered it.

SUDRAS

The lowest class was not permitted to hear or study the Vedas. In fact, later Vedic legal texts prescribe pouring molten lead into the ears of any sudra caught listening to the Vedas!

Sudras were involved in manual labour, in occupations like carpenters, wheelwrights, blacksmiths, weavers, spinners, farmers and herders. Most historians believe the sudras were the pre-Aryan occupants of the land. The colour associated with their *varna*—black—may refer to their darker skin tone.

THE UNTOUCHABLES

As more peoples were subjected to Indo-Aryan rule, an even lower *varna* than sudras was created. This group was known as 'fifths' or 'untouchables'. The untouchables could only work as butchers, tanners, latrine diggers and the like. Such occupations were considered spiritually polluting.

JATI

All Indo-Aryans were also part of a birth group called a *jati*, which means 'thus born'. *Jati* may refer to the community, occupation or tribe a person is born into.

ACTIVITIES

Remembering and understanding

1 Write a paragraph explaining the difference between *varna* and *jati*.
2 Explain why daughters were not valued in Aryan society.

Applying and analysing

3 Draw a simple cartoon strip or storyboard that illustrates the Horse Sacrifice.
4 Draw a graphic representation of the early Aryan social structure. Next to it, draw a graphic representation of the later Indo-Aryan social structure. Annotate the representations to show key similarities and differences.
5 Using a PMI table, analyse the Indo-Aryan class system. Consider views and values of the time, and views and values today.

Evaluating and creating

6 Examine Source 13.2.1. How reliable is this as a historical source about the Aryan period? Explain your response.

Government and law

Ashoka and the law

Historians have a clear insight into ancient Indian law due to the series of edicts (pronouncements) of Ashoka (ruled 269–232 BC), the grandson of the great Indian king, Chandragupta Maurya (ruled 324–301 BC). Ashoka had these edicts carved into great rocks and sandstone pillars. They were first translated by James Princep, an English scholar and assay master of the British Mint in Banaras (Varanasi), in 1837 AD. More than 5000 words were carved into the 18 rocks and 30 pillars that have survived (see Source 13.3.2).

The pillar edicts

These edicts covered many aspects of ancient Indian life and law (see Source 13.3.1).

Both this world and the other are hard to reach, except by great love of the law, great self-examination, great obedience, great respect, great energy … this is my rule: government by the law, administration according to the law, gratification of my subjects under the law, and protection through the law.

Source 13.3.1 One of Ashoka's edicts, from S. Wolpert, *A New History of India*, Oxford University Press, New York, 2004

Other advice included 'listen to mother and father', 'practise liberality [kindness] to friends, relations, brahmans and ascetics', and 'abstain from the slaughter of living creatures'.

Prisoners

Pillar edict four details Ashoka's ruling on those in prison (see Source 13.3.3).
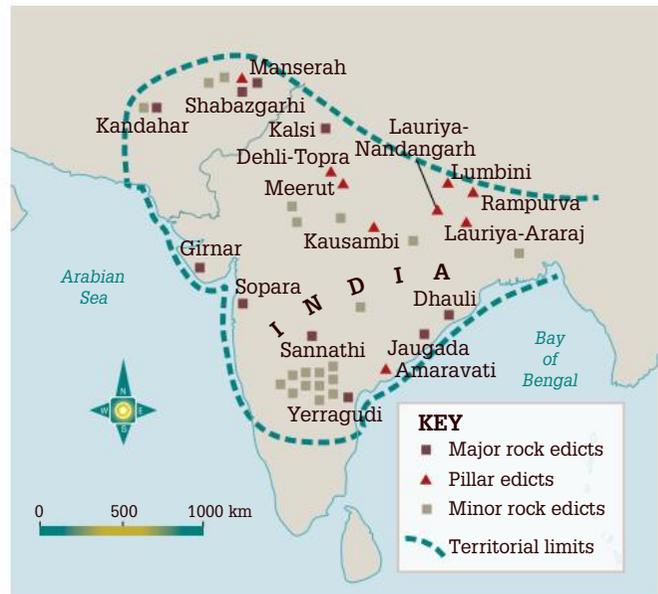
Source 13.3.2 The location of the surviving edicts of Ashoka

It is my desire that there should be uniformity in law and uniformity in sentencing. I even go this far, to grant a three-day stay for those in prison who have been tried and sentenced to death. During this time their relatives can make appeals to have the prisoners' lives spared. If there is none to appeal on their behalf, the prisoners can give gifts in order to make merit for the next world, or observe fasts.

Source 13.3.3 Ashoka's pillar edict four, from C. Allen, *Ashoka: The Search for India's Lost Emperor*, Hachette Digital, London

The wheel of law

In the view of many historians, as well as ordinary Indians today, Ashoka was the first true emperor and *chakravartin* ('he for whom the wheel of law turns') of India.

Ashoka's most famous pillar edict is called the 'Four Lions of Sarnath' (see Source 13.3.4). On the pillar, the lions support a stone wheel—the wheel of law. This wheel is known commonly as 'Ashoka's wheel' and it adorns the centre of the national flag of India.

Source 13.3.4 The Four Lions of Sarnath pillar, Sarnath Museum

Where did Ashoka's philosophy come from?

The first eight years of Ashoka's reign were relatively unremarkable. Like his father, Ashoka worked hard to consolidate and expand Mauryan power. In his ninth year as ruler, however, Ashoka ordered his armies to invade Kalinga, a kingdom south of Magadha. Kalinga was only able to be subdued after a bloody war. The war was so bloody that Ashoka experienced deep remorse and on the battlefield resolved to follow Buddha's law of non-violence.

