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WESTERN AUSTRALIAN CURRICULUM

Leo Conti | Mark Easton | Maggy Saldais
Vladimir Dumovic | Richard Kostecki

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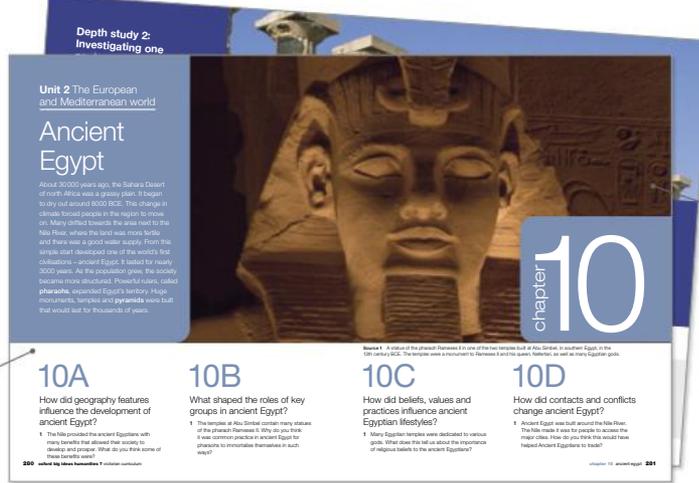
Oxford Big Ideas Humanities and Social Sciences

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Focus on inquiry

Each chapter of Oxford Big Ideas Humanities and Social Sciences is structured around key inquiry questions from the Western Australian Curriculum. Each unit of the text supports teachers and students as they adopt an inquiry-based approach to the key learning areas in the Humanities and Social Sciences.

The learning sequence in each chapter is clearly set out under key inquiry questions. Students are encouraged to use their prior knowledge and make predictions at the start of each new topic.



Stunning full-colour photography generates discussion and interest.

Focus on engagement

Each unit of the Student book combines a range of engaging source materials – such as photographs, videos, data tables, graphs and illustrations – with supporting questions and activities.

Source materials – such as photographs, infographics, political cartoons, graphs – simplify difficult concepts and engage reluctant learners.



Check your learning activities accompany every unit, allowing students to consolidate and extend their understanding. These are graded according to Bloom's Taxonomy – catering for a range of abilities and learning styles.

Focus on concepts and skills

Complete coverage of all concepts and skills provided in stand-alone reference 'toolkits'. All of these concepts and skills are also integrated throughout the text so students can see them at work in context.

Rich task activities encourage students to apply the knowledge and skills they have learned in each chapter to a new and interesting case study, event or issue.



Skill drill activities guide and support students step by step as they learn and apply key skills.

Extend your understanding activities challenge students to conduct further research, or complete group work, to deepen their understanding of an issue or skill being investigated.

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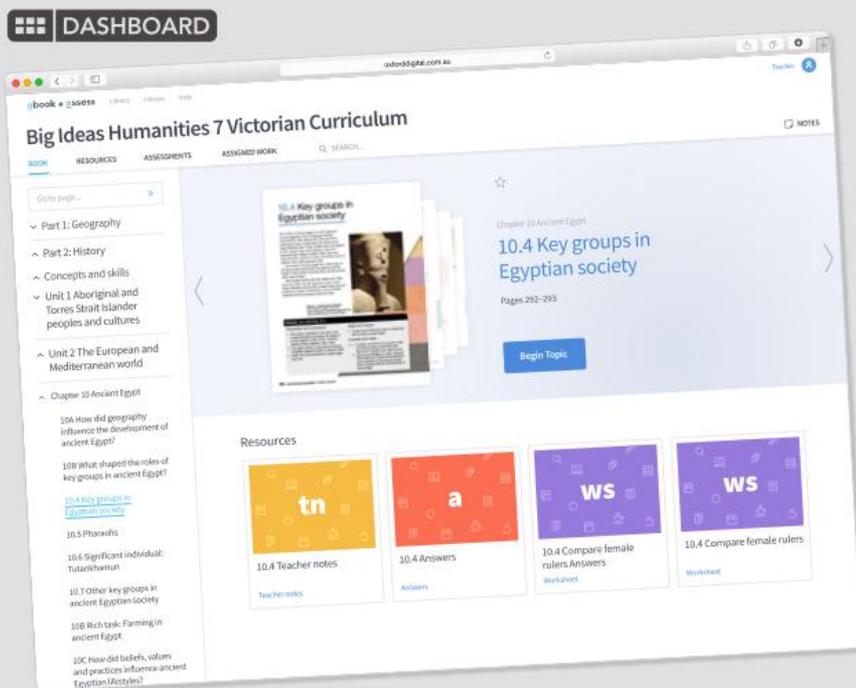
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part

1



geography

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Concepts and skills

The geography toolkit

Geography is the study of the world around us. Studying geography helps us understand how the Earth works. This includes natural processes (such as volcanoes, floods and the weather) as well as human activities (such as mining, tourism and building cities).

Geographers use a range of key concepts and key skills to study the world. Each of these concepts and skills is a tool that you can use to better understand your world. As you master each of these concepts and skills you will gradually fill your toolkit with a range of useful geographical tools.

Geographers are curious. They look at the Earth's **features** and always want to know more about them. For example, when they look at the Bungle Bungle Range (Purnululu National Park) located in the East Kimberley **region**, Western Australia, shown in Source 1, they wonder about many aspects of this natural feature. They want to know about:

- its size
- its location
- the types of rock in the area
- the types of plants and animals in the area
- its significance to Indigenous Australians
- the way it is used by people
- the way it is changing.



1A

What are the geographical concepts?

1B

What are the geographical skills?



chapter

1

Source 1 The Bungle Bungle Range in Purnululu National Park

1C

What is fieldwork?

1.1 Geographical concepts

Geographers use seven concepts to help investigate and understand the world. The seven key concepts in geography are:

- place
- space
- environment
- interconnection
- sustainability
- scale
- change.

Place

Places are parts of the Earth's surface that are identified and given meaning by people. A place can be as small as your bedroom or as large as the entire planet!

Places can be natural (that is, shaped by the environment and largely unchanged by humans) or built (that is, constructed by humans).

The life of every person and animal on Earth is influenced by place. Places determine our relationships with one another. Our closest relationships are likely to be with people in the same place. The environmental and social qualities of a place all influence the way we live. Climate, landscapes, types of plants and **resources**, transport networks, entertainment venues and workplaces all have a major impact on place and on the way we live.

For Indigenous Australians, place also has a deeper spiritual meaning. Their sense of identity comes from their relationship with place. Aboriginal people have lived in the Kakadu region of the Northern Territory for over 50 000 years. The region contains approximately 5000 rock art sites, some of which are over 20 000 years old. They represent the longest historical records of any group in the world.

Geographers use the concept of place when conducting any **geographical inquiry**. For example, a geographer studying Perth (Source 1) would use the concept of place to help understand why people originally settled there, how the city was built and how it has changed over time.

They would also use place to investigate the important role the city plays in the lives of people from Perth, Australians, and people all over the world.



Source 1 Perth – an example of a built environment

Just as place influences people, people also influence place. The ways in which we live, and the actions we take, change the places in which we live. Geographers investigate the outcomes of these changes. For example, by investigating the way in which human actions have altered the Brazilian rainforest, geographers can learn how to better manage and care for our natural resources.

Space

To most people space means the empty universe but to a geographer it has a different meaning. Geographers investigate the way that things are mapped and arranged on the Earth's surface. They look for patterns and try to explain them. The concept of space helps them to do this. It has three main elements:

- location – where things are located on the Earth's surface
- spatial **distribution** – the shapes and patterns in which things are arranged on the Earth's surface
- organisation – how and why things are arranged and managed on the Earth's surface by people.

Geographers investigate the way that people use and change the space in which they live. They recognise that different groups of people use space in different ways and that this changes over time.

The city of Shimabara in the south of Japan (Source 2) illustrates the concept of space well. The city has been built on a flat coastal area at the foot of an active volcano, Mount Unzen. Houses, schools and office buildings in Shimabara are

linked by roads leading to nearby farms closer to Mount Unzen. The volcano clearly presents a danger to people living in the town. As Source 2 shows, the flow of superheated ash and rock from the volcano has buried part of the city as it makes its way to the sea. At first glance it may not be clear why anyone would risk living this close to a volcano, but the fertile volcanic soil in the area makes it ideal for growing crops.

The concepts of place and space can be difficult to separate, but it will help if you remember that places can be divided into spaces. For example, a place, such as your school, has different spaces for learning (such as classrooms), playing (such as playgrounds), eating (such as the cafeteria or canteen) and running the school (such as staffrooms).

Larger places (such as your suburb, town or city) are also organised into different spaces. There are spaces for housing, businesses, industry, entertainment, and sport and recreation.

Our understanding of the location, patterns and planning of spaces helps geographers to make sense of our world.



Source 2 An **aerial photograph** showing the path of the hot ash and rock that flowed to the sea from Mount Unzen, an active volcano on the island of Kyushu in Japan. Part of the city of Shimabara (shown in the foreground) has been buried by the eruption.

Environment

The world in which we live is made up of many different environments. Some environments are natural (or physical) such as deserts, grasslands, mountains, coral reefs, forests, oceans and ice caps. In order for an environment to be considered natural, its soils, rocks, climate, plants and animals must remain largely untouched by humans. Today, there are very few truly natural environments left on Earth.

Other environments have been so altered by humans that very few natural features remain. These environments are known as built (or human) environments and include large cities, towns, suburbs and vast areas of farmland. Human environments not only affect the natural features (such as soil, plants and animals); they also affect the climate. A large city, such as New York, has its own microclimate. It will often be a few degrees hotter than the surrounding areas because concrete in the buildings traps the Sun's heat.

Most environments on Earth are now a combination of natural and human features. For example, Antarctica, the harshest environment on the planet, is considered a natural environment despite humans having altered some areas of it. These changes have included the building of a number of permanent research bases and the carrying out of various scientific studies both on

land and at sea. The McMurdo research base, for example, operated by the United States (Source 3), has three airfields, a harbour and more than 100 buildings. In addition to these built structures, other human influences have affected this environment. The warming of the planet has contributed to the increased melting of ice shelves and pollution of our oceans has had an impact on sea and land animals in Antarctica.