Legacy

The legacy of Ashoka and his philosophy can be seen in modern India by examining the Indian flag. The central emblem on the flag is the Wheel of Ashoka, which symbolises Ashoka's philosophy that 'Truth must guide conduct'.

ACTIVITIES

Remembering and understanding

1 a How many of Ashoka's edicts survived?
   b Who enabled them to be understood?
   c When was this?
2 According to the pillar edicts, who or what are protected under Ashoka's law? Use dot points in your answer.

Applying and analysing

3 Explain how Source 13.3.5 shows the importance of Ashoka's wheel of law in modern Indian culture.

Evaluating and creating

4 a Using Ashoka's edicts as a guide, write four pillar edicts that you would like placed around your school.
   b Explain the reason for each of your four pillar edicts.

Source 13.3.5 A wall painting depicting Indian cricketers Sourav Ganguly, Rahul Dravid and Sachin Tendulkar superimposed on Ashoka's wheel

Religion

The Vedas

There is very little archaeological evidence for the earliest period of ancient Indian history. Historians must rely on a large body of religious texts written in Sanskrit called the Vedas. It was not until about 600 BC that the Vedas were written down—before then, they were transmitted orally. The great Indian religions of Hinduism, Buddhism and Jainism have their origins in the Vedas.

The *Rig Veda*

The oldest Veda is the *Rig Veda*. It consists of 1017 Sanskrit poems addressed to various Aryan gods. Historians usually group the *Rig Veda* with three other ancient collections of poems—the *Sama Veda*, the *Yajur Veda* and the *Atharva Veda*. Commentaries on the Vedas were produced between 1000 and 700 BC. These commentaries are called the Brahmanas.

Gods

Ancient Indians worshipped many gods—33 are mentioned in the *Rig Veda*. In the early period of ancient Indian history the most powerful gods were Indra, Varuna, Agni and Soma. In the later period of ancient Indian history the most powerful gods were the Hindu gods **Vishnu** and **Shiva**.

Worship

Ordinary religious worship occurred in the home. Sacrifices were typically of *soma*, ghee (clarified butter) or some other treat. Such offerings were used to secure favour or to preserve *dharma* (universal order).

Demons

Ancient Indians believed that demons were responsible for all the ills of society, including floods, droughts and famine. Demons could be seen in prowling tigers, mad elephants and mosquitoes. This obsession with demons made Brahmans very important and powerful.

He who has 'spread out the earth, as a butcher does the hide, by way of a carpet for the sun … extended the air above the trees … put strength in horses, milk in cows, willpower in hearts, fire in waters, the sun in heaven, and soma upon the mountain'.

Source 13.4.1 The *Rig Veda* on Varuna, from S. Wolpert, *A New History of India*, Oxford University Press, New York, 2004

Source 13.4.2 Agni, god of fire. In this sculpture, Agni is shown with two heads and four hands; he sits on a ram. Agni's two heads symbolise his two sides—destructive and generous. Agni also has seven tongues, which he uses to lick ghee.

The Upanishad sages

By about 700 BC, sages began to question the power and authority of the Brahmans. They were unhappy about resources being wasted in elaborate rituals. They observed that rich men and rajas died just like poor men, so what was the benefit of frequent sacrifices? These sages began to preach—as **gurus**—to disciples in forest seminars. Their ideas were written down and formed the Vedanta Upanishads, of which 108 have survived.

Key ideas
MOKSHA

These gurus did not reject the *Rig Veda* or the Brahmanas, but they did propose a different path to **moksha** (release). The key to achieving moksha was attaining freedom from desire. As King Brihadratha, the hermit-sage, put it, 'in this ill-smelling, unsubstantial body, which is a conglomerate of bone, skins, muscle, marrow, flesh, semen, blood, mucus, tears, rheum, faeces, urine, wind, bile, and phlegm, what is the good of enjoyment of desires?'
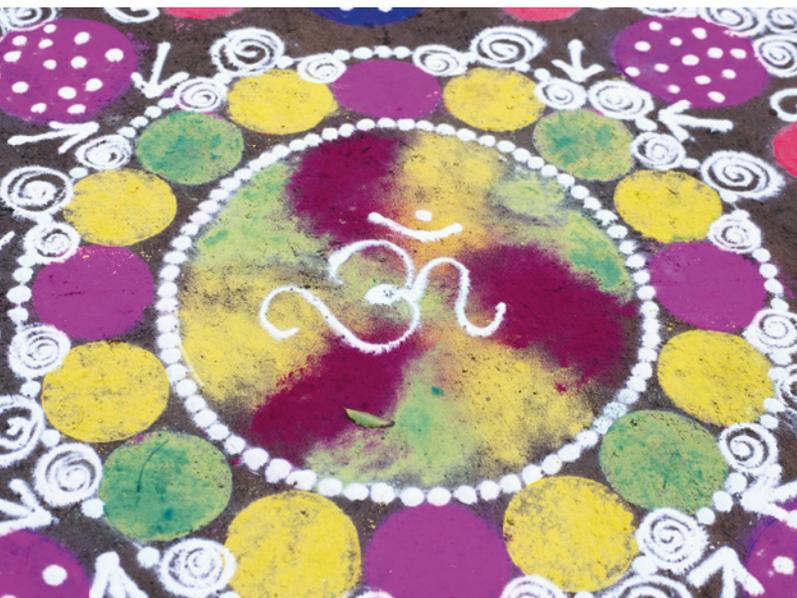
Source 13.4.3 Aum (or om)—the symbol sacred to Hindus, Buddhists and Jains—is shown here in the centre of a traditional *rangoli* prepared for a Hindu ceremony. *Rangoli* are a form of Indian folk art. They are made on the floors of living rooms and courtyards, and serve as welcoming areas for the gods.