The study of different environments helps geographers to analyse the changes humans make to natural environments and better appreciate their impact so that they can be managed more wisely.



Source 3 A scientist looking out over McMurdo Station at Observation Hill in Antarctica. The line between the natural and built environment is clearly illustrated in this photograph.

Interconnection

Geographers use the concept of interconnection to better understand the complex links between natural and human processes that shape our Earth. Places and people can be linked in many different ways that can be categorised as:

- natural processes, such as the water cycle and the food chain
- human activities, such as the movement of people, the production and trade of goods and

the flow of investment and money within and between different countries.

It helps to think of the Earth as a single living organism, much like your body. The Earth's living systems (such as climate, plants, animals, oceans, soils, atmosphere and energy) all function together and are interconnected. Even a slight rise in the Earth's temperature, for example, will affect the oceans (such as damaging coral reefs), the land (such as failure of crops and drought) and the polar ice caps (such as increasing sea levels and forcing

millions of people to relocate). Source 4 shows a slum in Bangladesh, the most densely populated country in the world. Bangladesh is home to 150 million people. Its coastal zone has a very low elevation above sea level, making it one of the countries most vulnerable to **climate change** through rising sea levels.

Source 4 Bangladesh is one of the countries most vulnerable to climate change because of a number of interconnected processes that are causing sea levels to rise. It is estimated that 15 million of the poorest people living in Bangladesh, like those living in this slum, will be affected by a 1-metre rise in sea levels.



Sustainability

The concept of sustainability relates to the ongoing capacity of Earth to maintain all life. This means developing ways to ensure that all resources on Earth are used and managed responsibly so they are there for future generations.

Many of the world's resources (such as oil, coal and natural gas) are non-renewable. This means that if we continue to use them they will



Source 5 A minke whale and her one-year-old calf are being dragged on board the Japanese factory ship *Nisshin Maru*. Anti-whaling activists argue that the number of whales hunted by the Japanese each year is **unsustainable**.

one day run out. Other resources (such as wind, forests, sunlight and water) are renewable. This means that they replace themselves naturally, or can be replaced to meet the needs of society. Sustainability encourages us to think about these different types of resources and take greater care of the Earth. Actions to improve sustainability can operate at a number of levels:

- Local – Recycling of paper by individuals, schools and households reduces the amount of trees that need to be cut down.
- National – In Australia the government has begun to encourage sustainable use of energy through the establishment of wind farms and hydroelectric power plants and the use of solar panels.
- International – Efforts to protect endangered whale species around the world have attracted media attention and focused public opinion on maintaining breeding grounds free of large whaling vessels (Source 5).

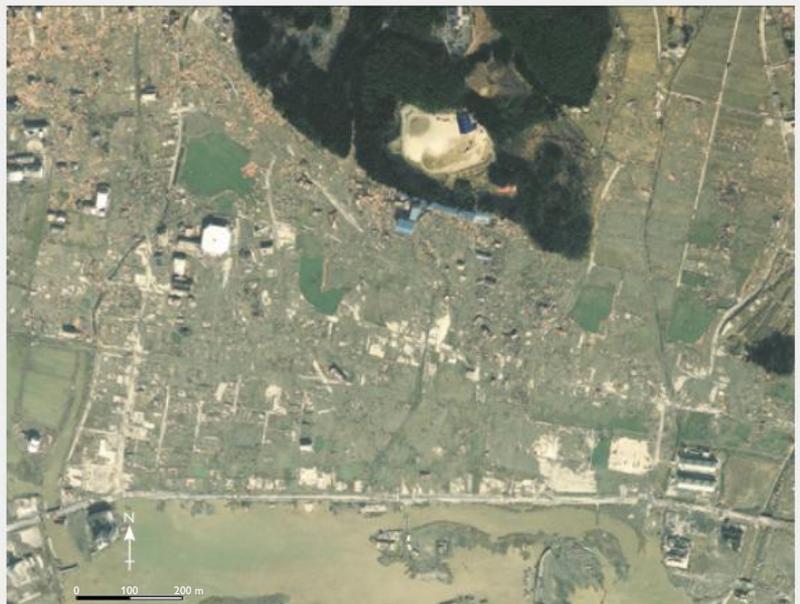
Sustainability is an important concept for geographers. They use it to investigate how natural and human systems work, and understand how resources can be managed in such a way that they will be sustained into the future.

Change

The Earth is constantly changing. Some changes occur very rapidly and are easy to see, while others take place over millions of years and are almost undetectable to us. The concept of change is important in geography because it helps us to understand what is happening around us. Changes can be caused by natural processes, such as climate or natural disasters, or by human processes.

Changes take place on many different levels, from personal and local right through to national and global. Small local changes that happen quickly, such as a creek flooding, are often easy to observe and explain. Larger regional or national changes, such as an earthquake or **tsunami**, can happen quickly and their effects can be widespread and have devastating impacts on places and people (see Source 6). Changes that take place on a global scale can take much longer to occur. Global warming, for example, is a long-term change that happens slowly. Global warming has widespread effects that are not easily explained.

Geographers need to look at different types of changes, why they have occurred, over what time period they have occurred and what further changes may take place as a result. Sometimes changes can be positive, such as the conservation of plants and animals in national parks, while other changes can have negative consequences, such as the deforestation of native rainforests in Indonesia. Geographers play an important role in ensuring that change is managed in a sustainable way.



Source 6 The changes that took place in a Japanese coastal suburb of Rikuzentakata as a result of a tsunami in March 2011 were devastating and very rapid. The top image shows the area before the tsunami and the bottom image shows the same area after it had struck.

Scale

Scale is an additional concept used to guide geographical inquiries. Geographers study things that take place on many different spatial levels – meaning from small areas (such as a local park) to very large areas (such as the use of oil and coal all over the world). A geographic inquiry of the ways in which people use parks, for example, may be carried out at a range of scales (from smallest to largest):

- local – such as an inquiry into the daily visitors to a neighbourhood skate park, and whether its facilities meet the needs of visitors
- regional – such as an inquiry into the types of visitors staying at campsites and tourist parks in Western Australia
- national – such as an inquiry into the yearly tourist numbers visiting national parks in Australia (such as Nambung National Park), including the impact these visitors have on our national parks and the way in which these parks are managed.
- international – such as an inquiry into animal poaching in national parks and wild game reserves in different countries across Africa
- global – such as an inquiry into the use of all marine parks around the world and how well they protect endangered species.



Source 7 Geographical inquiries can be carried out on a number of different spatial levels: local (e.g. at a nearby skate park); regional (e.g. at a campsite in the Grampians region of Victoria); national (e.g. at national parks across Australia); international (e.g. in different countries across Africa) and global (e.g. at marine parks all over the planet).

Check your learning 1.1

Remember and understand

- 1 Examine the photo of the Bungle Bungles (Source 1 on pages 4 and 5). Is this a natural or built environment? Give reasons for your answer.
- 2 Perth (shown in Source 1 on page 6) is one of the Australia's largest cities. List five ways in which this built environment would affect how people live and work.

Apply and analyse

- 3 Here are some examples of changes that may be occurring on Earth at any given time:
 - A new freeway is being built through the city.
 - The Earth's climate is warming.
 - An earthquake is destroying a town in Turkey.
 - a Which of these changes are caused by human activities and which are caused by natural processes?
 - b Identify the scale at which each of the above changes takes place; that is, local, regional, national, international or global.
- 4 List three ways in which your school or household is addressing the concept of sustainability. Which of these do you believe is most successful? Why?
- 5 Study Source 6 Identify the major changes to the Japanese coastal suburb as a result of the tsunami. How might an understanding of the concept of change be useful in guiding the rebuilding or relocation of the suburb?
- 6 Your class is undertaking research on the Great Barrier Reef. Develop one question for each of the seven geographical concepts discussed in the text.

Evaluate and create

- 7 Create a diagram, such as a flow chart, to show the interconnection between the natural and built environment at Antarctica's McMurdo Station (Source 3). Include information on such aspects as climate, landforms, wildlife and human settlement.
- 8 Choose one of the key concepts that has been discussed. Design a poster for your geography classroom to help you and your classmates remember this concept and use it in geography.

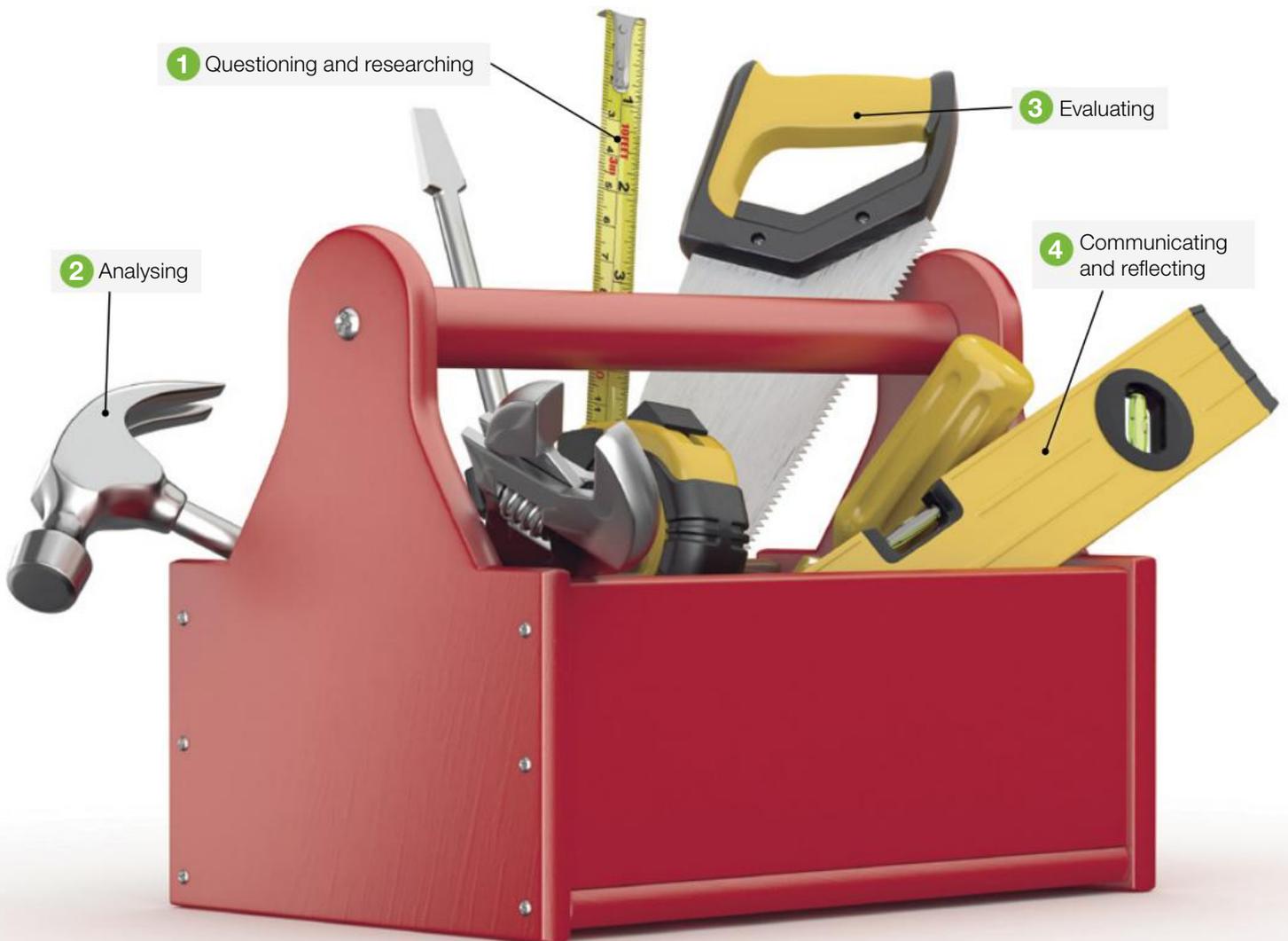
1.2 Geographical skills

Geography has been described as the ‘why of where’. Geographers examine the world and try to explain what they see. Like a detective at the scene of a crime they follow a line of inquiry. To follow a line of inquiry, geographers need a range of skills. They are:

- 1 Questioning and researching
- 2 Analysing
- 3 Evaluating
- 4 Communicating and reflecting

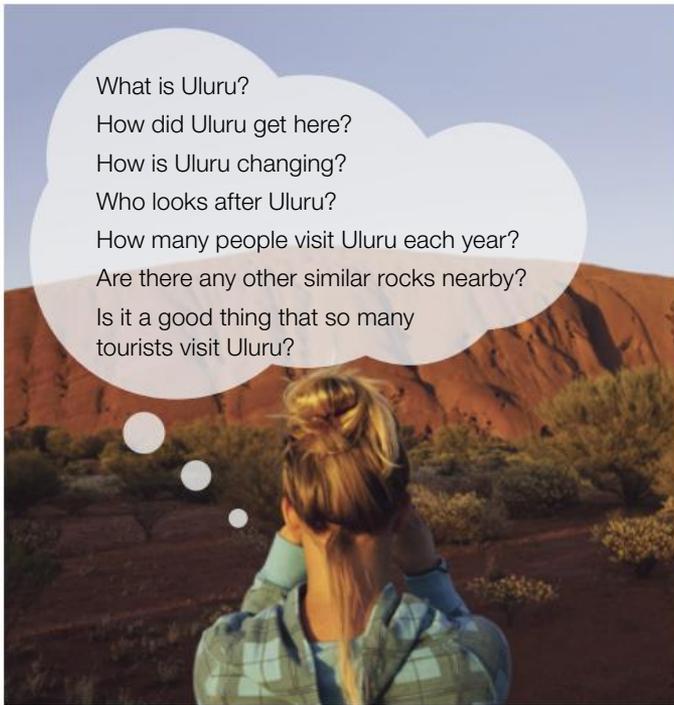
As you develop each new skill you will have gained another important tool for explaining the natural processes and human activities that shape our amazing planet.

Each of the skills you will learn over the course of this year is explained in this section. It might help you to think of each of these skills as individual tools in your toolkit. For some geographical inquiries you may only need to use one tool; for others, you may need to use many.



Source 1 The skills needed by every geographer. Think of each of these skills as a tool in your geographer’s toolkit.

1.3 Questioning and researching



Source 1 Developing geographical questions is an important part of a geographical inquiry.

Ask geographical questions

Geographers ask lots of questions. Geographical questions can be as simple as ‘What is it?’ and ‘Where is it?’ or more complex, such as ‘What is the connection between these two things?’ and ‘How and why have things changed over time?’

As a geographer, no longer will you look at something in your world, such as Uluru, and only think of it as an interesting place to visit. Instead, you will begin to ask questions about how it was formed and came to look the way it does. You will also start to ask questions about the area in which it is located, its vegetation, how it is used and managed and its significance for Indigenous Australians.

When we ask questions of the world around us, sometimes we identify possible gaps in our knowledge. These gaps in our knowledge present an opportunity for geographical inquiry to gather new knowledge or challenge existing personal perspectives.

skilldrill

Developing geographical questions

Study Source 1. This visitor to Uluru is asking some important geographical questions. You can learn to do this too by starting your questions with the words ‘what’, ‘where’, ‘how’, ‘why’, ‘what impact’ or ‘what should’ when thinking about a particular feature or place.

Your questions should deal with ideas such as:

- Where is it?
- How many are there?
- How big is it?
- What pattern or shape is it?
- Why is it like this? Is it like this because something else is at this location?
- How does it interact with other things in this place?
- Who interacts with it?
- Is it changing? If so, why is it changing and what will it look like in the future?
- How should people best manage this change?

The very best questions open up an exciting area for you to explore. For example, the visitor might ask a simple question, such as ‘How big is Uluru?’ This is a question with a relatively simple answer. A better geographical question for the visitor to ask would be ‘Why is Uluru so big?’ This question opens up a whole new area for her to explore.

Apply the skill

- 1 Why would it be better to ask ‘Why is Uluru so big?’ than ‘How big is Uluru?’?
- 2 Where could you look to find answers to the question ‘Why is Uluru so big?’?
- 3 Examine the photograph of the Bungle Bungle Range at the beginning of this chapter. Work with a partner to develop geographic questions about this landscape.

Plan a simple geographical inquiry

Once you have asked a range of more general questions about a geographical feature or issue, it is time to select one question that will become the focus of your inquiry. When you have chosen this, it is useful to decide what data is needed to answer the question and how to collect the data.

Planning a geographical inquiry about Uluru

Having chosen to investigate the **key inquiry question** 'Is it a good thing that so many tourists visit Uluru?', you need to decide what data is needed to answer the question and how to collect the data. See Source 2 as an example.

Collect information and data

Good planning and preparation will ensure that your geographical inquiry will run smoothly, be relevant and give you the answers you are looking for. You should:

- collect and record the information you think you will need to answer your key inquiry question
- evaluate this information and data to determine that it is accurate and relevant
- represent your findings in an interesting and appropriate way (such as tables, graphs, maps and sketches).

Source 2 A guide for planning the direction of a geographical inquiry into Uluru

| Key inquiry question | Data needed | Possible sources of data |
|---|---|---|
| Is it a good thing that so many tourists visit Uluru? | <ul style="list-style-type: none"> • Information on the importance and significance of Uluru to the Anangu, who are the Indigenous people in the area • Information on the management and maintenance of the park | <ul style="list-style-type: none"> • Conduct fieldwork into visitor numbers • Create surveys and questionnaires for visitors to complete • Contact Parks Australia and Uluru–Kata Tjuta National Park for information on how the park is managed • Download resources from the Parks Australia website; for example, podcasts, maps, visitor guides, geological reports, audio tours and images |

Source 3 Kata Tjuta in the Northern Territory

Primary and secondary sources

Geographers find answers to their questions in many places. They may collect information themselves by interviewing people, taking photographs, making sketches out in the field or conducting surveys and questionnaires. This kind of information will generally only be relevant to a particular inquiry and is called **primary data**.

Often a geographer collects information that supports his or her inquiry but has not been specifically collected or designed by the geographer for the inquiry. This type of information is called **secondary data**.

Source 4 Examples of primary and secondary data

| Some examples of primary data | Some examples of secondary data |
|--|---|
| <ul style="list-style-type: none"> • Hand-drawn maps and field sketches • Photographs and images taken for the inquiry • Questionnaires and surveys designed and created for the inquiry • Graphs created from data (such as number of visitors, number of cars counted, and temperature and wind statistics) gathered by the geographer for the inquiry | <ul style="list-style-type: none"> • Information from textbooks, atlases, maps, graphs, reports and websites that were not created specifically for the inquiry • Data that was collected by a government department (such as census data), the media, companies and other organisations and was not collected specifically for the inquiry |



Primary and secondary data provide either **quantitative data** or **qualitative data**. Quantitative data includes anything that can be recorded as numbers (for example, Uluru is 3.6 kilometres long and 1.9 kilometres wide and has a circumference of 9.4 kilometres). Qualitative data, on the other hand, includes anything that can be recorded in words (for example, Uluru, one of Australia’s best known natural landmarks, is very large).

Source 5 Examples of quantitative and qualitative data

| Some examples of quantitative data | Some examples of qualitative data |
|--|--|
| <ul style="list-style-type: none"> • Climate and temperature statistics • Tourist numbers • Population figures (including birth and death rates) • Types and amounts of food grown • Number of plant and animal species and wildlife in certain areas • Forest clearance rates • Numbers of people killed in natural disasters • Numbers of volcanic eruptions and earthquakes | <ul style="list-style-type: none"> • Opinions • Points of view • Personal stories • Likes and dislikes • Feelings |

Good geographical inquiries will always be based on a combination of primary and secondary data that is both quantitative and qualitative. Even though qualitative data is an important part of any geographical inquiry, quantitative data is considered to be more valuable because it is less open to personal interpretations and can be more accurately represented in graphs and charts. Before you move to the next stage of your inquiry, it is important to check that you have recorded all your data without

errors and that it is balanced and fair. Your data should not reflect your personal opinions, emotions or attitudes; instead it should present the facts in a clear and concise way.