ATMAN

For the Upanishad mystics, the secret of immortality was understanding the reality of **atman** (the individual soul). For them, atman was the same as Brahman, the single source of all creation.

Other philosophical ideas in the Upanishads included:

- *samsara*—awareness of the endless cycle of existence; of birth, death, rebirth and so on, which occurs as long as one has not achieved moksha
- *karma*—awareness that all actions have repercussions, and that we are a product of all our past actions.

Buddhism

Buddhism was founded in India during the time of the Vedanta Upanishads. Buddhism is named after its founder, Buddha. Before achieving enlightenment, Buddha was known as Siddhartha Gautama.

Siddhartha Gautama was born into a life of luxury and ease in 563 BC as the son of a northern Indo-Aryan king. At the age of 30 he abandoned family and wealth to become a wandering hermit in the woods. While sitting under a pipal tree, Siddhartha Gautama achieved enlightenment (nirvana).

The Four Noble Truths

At the heart of Buddha's philosophy were the 'Four Noble Truths':

1 Suffering is inevitable.

2 Ignorance is the basic cause of suffering.

3 Any ailment, when understood, can be cured.

4 There is an eight-fold path to the elimination of suffering—holding and practising right views, right aspirations, right speech, right conduct, right livelihood, right effort, right mindfulness and right meditation.

Buddha's forest *Sangha*

Buddha spent 45 years teaching disciples in his forest *Sangha* (monastic order). In his lifetime, only monks could join the order. This was because Buddha was concerned about the negative influence of nuns on monks. Monks had to commit to chastity, poverty and non-violence. This included abandoning all family ties and any prospect of marriage and children. It also included begging for food each day. Monks' heads were shaved. They wore saffron robes and went barefoot.

Buddha's death

Buddha died, aged 80, in about 483 BC. His final message to his disciples was, 'You must be your own lamps, be your own refuges. Take refuge in nothing outside yourselves. Hold firm to the truth. Whoever among my monks does this will reach the summit.'

Jainism

Jainism was founded by Vardhamana Mahavira (c. 599–527 BC). Like Siddhartha Gautama, Mahavira was the Kshatriya son of a king who abandoned his privileged life at the age of 30.

Mahavira spent the next 10 years with a sect of ascetics who practised nudism. They labelled him *jina* (conqueror) because of his amazing self-control. Mahavira advocated self-torture and death by starvation: he actually starved himself to death over 13 years, taking less food each year!

Jains (followers of *jina*) accept two core doctrines:

- *All of nature is alive.* This includes rocks, earthworms, men and gods, all of whom have some form of soul (*jiva*).
- *Ahimsa (non-violence).* This is a total prohibition on taking life. To ensure that nothing was harmed, Jains wore face masks (so they would not accidentally swallow a fly) and gently swept the ground in front of them as they walked (so they would not accidentally step on an ant).

Hinduism

Hinduism, Buddhism and Jainism all have their origins in the Vedas, and draw insights and inspiration from the Brahmanas and Upanishads. While Buddhism and Jainism were founded by key individuals, Hinduism developed in a different way. Hinduism produced great epic poems such as *The Mahabharata* and *Ramayana*. These texts further shaped ancient Indian thought about worship, duty, suffering, death, law and justice. By the 2nd century AD, Hinduism had developed into a form we would recognise today, with personal devotion to the Hindu gods Vishnu and Shiva.

ACTIVITIES

Remembering and understanding

1. Identify the most powerful gods in the early period of ancient Indian history. Relate the key characteristics, habits or areas of influence of two of them.
2. In a paragraph, discuss the ancient Indian attitude to demons, including why they might have been associated with floods, droughts, famine, tigers, mad elephants and mosquitoes.
3. List the main philosophical ideas associated with the Upanishad sages, including one key fact about each.

Applying and analysing

4. Create a mind map that presents your understandings, thoughts, opinions and questions about Vardhamana Mahavira and Jainism. Use sketches, colours, symbols and short labels to illustrate your ideas.
5. Ancient Indian religion changed over time. Create a timeline that illustrates this, noting key events and ideas as they developed. Add a paragraph below your timeline that summarises the changes and provides at least two reasons for them.

Evaluating and creating

6. Write two modern examples of what Buddha might have meant by 'right views, right aspirations, right speech, right conduct, right livelihood, right effort, right mindfulness and right meditation'.

Source 13.4.4 A group of ascetics (religious people who practise austerity or self-denial) sitting under a banyan tree. This painting dates from 1630 AD. British Museum, London
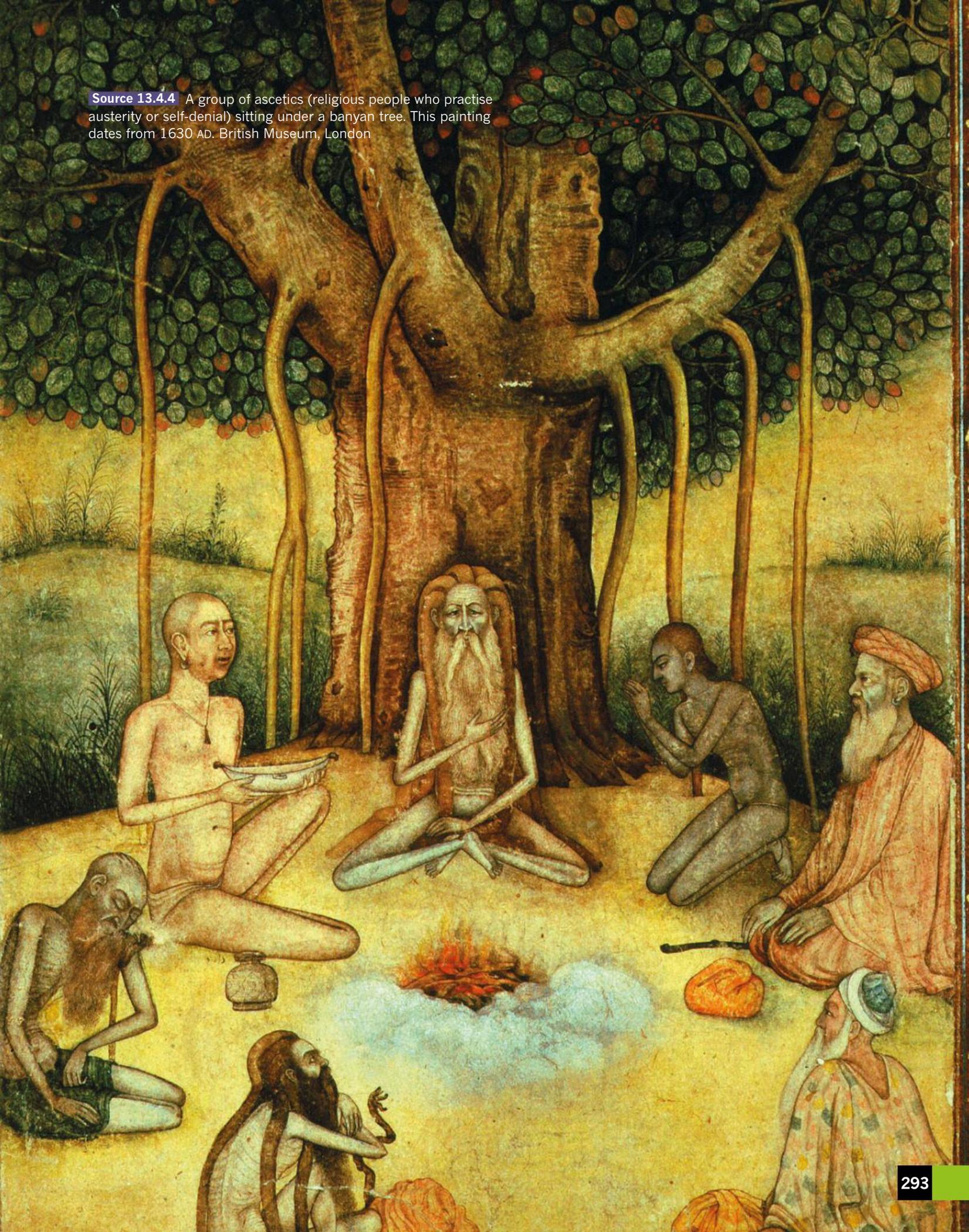
Everyday life

Southern India had remained isolated from most of the political developments in India's north due to a large mountain mass that formed an effective natural barrier to communication. As a result, the Tamil kingdoms of southern India developed cultures that were unique in several ways.

Madura

The Pandyas were one of the southern Indian kingdoms. They had their capital at Madura. Several *sangams* (colleges) flourished at Madura from the 2nd century AD.

Up to 500 poets at a time are said to have studied at Madura's colleges. Two thousand of their poems have been preserved and collected into nine books. These poems tell us a lot about life in southern India. For example, Tamils were divided into five castes based on where they were born and lived. There were:

- hill people
- plains people
- forest folk
- desert folk
- coastal folk.

Each of these five castes was subdivided into occupational groupings—so, for example, coastal folk could be pearl divers, fisherfolk or boatmakers.

Tamil families were matriarchal (ruled by mother) and matrilineal (descent traced through the female line), unlike much of the rest of ancient India.

Foreign trade

Hundreds of Roman coins have been found by archaeologists in southern Indian ports. From these ports, Indians exported ivory, onyx, cotton goods, silks, pepper and other spices (see Source 13.5.1), and precious stones.

Southern India was famed for its pearls and precious jewels. The Romans paid for these goods in copper, tin, antimony (a type of metal) and wine.

By this period in ancient Indian history, trade routes were crisscrossing India. These routes were regularly traversed by caravans of camels, oxen and donkeys.

Source 13.5.1 Some of the spices still plentiful in India

The shreni

Shreni were the artisan or merchant guilds, who prospered most from trade between India, China and Rome. *Shreni* had responsibility for maintaining public order, and for establishing and enforcing legal regulations governing the commercial conduct of guild members.

The growth in Indian commerce saw an increase in the number of Indian bankers and financiers. Interest rates were high—between 15 and 240 per cent—but the risks of trade and travel over long distances were also high.

Currency

Coin-based trade expanded at this time. Gold and silver coins were used, identical in weight to the Roman denarius. Copper coins and cowry shells were also used as currency. All of this activity took place in the cities, while village and rural economies continued to engage in non-monetary transactions.

The four transitions

Hindu legal texts of this period wrote of the four 'transitions' or stages of every man's life (see Source 13.5.3). These stages were only available to the first three *varnas*.

Source 13.5.2 Obverse (main side) of a Mauryan silver coin from 3rd century BC, punchmarked with five symbols: sun, chakra, bull, dog on hill and elephant. British Museum, London

Stage	Description
1 Celibate student	• is invested with the sacred thread (6 to 12 years old) • leaves parents and home to live with a guru • learns the Vedas and also phonetics, grammar, prosody (poetic form), astrology and etymology (the origin of words)
2 Householder	• returns home and is ritually bathed • has a duty to start a family and enjoy life, including sexual enjoyment • moves to the next stage when a grandson is born, ensuring the bloodline continues
3 Forest dweller	• dresses and lives as a hermit • leaves home and all possessions, but his wife is permitted to accompany him if she wants to
4 Wandering ascetic (**sannyasin**)	• abandons his wife • must be homeless, bondless and isolated • must sever all links in preparation for death • has the potential to reach moksha at this stage

Source 13.5.3 The four transisitions

Women

Ancient Indian women were expected to conform to the 'ideal wife' presented in the epic poem *Ramayana*, written in about the 4th century BC. According to the *Ramayana*, it is Sita's duty as a wife to follow her husband, Rama, into his forest exile (see Source 13.5.4).