Record information and data

There are many ways to record data and information as you collect it. Choosing the most appropriate method will often depend on the kind of data you are collecting.

If you are collecting qualitative data on the types of geographical features at your nearest beach, you might take photographs, make a list of the features or draw sketches of the beach. If, on the other hand, you are recording data on the number of people who use the beach, you might use a tally or table to keep track of people as they go by.

Mind maps and other graphic organisers can also be used to group ideas and identify relationships between features.

Ethical protocols

It is important to keep in mind ethical protocols when you are conducting your questioning and research. This means you should try to do the right thing by anyone you might involve in your inquiry. In order to do this you should keep in mind the following things:

- Remember to seek permission from someone before you use a photo of them in your inquiry.
- Always seek permission if you intend to visit Aboriginal cultural land.
- If you are using someone else’s work in your inquiry, do not take credit for their work. Instead acknowledge correctly by using the format specified by your teacher.



Create maps and other graphic representations

Geographers can collate information they gather during their inquiries in a number of different ways. They often make maps, create graphs and tables or even draw diagrams to help them gather information or look for patterns in the data they have gathered. These tools also help people who were not involved in the inquiry (such as the general public, the government or people in the media) understand the work that has been done.

Creating maps

One of the most useful tools that geographers use to process information is a **map**. A map is a simplified plan of an area. Maps are drawn in the **plan view** (directly from above) because this ensures the **scale** will be the same across the entire area. If maps were drawn from an angle, some parts of the mapped area would look distorted and so it would not be an accurate representation of the area. When properly used, maps can reveal a great deal about our planet and the ways in which we use it.



Source 6 A vertical aerial photograph of Sydney Harbour and the city. A map of the same area is shown in Source 7.

SYDNEY: HARBOUR AND CBD



Source 7

Source: Oxford University Press

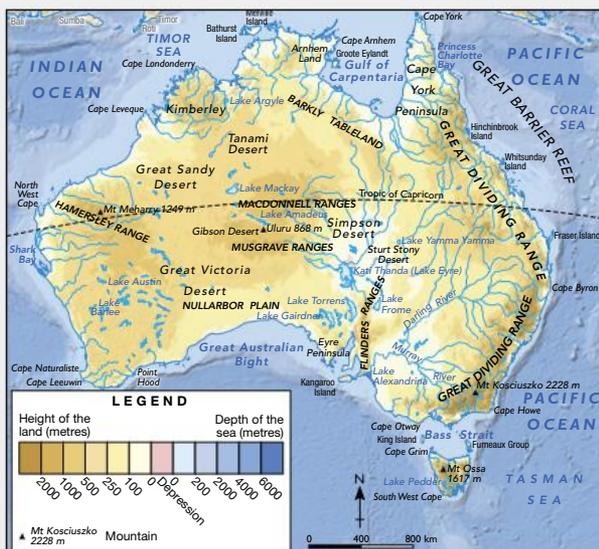
Simple maps

Geographers use different types of maps to show a whole range of different natural and built features – and the connections between them. This year you will be learning how to create a number of different types of maps and interpreting the information that they provide. These maps include:

Physical maps

Physical maps show the locations and names of natural features of the Earth. These may include deserts, mountains, rivers, plains, oceans, reefs, volcanoes and lakes.

PHYSICAL MAP OF AUSTRALIA SHOWING OCEANS AND MAJOR MOUNTAIN RANGES, RIVERS, LAKES AND DESERTS



Source 8

Source: Oxford University Press

Political maps

Political maps show the locations and names of built features of the Earth. These may include country borders, state and territory borders, cities and towns.

POLITICAL MAP OF AUSTRALIA SHOWING STATE AND TERRITORY BORDERS, CITIES AND TOWNS



Source 9

Source: Oxford University Press

Dot distribution maps

Dot distribution maps use dots (or shapes) to represent (and sometimes compare) a range of different features. The dots show the location of the chosen feature. The size and colour of the dots on the map can show different characteristics of that feature. For example, in Source 10 small towns are shown as small green dots and big cities are shown as big red squares. Other dot distribution maps show the location of a single feature, such as litter (see Source 3 on page 37). Dot distribution maps help to show patterns and links between features – geographers refer to this as spatial distribution.

DOT DISTRIBUTION MAP OF AUSTRALIA SHOWING POPULATION



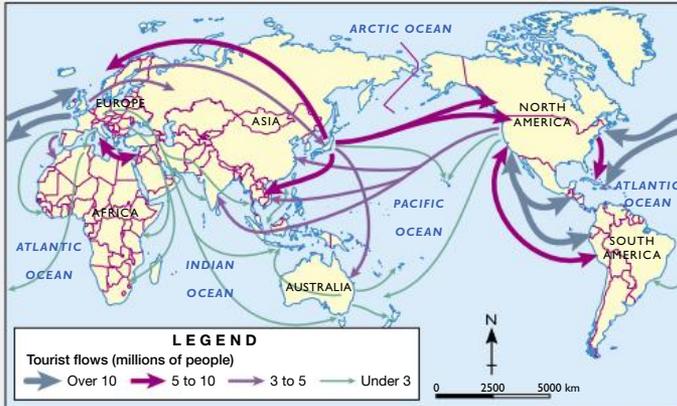
Source 10

Source: Oxford University Press

Flow maps

Flow maps show movement from one place to another. Arrows of different thicknesses or colours are used to show where different things (such as people or goods) are moving to and from, and to compare the numbers involved in the movement.

FLOW MAP SHOWING THE FLOW OF TOURISTS WORLDWIDE



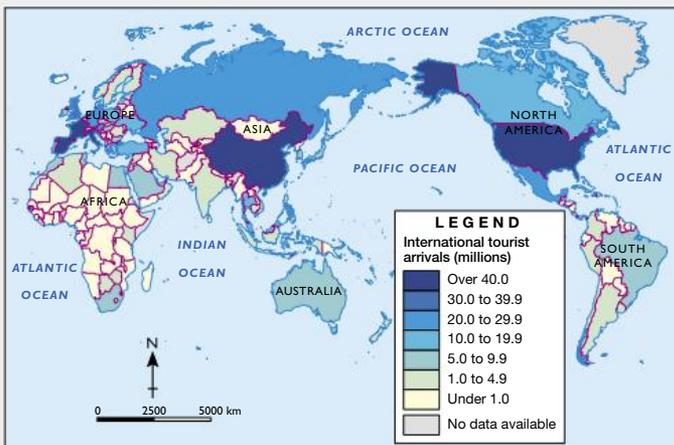
Source 11

Source: Oxford University Press

Choropleth maps

Choropleth maps use different shades of the same colour to give a quick impression of the pattern formed by the data being shown. Darker shades show the highest values or the greatest amounts, while lighter shades show the lowest values or the least amounts.

CHOROPLETH MAP SHOWING INTERNATIONAL TOURIST ARRIVALS WORLDWIDE

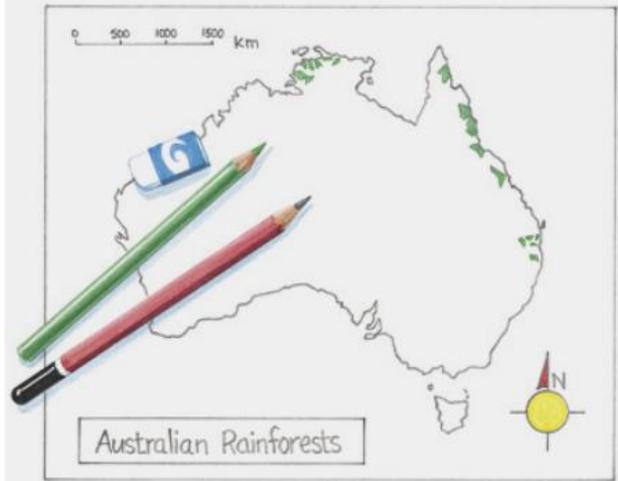


Source 12

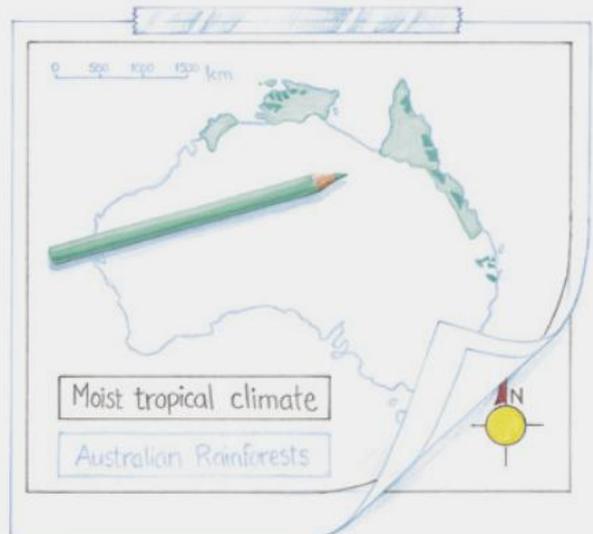
Source: Oxford University Press

Overlay maps

Overlay maps show how features on the Earth's surface may be related to each other. To create an overlay map you first need to produce a base map showing one feature (such as the location of Australian rainforests) and then place a piece of tracing paper or plastic sheet over this base map showing the other feature you are investigating (such as areas with a moist tropical climate).



From Mongabay.com



From Mongabay.com

Source 13 An overlay map showing the location of Australian rainforests on a base map (top) and areas with a moist tropical climate on an overlay (bottom)

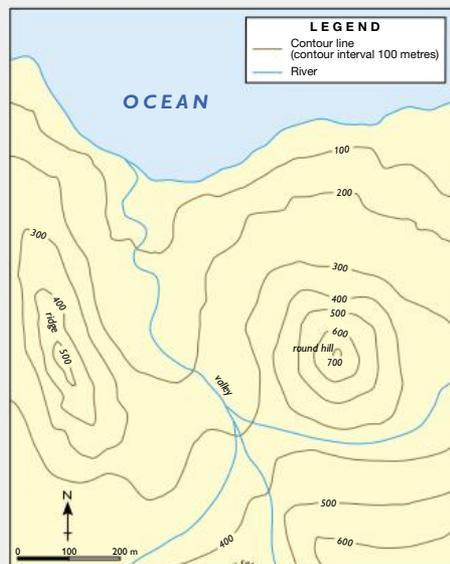
More complex maps

Over the course of the year you will also be working with a number of other, more complex maps. You won't necessarily be creating these maps yourself, but you will be learning how to make sense of the information they provide. These maps include:

Topographic maps

Topographic maps show the shape of the land (such as the shapes formed by valleys, hills and ridges) by using **contour lines**. Numbers on some of the contour lines show the height of the land above sea level. The closer together the contour lines are, the steeper the land. Symbols and colours are also used on topographic maps to show other natural features (such as forests, rivers and lakes) and built features (such as towns, roads and mines). The contour patterns of three common features are shown below the topographic map in Source 14.