• ....

For the faithful woman follows where her
wedded lord may lead,
In the banishment of Rama, Sita's exile is
decreed,
Sire nor son nor loving brother rules the
wedded woman's state,
With her lord she falls or rises, with her
consort courts her fate,
If the righteous son of Raghu wends to forests
dark and drear,
Sita steps before her husband wild and thorny
path to clear!

• ....

Source 13.5.4 Extract from the *Ramayana* describing a wife's duty to her husband, from R. C. Dutt, *The Ramayama and the Mahabharata: Condensed into English Verse*, J. M. Dent, London, 1917

Vishnu and Shiva

Personal devotion to either Vishnu or Shiva (now the two primary Hindu gods) was common at this time. Source 13.5.5 outlines the key roles and characteristics of the two deities (gods).

Deity	Role	Key facts
Vishnu	The divine saviour of humans	Has nine avatars (manifestations): • fish • tortoise • boar • man-lion • dwarf • Rama with an axe • Rama as the hero of the *Ramayana* • Krishna • Buddha
Shiva (known as Lord Shiva)	• The creator and destroyer of life • The lord of beasts • The king of dance	Is always accompanied by a Hindu goddess—Parvati, Sati, Kali or Durga. Is usually shown with up to 10 features: • third eye • blue throat • crescent moon • matted hair • ashes • tiger skin • serpent • trident • drum • bull. In Hindu myth, the fast-moving waters of the Ganges River were calmed when Shiva agreed to run the waters through his long, matted hair.

Source 13.5.5 Key roles and characteristics of Vishnu and Shiva

ACTIVITIES

Remembering and understanding

1 List four key facts about the contact and trade between ancient Indians and ancient Romans in southern India.
2 Who were the *shreni*? Discuss their importance to the ancient Indian economies of the south.
3 Create a concept map that covers the key attributes (qualities and features) of Shiva and Vishnu. Use information from the text, but also what you see in Source 13.5.6.

Applying and analysing

4 Based on the information in this unit, what seems to be unique about life in southern India? List three things and explain each.
5 Re-read Source 13.5.4 and describe in your own words the attributes of the 'ideal wife' in ancient Indian scripture.

Evaluating and creating

6 Work in a small group to write and perform a play of four scenes dramatising the 'four transitions' of a man's life.

Source 13.5.6 A modern representation of Vishnu. Vishnu is the colour of clouds (blue) and has four arms. He is commonly shown holding a conch (large seashell), mace (decorated staff), wheel or lotus. Vishnu is mentioned 96 times in the Rig Veda. Gouache and gold leaf on paper, mid-19th century, India. Ashmolean Museum

Warfare

Internal warfare

Ancient India was never successfully conquered by a foreign invader, although there were repeated invasions from the west, including by Alexander the Great. The most common form of warfare in ancient India was instead between its own tribes, ethnicities, kingdoms and dynasties. A range of weapons and formations were employed, many of which were unique to ancient India.

Weapons

Weapons of the infantryman

Ancient Indian soldiers were armed with a variety of weapons. In long-range combat—when enemy soldiers were far away—bamboo longbows were commonly used, as were slings and javelins. For hand-to-hand combat, swords, axes and spears were used.

Chariots

Indo-Aryans were the descendants of peoples who invented the chariot. The ancient Indian chariot was different from chariots found in ancient Egypt at the time. Egyptian chariots were sleek and fast, and had two wheels. Indian chariots had four wheels supporting a large firing platform that could be up to two metres off the ground. They were expensive to build and maintain, but provided a clear military advantage in battle.

Indian chariots needed four to six horses to pull them, and were used to charge straight into enemy lines. They did this to crush as many enemy soldiers as possible under hoof and wheel. The platforms supported men armed with bamboo longbows and spears.

Archers rained down arrows onto enemy soldiers below, while those armed with spears prevented enemies from climbing onto the chariot. Ancient Indian chariots were later fitted with scythes (long, curved single-edged blades) on their wheels. As the chariots moved, the scythes dismembered enemy soldiers who stood in their path.

War elephants

Ancient Indians were both the first and the last peoples to use war elephants (see Source 13.6.1). Over time they became heavily armoured and their

Source 13.6.1 A painting of an Indian battle scene, c. 1625–1650 AD, Brooklyn Museum, New York

trunks were fitted with sword-like blades that would slash enemy soldiers as their trunks moved from side to side. Some war elephants had small forts built on their backs which held soldiers armed with bamboo longbows, spears and javelins.

Did you know?

Other weapons are described in ancient texts. One is the *pasha*. It is a giant noose made from rope. Large iron balls hang off the noose. The weight of the iron helps tighten the noose and strangle the enemy. Another is the *sudarshana chakra*. It is a spinning, disk-like weapon with 108 serrated edges.

Source 13.6.2 A carving of a Mauryan warrior carrying a *bhuj*, which is a cross between a sword and an axe. Indian Museum, Calcutta

Battle formations

Ancient Indian armies used a large number of battle formations. They tended to be named after plants, animals or objects; for example, the Wheel, the Needle, the Fish, the Lotus and the Eagle.

- In the Lotus, archers were organised in a group located in the centre of the formation, with the infantry and cavalry arranged in 'petals' around the archers to protect them.

- In the Eagle, the strongest and most experienced troops and elephants formed a 'beak' and 'head' at the top of the formation. Two 'wings' made up of chariots, cavalry and fast-running infantry would sweep out on both sides, with the Eagle's 'body' made up of reserves.

ACTIVITIES

Remembering and understanding

1 Name the six weapons of the ancient Indian infantryman.

Applying and analysing

2 Draw a Venn diagram to compare and contrast the key features and advantages and disadvantages of chariots and war elephants as weapons of war.

3 Examine Sources 13.6.1 and 13.6.2.
   a List the aspects of warfare discussed in this unit and shown in these sources.
   b Note at least four key similarities and differences in how each source represents war.

Evaluating and creating

4 Sketch a diagram of the Lotus or Eagle battle formation, labelling the key parts. Consider the advantages and disadvantages of each formation. If you were a battle commander, which formation would you favour? Explain your reasons.

Death and funerary customs

Death

Ancient Indian attitudes to death were heavily influenced by the Vedanta Upanishads and a sacred text called *The Bhagavad-Gita*.

The Bhagavad-Gita

The Bhagavad-Gita is one of the 'books within a book' of the great Hindu epic, *The Mahabharata*. Hindus consider it a sacred scripture. It records a conversation between the warrior Arjuna and Krishna, an avatar of the Hindu god Vishnu. This conversation is about theological (religious) and philosophical ideas, one of which is how a person deals with the idea of death and dying (see Source 13.7.1).

Funeral rituals and rites

Different forms of funeral customs have been recorded in ancient India. For example, bodies were:

- exposed to the elements
- left out in the open to be eaten by birds, most often vultures
- buried in the ground, rivers, caves or urns
- cremated.

Cremation

As Hinduism became more popular and influential, cremation became customary. In ancient India, a deceased person's body was quickly cremated. This was partly due to the Hindu belief that a person's soul was not considered to be part of their mortal body, as described in Source 13.7.1. It was also necessary to avoid the quick decomposition of dead bodies in a hot and wet climate. Contact with dead bodies was considered to be spiritually polluting, and so was avoided.

The wise mourn neither for the living nor for the dead.
As the embodied one has, in the present body, infancy, youth and age, even so does he receive another body …
Contacts of the senses with their objects bring cold and heat, pleasure and pain; they come and go and are transient …
The wise man who is not disturbed by these, who is unmoved by pleasure and pain, he is fitted for immortality.
[Atman (the soul)] is never born nor ever dies, nor having been will ever not be any more; unborn, eternal, everlasting, ancient, [atman] is not slain when the body is slain …
Thou shouldst not grieve.
For certain is the death of the born, and certain is the birth of the dead; therefore what is unavoidable thou shouldst not regret.

Source 13.7.1 Mahatma Gandhi's translation of lines 11 to 27 of *The Bhagavad-Gita*. Here, Krishna talks to Arjuna about pleasure, pain and death of the human body. He says a person should not be worried about death, for only the soul lasts forever.

Did you know?

Archaeologists have uncovered three double graves in the Indus Valley civilisation city of Lothal, each with male and female skeletons. Some archaeologists have suggested this may be the first evidence of sati, a former Hindu practice where a woman was forced to give up her own life when her husband died.

Source 13.7.2 The body of an elderly woman is cremated on the banks of the Ganges. The priest, on the right, is sprinkling incense on the pyre.

Cremation practices

Cremation practices varied from place to place in ancient India, as they do today. There were also different rituals and rites depending on the age, caste, *jati* and status of the deceased.

The first stage of a Hindu funeral and cremation involves preparation of the body, carried out by members of the dead person's family:

1 The body is arranged so that the feet point south, the 'direction of the dead'.
2 The body is bathed in purified water, dressed in new clothes (generally white) and placed on a stretcher.
3 Sacred ash (associated with Shiva) or sandalwood paste (associated with Vishnu) is applied to the forehead.
4 Drops of water from the Ganges are placed in the mouth.
5 Tulsi leaves (a type of basil considered sacred) are placed on the right side of the body.
6 The body is perfumed and almost completely covered in flowers.
7 The body is carried to the cremation ground by close male relatives.

Cremation grounds were traditionally located near or on the banks of a river. Bodies were burnt on pyres of sandalwood, and the ashes collected and thrown into sacred rivers like the Ganges (see Source 13.7.2).

ACTIVITIES

Remembering and understanding

1 a What is atman?
   b Why does it not die when the body dies?
2 List the reasons that Hindu cremations were carried out quickly.

Applying and analysing

3 Use a T-chart to compare your own views about the death of the human body with those expressed by Krishna in the *Bhagavad-Gita* (Source 13.7.1).
4 Create a storyboard that illustrates the main steps taken to prepare the body of a Hindu for cremation. Under it, write a paragraph explaining the significance of some of the steps; for example, the orientation of the body, or the addition of ash or sandalwood paste.

Evaluating and creating

5 Write a six-to ten-line poem about ancient Indian death and funeral practices.

Significant individuals

Chandragupta Maurya

The first truly Indian empire was established in Magadha during the reign of Chandragupta Maurya (324–301 BC). See Source 13.8.1.

There are different accounts of Chandragupta's background. One account suggests his father was a herdsman, another says that his mother was a royal concubine (a woman who lives with an important man without being married to him). His family name is likely to be connected to the Sanskrit word for peacock, *mayura*.

The Maurya bureaucracy

Chandragupta's bureaucracy was very large. Sources suggest that it comprised one million civil bureaucrats, soldiers and spies. It was so expensive to support that Chandragupta collected 25 to 50 per cent of the value of all crops raised. He also taxed trade, gold and herds. The state owned and operated all mines, shipbuilding and armament factories, and centres of spinning and weaving.