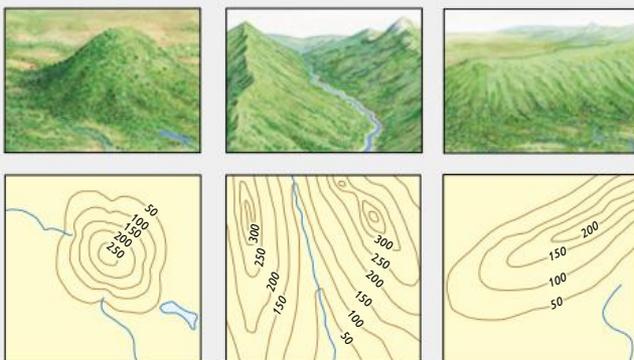
TOPOGRAPHIC MAP SHOWING A ROUND HILL, A VALLEY AND A RIDGE



A ROUND HILL

A VALLEY

A RIDGE



Source 14

Source: Oxford University Press

Weather maps

Weather maps show conditions in the atmosphere, such as air pressure, wind speed and wind direction. They also show the size and location of warm and cold fronts. Weather maps are also known as synoptic charts. They are most commonly seen on the nightly news.



Source 15 Weather maps feature in the nightly news on television

Thematic maps

Thematic maps show a particular theme or topic; for example, the distribution of resources (such as coal and gas), the different types of forests around the world, access to safe drinking water, or the types of crops and animals farmed in Australia.

THEMATIC MAP OF AUSTRALIA SHOWING TYPES OF ANIMALS AND CROPS GROWN



Source 16

Source: Oxford University Press

Geographic Information Systems (GIS)

Geographic Information Systems (GIS) are a way of creating, viewing, organising and analysing geographical information with the use of a software application. GIS are an exciting development in the world of geography because they allow geographers to access and share an incredible amount of data and look at the world in new ways. GIS are made up of three elements:

- digital base maps
- data that is layered over the base map (such as a chart, overlay or table)
- a software application or platform that links these elements together and allows the user to interact with all of this information.

GIS combine satellite images, graphs and databases to allow you to identify patterns and **trends** so that you can gain a better understanding of the world around you. They allow you to turn different layers of data on and off in order to isolate exactly what you are looking for. You can even create and share your own maps, look at 3D models of areas and record video simulations, known as flyovers.

GIS are already a part of many people's everyday life. Governments, companies and individuals all around the world use GIS. There are a number of GIS platforms available today, but one of the most commonly used and free GIS is Google Earth.

Essential features of maps

BOLTSS

Regardless of the type of maps you are creating or interpreting, all will share some common features. There are six features that ensure every map is drawn in a clear, concise and accurate way. To help you

remember these features, you can use a mnemonic (memory aid) that consists of the first letter of each of the features. Together, these six letters make up the word **BOLTSS**.

Source 17 shows a map of Australia that is held together with BOLTSS.

B **Border** – an outline or box drawn around the map

O **Orientation** – an indication of direction, usually shown with a north arrow or compass rose

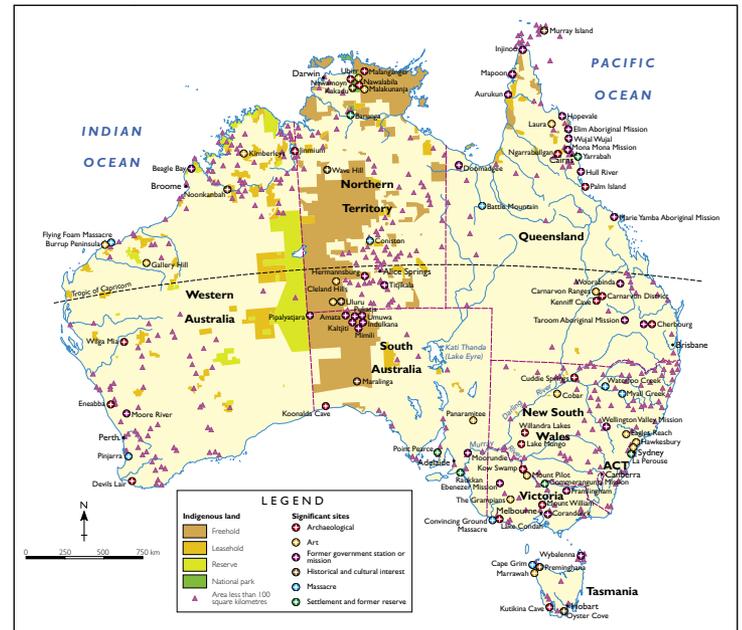
L **Legend** – an explanation of the symbols, colours and patterns used on the map (also known as a key)

T **Title** – a heading that describes the map and what it is showing

S **Scale** – a way of indicating what **distances** on the map represent in the real world. Scale can be shown in three different ways: as a written scale, a line scale or a ratio. Source 20 shows the three ways scale can be represented on a map.

S **Source** – where the information used to create the map came from. If these details are not known, simply write 'Source: unknown'. If you have created the map from your own data, simply write 'Source: own map' or 'Source: [add your name]'.

AUSTRALIA: INDIGENOUS LAND AND SITES, 2006



Source 17 A map of Australia showing all the features of BOLTSS
Source: Oxford University Press

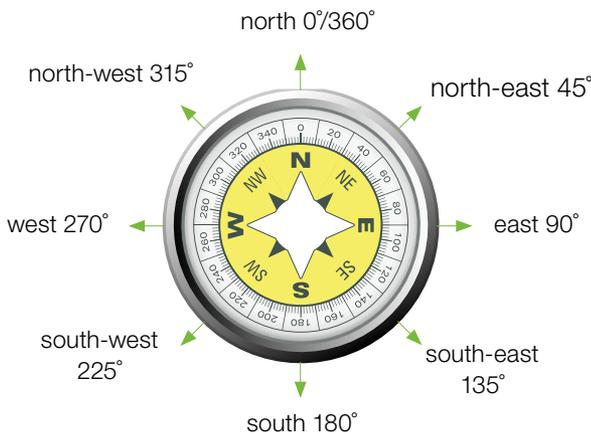
Direction

Direction must always be shown on maps because it enables the user to work out the location of features shown. Direction is shown on maps by the use of compass points. A **compass** is an instrument with a magnetised needle that will always point to the Earth's magnetic field near the north pole (known as **magnetic north**). The face of a compass shows a circle made up of 360 degrees (see Source 18).

The four main directions on a compass are north, south, east and west. These are known as **cardinal points**. Most maps are oriented to north. Once north has been established, you can find the other points of the compass.

Using compass points is an accurate way of giving directions because the compass always points to magnetic north no matter which direction you are facing.

Compass bearings provide an even more precise way to give directions. A bearing is an angle that is measured clockwise from magnetic north. The bearing of magnetic north can be either 0 degrees or 360 degrees, the bearing of south is 180 degrees, the bearing of east is 90 degrees and the bearing of west is 270 degrees. These bearings are also shown in Source 18.



Source 18 A compass face showing cardinal points and compass bearings

Scale

We use **scale** to shrink or increase real world features so they will fit into a space. Model cars are scaled down in size and proportion from real cars.

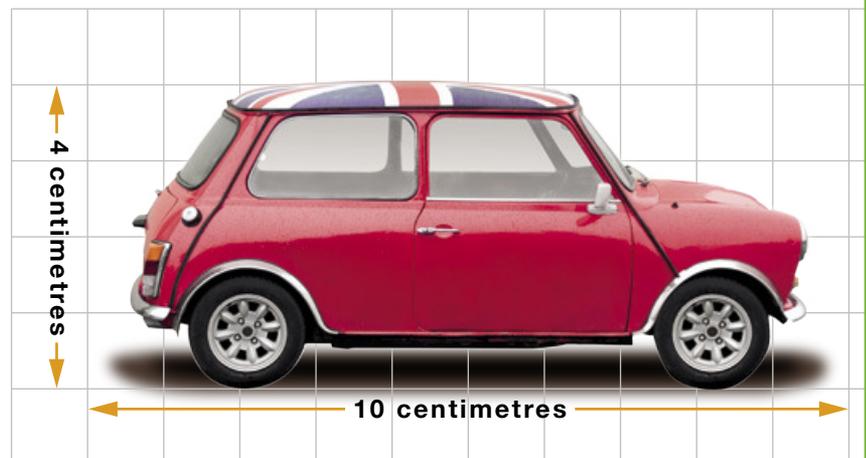
The model shown in Source 19 looks like the real car, only smaller. It is a 1:35 scale model. This means that 1 centimetre on the scale model is equal to 35 centimetres on the real car. If 1 centimetre represents 35 centimetres, then 10 centimetres (the total length of the model) represents a total length of 350 centimetres (or 3.5 metres) on the real car.

Scale on maps

Maps are scaled representations of real areas. These representations have been designed to fit on a piece of paper or on a computer screen. Maps look the same as the real areas they are representing, just reduced to a size you can work with. Scale on maps allows you to work out the distances in the real world.

Look at the map of Tasmania (Source 20). In the bottom left-hand corner it shows the three types of scale that can be used on maps and how they work:

- **Written scale** – A written scale tells you how much a distance on the map represents on the ground. The written scale on Source 20 is '1 centimetre on the map measures 30 kilometres on the ground'. Using this information we can easily work out that 5 centimetres on the map would be equal to 150 kilometres on the ground, and so on.
- **Line scale** – A line scale is a numbered line that acts like a ruler. You can use it to measure distances on the map. The Source 20 line scale shows 1 centimetre is equal to 30 kilometres.
- **Ratio scale** – A ratio scale shows scale in numbers. The ratio scale for Source 20 is 1:3 000 000, so 1 unit (that is, 1 centimetre) on the map represents 3 000 000 centimetres on the ground. Of course, 3 000 000 centimetres is equal to 30 kilometres.