The Maurya army

Chandragupta divided his empire into districts, which were supervised by close relatives or trusted generals. The army was divided into four major corps:

- infantry (600 000 men)
- army (300 000 men)
- chariots (8000)
- elephants (9000)

These estimates are taken from historical sources that may be exaggerated.

Pataliputra

The Maurya capital was Pataliputra (modern-day Patna). The city was:

- 13 kilometres long and 2.5 kilometres wide
- surrounded by timber walls with 570 towers
- surrounded by a moat 275 metres wide and 9 metres deep.
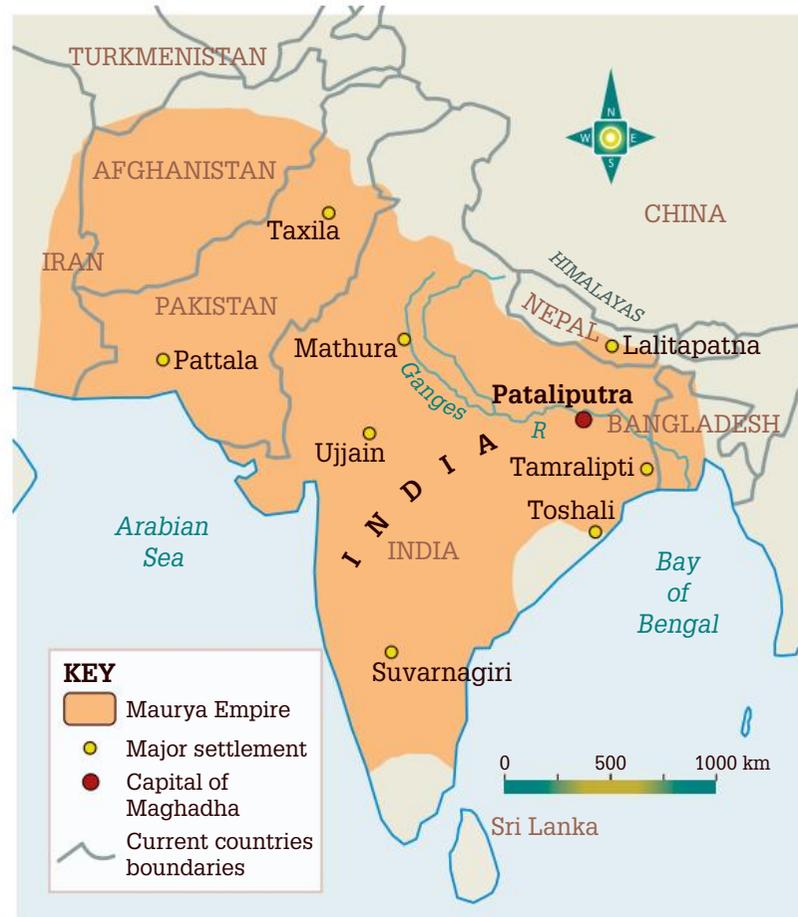
Source 13.8.1 Chandragupta Maurya Empire (300 BC)

ADMINISTRATION

According to the diaries of Megasthenes, who was the Greek ambassador to Chandragupta's court, Pataliputra was administered by six boards that were each made up of five men. These boards managed:

- the industrial arts
- trade and commerce
- tax collection
- foreigners
- vital statistics
- maintenance of public places, including markets and temples.

Earning a living

Megasthenes also described seven classes of people in Mauryan India. In order of importance they were royal councillors, Brahmans, agriculturalists, herdsmen, soldiers, spies and artisans.

Other historical sources tell us how much was earnt per year by people of different occupations in Mauryan India:

- 48 000 panas for royal councillors
- 1000 panas for engineers
- 500 panas for soldiers and spies
- 120 panas for carpenters and other craftsmen
- 60 panas for unskilled labourers.

(One pana was the equivalent of 3.5 grams of silver. Sixty panas would barely feed and clothe a family.)

Final years

In 301 BC, Chandragupta abandoned his throne to become a Jain monk, and then fasted until he died. He was succeeded by his eldest son, Bindusara, of whom little is known. Chandragupta's grandson Ashoka (meaning 'sorrowless') came to power in 269 BC. Ashoka is regarded by many historians as the first true emperor of India.

Kautilya and the *Arthashastra*

Most historians believe much of Chandragupta's success was due to his talented prime minister, Kautilya. Kautilya is credited with writing the *Arthashastra*, the 'Science of Material Gain'. The *Arthashastra* is full of advice on statecraft (how to run a state), including the recommended education and training of a raja (king), how a raja should behave at court, the importance of spies, and how to conduct foreign policy, which included attacking the most powerful of your enemies.

Only if a king is himself energetically active, do his officers follow him energetically. If he is sluggish, they too remain sluggish … He is thereby easily overpowered by his enemies. Therefore, he should ever dedicate himself energetically to activity.

Source 13.8.2 The *Arthashastra* on the king's responsibility to be active

The *Arthashastra* is very practical. It does not look to the Vedas, the Brahmans, the Vedanta Upanishads, the *Bhagavad-Gita* or Buddhism for guidance or inspiration. It focuses on what works, irrespective of whether it is morally right or wrong.

Historians believe that the *Arthashastra* in its present form cannot have been written by Kautilya alone. This is because different parts show differences in style and language. The evidence points to a 'layered' text—with some parts authored by Kautilya and other parts produced much later, but probably based on what Kautilya had written.

Duties of a raja

The *Arthashastra* outlines the raja's duties in great detail. To rule successfully a raja needed to divide every day into eight parts and every night into eight parts (see Source 13.8.3).