Source 19 This model car is 35 times smaller than the real car. This scale is expressed as 1:35.

Using line scale to measure distances

Scale is a handy tool to help you study the world around you from inside your classroom. Look at Source 20. You will notice that all the features on the map have been shrunk by the same amount so that they fit on the page.

You can use the line scale to measure the distance between two points 'as the crow flies' (that is, in a straight line) by following these steps:

- Step 1** Place the straight edge of a sheet of paper over the points you wish to measure.
- Step 2** Mark the starting and finishing points on the paper.
- Step 3** Hold the edge of the paper against the line scale to work out the real distance between the two points.

Apply the skill

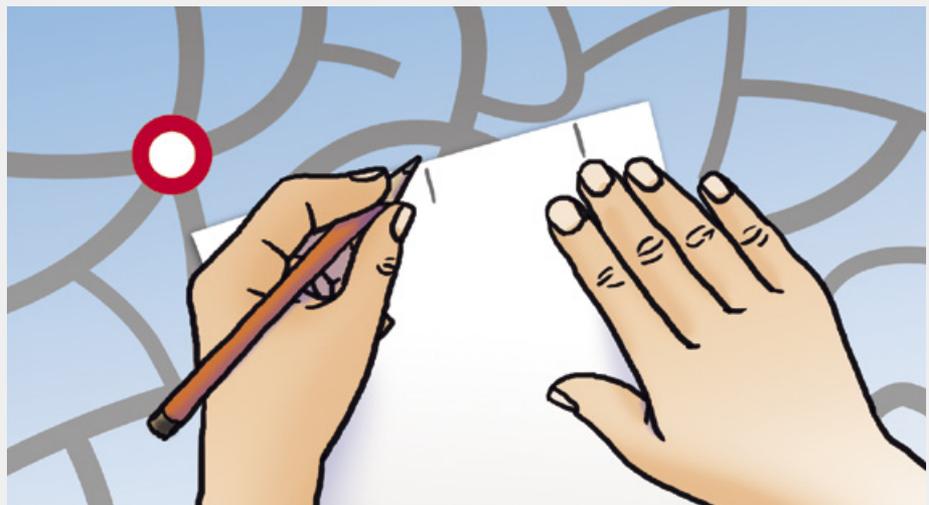
- 1 Use Sources 20 and 21 to answer the following questions.
 - a How far is it from the peak of Cradle Mountain to the centre of Hobart as the crow flies?
 - b How far is it from Devonport in the state's north to Queenstown in the west as the crow flies?
 - c How long is Lake Gordon from north to south?
 - d How wide is the state of Tasmania at its widest point?

TASMANIA



Source 20

Source: Oxford University Press



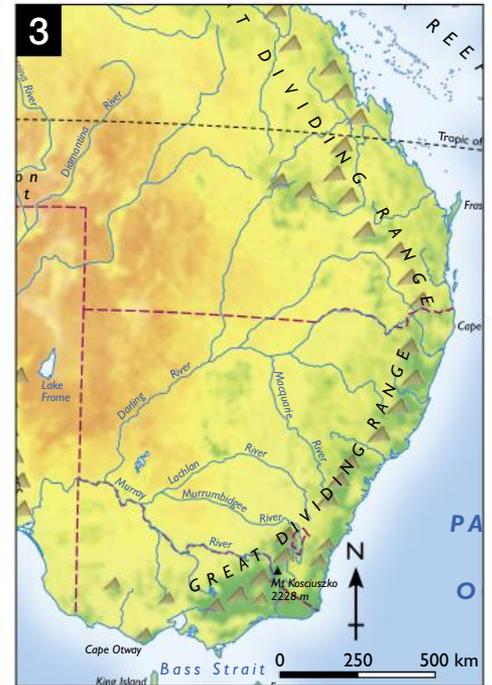
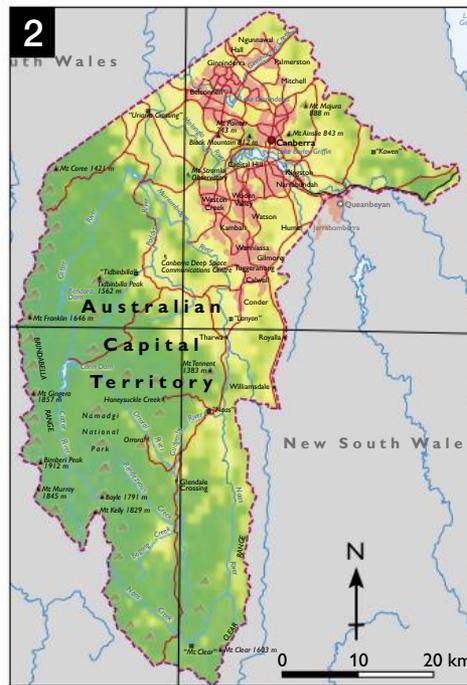
Source 21 Measuring straight distances on a map using a sheet of paper

Comparing map scales

Maps are often shown at different scales depending on the amount of detail they need to show. Source 22 shows three maps at different scales:

- Map 1 is a large-scale map. It shows a large amount of detail but only a small area. You can see the city area (in pink) and Lake Burley Griffin.
- Map 2 is a medium-scale map. It shows a medium amount of detail and a medium area. You can see the whole of the Australian Capital Territory (ACT).
- Map 3 is a small-scale map. It shows a small amount of detail but a large area. You can only just see the border of the ACT.

ACT AND EASTERN AUSTRALIA



Large-scale maps show detailed information about a small area.

Small-scale maps show general information about a large area.

Source 22

Source: Oxford University Press

Remember:

- Large-scale maps show a *large* amount of detail, but a *small* area.
- Small-scale maps show a *small* amount of detail, but a *large* area.

Locating places on maps

Maps are used for many different purposes, but the most commonly used maps help us to find things we are looking for. These maps are often overlaid with a set of lines that form a grid. These gridlines divide the map into smaller areas and help us find places more easily. There are a number of ways in which you can locate things on maps and a number of methods you can use to help other people find these places. Some of these methods will give you a general idea of where something is, while others can help you pinpoint the exact location of something.

SURFERS PARADISE STREET MAP



Source 23

Source: Brisway

Grid and area referencing

Alphanumeric grid referencing

In maps that use **alphanumeric grid** referencing the spaces between gridlines are labelled with letters and numbers. The letters appear along the bottom (or top and bottom) of the map while the numbers appear down the left-hand side (or both sides) of the map. For example, in Source 23 the grid reference for the Paradise Centre is J6.

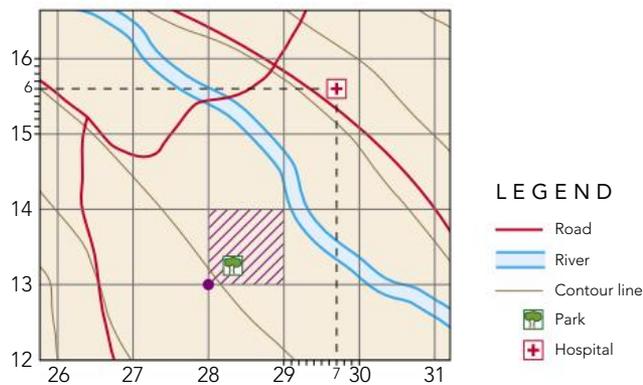
Area referencing (AR)

The area referencing (AR) method is used on topographic maps that have gridlines. Each line is given a two-digit number. The lines that run up and down the map are known as **eastings** (because the numbers increase as you move east). The lines that run across the map are known as **northings** (because the numbers increase as you move north). A four-figure area reference will pinpoint the bottom left-hand corner of the grid square in which you will find the feature. The eastings are given first, then the northings. For example, in Source 24 the park is located in AR2813.

Six-figure grid referencing (GR)

Six-figure grid references (GR) help locate exact points on a topographic map. The area between each easting and the next is divided into ten further parts (tenths), as is the area between each two adjacent northings. This is just like adding a finer set of gridlines over the existing gridlines allowing you to be very specific about where things are within each grid square. As with area referencing, the eastings are given first, then the northings. The difference is that one more figure is added to the easting and one more figure is added to the northing. This makes six figures in total. For example, in Source 24 the hospital is located at GR297156.

TOPOGRAPHIC MAP EXTRACT SHOWING AR AND GR



Source 24

Source: Oxford University Press

Latitude and longitude

Maps that show large areas of the Earth's surface (such as world maps) use a set of imaginary lines that form a grid. These gridlines, known as **latitude** and **longitude**, help us to locate places accurately.

Lines that run from east to west are known as lines (or parallels) of latitude. Lines that run from north to south are known as lines (or meridians) of longitude. Each of the lines is identified by degrees rather than distance because the world is round, not flat.

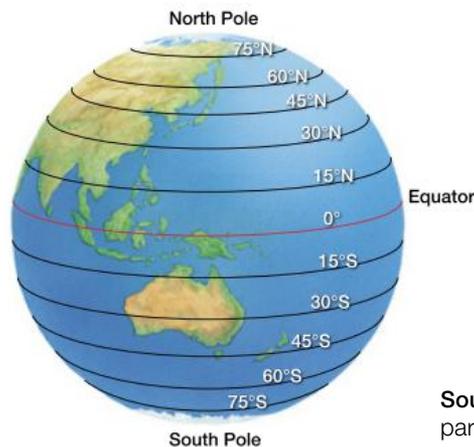
The line of latitude midway between the north pole (90 degrees north) and south pole (90 degrees south) is known as the **Equator**, which is located at 0 degrees latitude. It divides the Earth into the northern hemisphere and southern hemisphere.

Lines of latitude are measured in degrees north and south of the Equator.