Protection and prosperity

The *Arthashastra* urges the raja to benefit and protect all his citizens. This is because Kautilya believed that a kingdom could not prosper without protection for the weak (see Source 13.8.4).

Part	Day	Night
One	Listen to reports about law and order and finances (income and spending)	Meet officers of the secret service
Two	Work on matters relating to ordinary people in the cities and countryside	Take a bath, eat and study
Three	Take a bath, eat and study	At the sounding of the trumpets, enter the bed chamber and sleep
Four	Receive gold and meet with heads of the six boards	Sleep
Five	Read letters from your ministers, and write back; hear secret reports from spies	Sleep
Six	Have free time or listen to the advice of your ministers	At the sounding of the trumpets, wake up; ponder the sciences and urgent duties for the day
Seven	Inspect the military (infantry, cavalry, chariots, elephants)	Hold consultations; give orders to the officers of the secret service
Eight	With the head of the military, make plans for conquering other peoples; offer evening prayers	With Brahmans and gurus by your side, receive blessings; meet with your doctor, the kitchen supervisor and astrologer.

Source 13.8.3 The *Arthashastra* on the raja's daily duties

Lands may be confiscated from those who do not cultivate them and given to others … If cultivators pay their taxes easily, they may be favourably supplied with grains, cattle, and money.

The raja shall provide the orphans, the aged, the infirm, the afflicted, and the helpless with maintenance. He shall also provide subsistence to helpless women when they are carrying [a baby] and also to the children they give birth to.

Violation [of the chastity] of nurses, female cooks, or female servants of the class of joint cultivators or of any other description shall at once earn their liberty for them.

Source 13.8.4 The *Arthashastra* on aspects of society

ACTIVITIES

Remembering and understanding

1 How was Chandragupta Maurya able to afford such a large bureaucracy?
2 Who was Kautilya and why was he important to the reign of Chandragupta?
3 In Source 13.8.2, Kautilya advised Chandragupta Maurya to be active. Identify all the causes and effects that Kautilya wants Chandragupta to avoid. Draw a flow chart to illustrate this.

Applying and analysing

4 Using the information from 'Earning a living' to help you, write two statements to describe life in Mauryan India.
5 Source 13.8.3 provides a detailed view into the daily life of a raja. Would a raja following Kautilya's advice be acting for his own good or the good of his people? Explain your reasoning.
6 Analyse Kautilya's view of peasants, labourers and women, as described in Source 13.8.4.

Evaluating and creating

7 With a partner, discuss the reasons why Megasthenes's *Indica* might not always be a reliable source of information on life in Chandragupta's empire.

Inquiry tasks

Annotated faith timeline

Work in pairs or a group of three to draw up a large timeline and record all the key dates in the development of Hinduism, Buddhism and Jainism in ancient India. You may need to complete some further research first. Annotate the timeline with images, sketches and 'fact boxes' that focus on key doctrines and key individuals for each faith.

Use your timeline to answer the following questions:

a Which faith developed first and which last?

b To what extent was each faith dependent on another or others for its development? (Hint: where are the areas of interaction on the timeline?)

c What are the major similarities and differences in the doctrines of each faith?

d If you could choose 10 important dates on the timeline, which ones would they be and why?

Leadership panel debate

In a group of five, prepare for a panel debate on the topic, 'The greatest leader in the history of India'. Each member of the panel will argue on behalf of one of the following five ancient leaders: Buddha, Mahavira, Chandragupta Maurya, Ashoka, Chandra Gupta II. Group members should begin by reviewing the information in this chapter, but further research will also be required. Group members should consider both the achievements of these leaders and their legacy in India up to and including the present.

Source 13.9.1 A scene from the great Hindu epic, the *Ramayana*, showing Rama's monkeys battling the King of Lanka's demons. Vishnu appears in the top left corner. c. 1649–53 AD, ink and colour on paper, British Library, London

Travel diary

Imagine you are a foreigner travelling through ancient India in the 5th century AD, a bit like the Chinese Buddhist pilgrim Fa-hsien. Write a travel diary of six to eight entries. Consider the geography, the people, the beliefs, the law and roles in society. Given that this is close to the end of the ancient period of Indian history, what will you have heard ancient Indians say about their own history? How will your origin (where you have come from; for example, Rome or China) influence your own impressions? Consider starting with a mind map to help you plan your entries.

The *Ramayana*

You are part of a group of four or five writers and directors on a new film based on the *Ramayana*. In preparation for filming your new production you need to:

a create a storyboard of the plot of the film for the actors and film crew

b prepare a short scene from the story for rehearsal

c present this short scene to the actors and film crew (that is, your class).

Your group will need to research the *Ramayana* further to complete this task.

GLOSSARY

Aryans a group of peoples who began arriving in India via the Hindu Kush mountains in about 1400 BC, and from whom most Indians trace their descent

atman a concept of Hinduism, meaning of the individual soul, which is the same as Brahman, the single source of all creation

Brahman can refer to the single source of all creation, or to the *varna* (class or caste) of priests in ancient Indian society

guru a Brahman (priest) who preached to disciples in forest seminars

moksha the release or freedom a person feels when they are no longer tied to wanting objects they do not have

raja kings of ancient India, usually from the Kshatriya *varna*

rishi holy wise men who advised rajas (kings)

sannyasin the fourth and final transition or stage of a man's life, where he became a wandering ascetic

Shiva one of the two primary Hindu gods; the creator and destroyer of life

shreni the artisan or merchant guilds that helped ancient Indian trade with China and Rome prosper

varna classes or castes of ancient Indian society

Vishnu one of the two primary Hindu gods; the divine saviour of humans

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