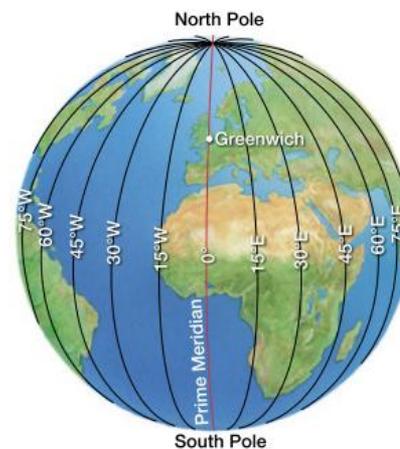
Lines of longitude are measured east and west of the Greenwich meridian (also known as the **Prime Meridian**), which is located at 0 degrees longitude.

Remember:

- Latitude – think 'lat is flat'.
- Longitude – think 'long is long'.



Source 25 Lines (or parallels) of latitude



Source 26 Lines (or meridians) of longitude

Check your learning 1.3

Remember and understand

- 1 What is the difference between primary and secondary sources?
- 2 On your way to school you notice that bulldozers are clearing an area of bushland.
 - a How could this observation form the basis of a geographical inquiry?
 - b Write five different types of questions to assist you in your geographical inquiry into the clearing of this bushland.

Apply and analyse

- 3 There is a proposal to build a new shopping centre.

- a Describe how a geographer would be able to find out what local people thought about the proposal.
- b What two additional issues may be linked to this geographical inquiry into the construction of a new shopping centre? One issue should relate to the natural environment and one should relate to the built environment.

Evaluate and create

- 4 Develop five questions that may assist a geographer in conducting an inquiry into the proposed development of a new shopping centre within their local area. Create a planning table similar to that used in the text for the inquiry into Uluru (Source 2).

1.4 Analysing

Interpreting information

Once you have collected and recorded your data, it is time to identify any trends, patterns or relationships in the information. You will have used questionnaires and surveys to gather visitor statistics, drawn sketches and diagrams, created graphs and tables and taken photographs (all of which are primary data). You will also have collected information from various other sources, such as textbooks, websites, GIS and atlases (all of which are secondary data). Now it is time to look at this information, identify any possible links and relationships and draw conclusions.

There are a number of methods that geographers use to help them during this stage of their inquiries. These include the PQE method.

Using the PQE method

PQE is a tool used by geographers to analyse the data they have gathered (such as maps, tables, graphs and diagrams) and reach conclusions. The letters PQE stand for pattern, quantify and exceptions.

Pattern (P)

In this step, you need to give a general overview of any patterns you may identify.

When looking at any form of data, look for things that stand out or form patterns. A pattern may be a group of similar features on a diagram, a concentration of a particular colour or feature on a map, or a particular shape that is created by data on a column graph. For example, when looking at a physical map of Australia (see Source 1) you might say, 'Most mountains run along the coast in the east.'

Quantify (Q)

In this step, you need to add specific and accurate information to define and explain the patterns.

Quantifying involves using statistics, amounts, sizes and locations to give specific details. For example,

rather than just saying 'Most mountains run along the coast in the east', you would need to quantify this statement. You might instead say 'A mountain range known as the Great Dividing Range extends more than 3500 kilometres along the eastern coast of Australia from Queensland to Victoria. It is the third-longest mountain range in the world.'

Exceptions (E)

In this step, you need to identify anything that does not fit your patterns.

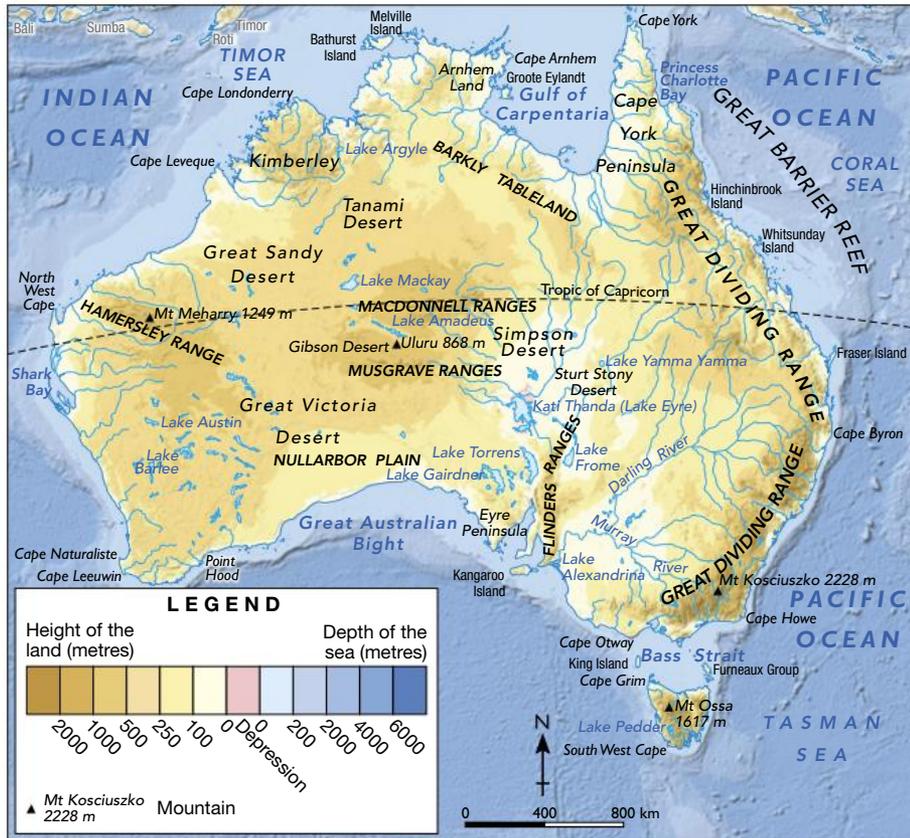
Often you may find that there are things in your data that do not fit into a pattern you have identified. These are called **exceptions**. They also need to be identified and quantified. For example, you might say 'There are a number of other mountain ranges that are not on the east coast. These include the Flinders Ranges in South Australia and the MacDonnell Ranges in the Northern Territory.'

Creating graphic representations

In addition to maps, geographers use a range of other visual representations to communicate information they have collected. These include:

- tables – These allow geographers to present and compare data by organising it under different headings (see Source 2).
- diagrams – These allow geographers to show the features or characteristics of some places or things much more effectively than describing them in words. Certain interesting or complex processes can also be more easily explained and demonstrated with the help of sketches, flow charts or illustrations (see Source 25 and Source 26 on page 25).
- graphs – These allow geographers to compare data and present it in an interesting and attractive way. There are a number of different types of graphs used by geographers for different purposes. The most common of these are explained on the following pages.

PHYSICAL MAP OF AUSTRALIA SHOWING OCEANS AND MAJOR MOUNTAIN RANGES, RIVERS, LAKES AND DESERTS



Source 1

Source: Oxford University Press

Source 2 A table showing the populations of Australian states and territories in 2011

| State/Territory | Population | Percentage of Australia's population |
|------------------------------|------------|--------------------------------------|
| New South Wales | 7 317 500 | 32.3 |
| Victoria | 5 640 900 | 24.8 |
| Queensland | 4 599 400 | 20.3 |
| Western Australia | 2 366 900 | 10.4 |
| South Australia | 1 659 800 | 7.3 |
| Tasmania | 511 000 | 2.3 |
| Australian Capital Territory | 366 900 | 1.6 |
| Northern Territory | 231 200 | 1.0 |
| Australia | 22 693 600 | 100.0 |

Selecting information to analyse

When analysing information it is important that the sources you use are relevant. If your information and data do not meet these criteria, you run the risk of being misled and coming to the wrong conclusion. To get the best result from your geographical inquiry, your information and data should adhere to the following guidelines:

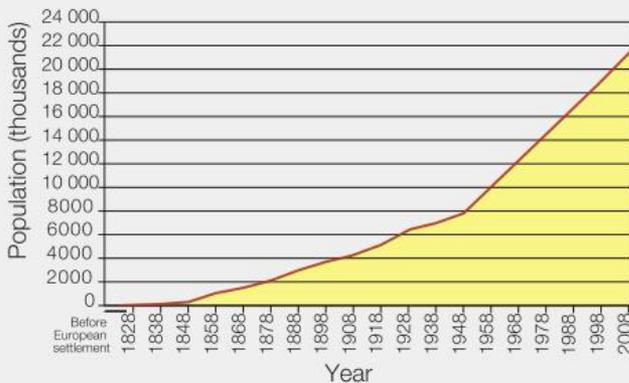
- accurate – There should be no mistakes in your data and your information should be based on observations, not guesses.
- reliable – If you are using a secondary source, it should be from a source you can trust. For instance, the statistics on a government website will be more reliable than the statistics from an unverified blog.
- current – Information or data collected in the 1980s will not be as relevant or useful as data collected today. As we know, the world is always changing, so it is best to have information that is as up to date as possible.
- useful– Make sure the information and data you are using helps you to answer your question. If it is not relevant to your topic, it would be better to analyse other data that will not waste your time or skew your results.

Simple graphs

Graphs are one of the most effective graphical representations when it comes to showing numerical (or quantitative) data. Some kinds of graphs are simple, while others are more complex. This year you will be learning how to create a number of different types of graphs and interpreting the information that they provide. Some of these graphs are described below.

Line graphs

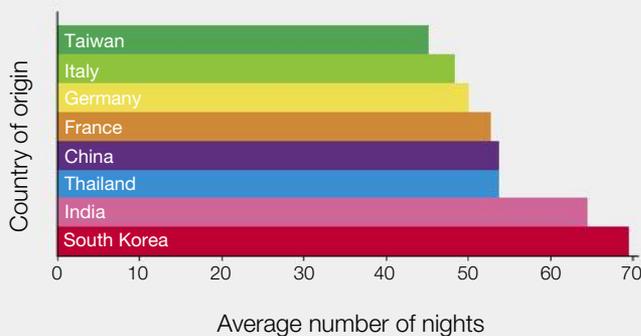
Line graphs show information as a series of points that are joined up to form a line. The line shows a trend or change over time. The horizontal axis (*x*) will usually show units of time and the vertical axis (*y*) will usually show amounts.



Source 3 A line graph showing the increase in Australia's population, 1828–2011

Bar graphs

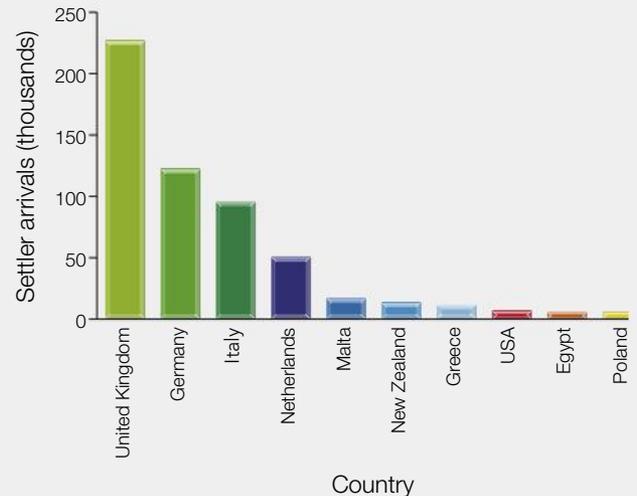
Bar graphs show information as a series of bars that run in a horizontal direction and are stacked one on top of the other. They are usually used to compare quantities.



Source 4 A bar graph showing average number of nights spent in Australia by tourists from different countries, 2009

Column graphs

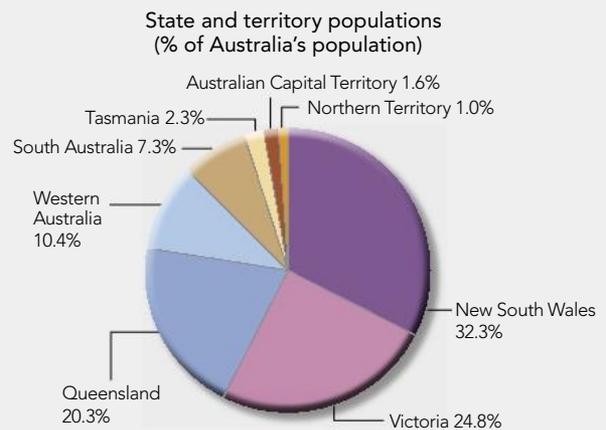
Column graphs are similar to bar graphs, but they show information as a series of vertical columns that are arranged side by side. They are also usually used to compare quantities.



Source 5 A column graph showing top 10 countries of settler arrivals in Australia, 2010–11

Pie graphs

Pie graphs are circular in shape and are divided up so that the information being shown represents the slices of a pie. The circle of 360 degrees represents 100 per cent and each of the slices is a percentage of that. The slices of the pie are organised from largest to smallest in a clockwise direction starting from 12 o'clock.



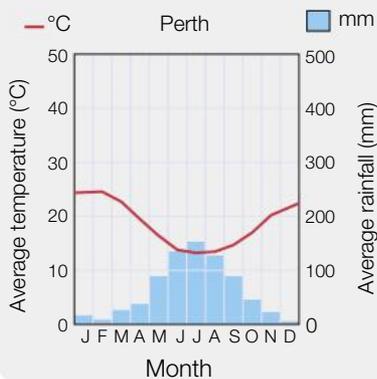
Source 6 A pie graph showing state and territory populations as a percentage of Australia's total population, 2011

More complex graphs

Over the course of the year you will also be working with a number of other, more complex graphs. You won't necessarily be creating these yourself, but you will be learning how to make sense of the information they provide. Some of these graphs are described below.

Climate graphs

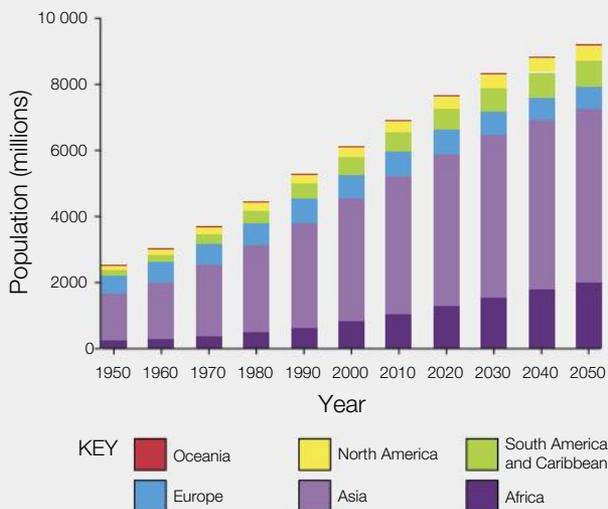
Climate graphs show the average monthly temperature and rainfall for a place over a year. Climate graphs combine line and column graphs. Temperature is recorded as a line graph and rainfall is recorded as a column graph.



Source 7
A climate graph showing the average monthly temperature and rainfall in Perth

Compound column graphs

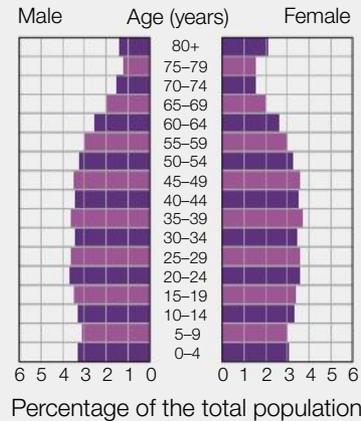
Compound column graphs are a more complex type of column graph in which each column is split into sections so results can be more easily compared.



Source 8 A compound column graph showing the increase in world population by region, 1950–2050

Population pyramids

Population pyramids are bar graphs that show the percentage of males and females in different age groups in a population. They help geographers identify trends in population growth in a country. Population pyramids are organised so that younger age groups are at the bottom and older age groups are at the top. Percentages of males are placed on the left-hand side and percentages of females are placed on the right-hand side.



Source 9
A population pyramid for Australia in 2009. From it you can see, for example, that there are more females than males over the age of 80.

Check your learning 1.4

Remember and understand

- 1 What do the letters PQE stand for?
- 2 How can the PQE method assist us to identify trends, patterns and relationships in geographical data and draw conclusions?
- 3 Why is it important for information and data to be from accurate, reliable or current sources?

Apply and analyse

- 4 Look at Source 1. Use the PQE method to think about Australia's lakes.
 - a Can you identify a pattern?
 - b Can you quantify this pattern?
 - c Are there any exceptions to this pattern?

Evaluate and create

- 5 Look at Source 2 and construct a bar graph or column graph to represent this data graphically. Analyse trends in this data using your graphic representation.

1.5 Evaluating

Drawing conclusions

The next stage of a geographical inquiry is to evaluate what you have learnt in order to draw a conclusion.

There are a number of methods to evaluate your evidence.

Using the SHEEPT method

SHEEPT is a tool used by geographers to help them consider the many factors that may contribute to the patterns identified in their data. When you are examining issues related to your inquiry, it is useful to think about them in terms of these six factors and rank them in order of importance. This will help you reach your conclusions. The letters SHEEPT stand for:

- social (S) – factors relating to culture and people
- historical (H) – factors relating to past events
- environmental (E) – factors relating to the natural environment (including climate, landforms and vegetation)
- economic (E) – factors relating to the earning or spending of money (including income earned from industry and tourism and the cost of building a dam or highway)
- political (P) – factors relating to governments (including laws, regulations and policies)
- technological (T) – factors relating to the availability and use of different types of technology (including the development of greener technologies, alternative energy sources and GIS).

Planning for action

After coming to a conclusion, you may discover that action is needed in order to respond to the issue you have been investigating. There are a number of different ways that geographers can take action to make a change. These include:

- creating a fact sheet or multimedia presentation about the issue to inform your school or community
- using social media to raise awareness and gather support

- emailing your local government representative or Member of Parliament about the issue
- inviting an expert speaker to present at your school assembly
- planning a campaign to raise money for the issue.

Our geographical inquiry into Uluru based around the key inquiry question ‘Is it a good thing that so many tourists visit Uluru?’ may lead us to actively campaign for tourism at Uluru to be managed in a more sustainable way so that this important landmark can be enjoyed by future generations. A good example of action resulting from a geographical inquiry is shown in Source 1.



Source 1 A geographical inquiry found that cigarette butts were a leading cause of litter at Uluru. One of the responses was the introduction of personal ashtrays. These ashtrays are available from the Cultural Centre and carry the logo ‘Don’t let the ranger see your butt’. Park authorities reduced the number of butts littering the area and believe this has also reduced the risk of bushfires.

Check your learning 1.5

Remember and understand

- 1 What do the letters in SHEEPT stand for?
- 2 How can SHEEPT assist us to draw conclusions?

Apply and analyse

- 3 Identify a popular place in your local town or city. Using the SHEEPT method in groups, brainstorm factors that you think might impact the number of visitors to that place.

Evaluate and create

- 4 Research the way in which Uluru is managed and use the SHEEPT method to think more closely about the factors that impact on Uluru. What conclusion(s) can you make about the way in which Uluru is managed?

1.6 Communicating and reflecting

Geographers use a wide range of methods to inform other people about what they have found over the course of a geographical inquiry. After carefully considering their audience and the purpose of the inquiry they may choose to communicate their conclusions in a number of different ways. Some of the methods that geographers use to communicate their findings include:

- graphic forms, such as maps, graphs, and diagrams
 - visual forms, such as **annotated visual displays (AVDs)**, photographs, sketches, satellite images and posters
 - digital forms, such as wikis, Geographic Information Systems (GIS), databases, 3-D models and simulations, and multimedia presentations.
- written methods, such as essays or reports
 - oral forms, such as oral reports, presentations, discussions and debates

Is it a good thing that so many tourists visit Uluru?

NATURAL PROCESSES

Legend

- Conglomerate
- Arkose
- Folded Proterozoic sedimentary rocks
- Igneous and metamorphic rocks
- Palaeozoic rocks
- Alluvial sediments

EROSION

TOURISM AT ULURU

- _____
- _____
- _____
- _____
- _____

EROSION OF ULURU

A simple sketch can break up lots of writing

LOCATION MAP

Always include a location map; remember BOLTSS

Name: _____

Source 1 An annotated visual display (AVD)

Natural processes illustration © Director of National Parks (Parks Australia) www.parksaustralia.gov.au

Reflecting on what you have learnt

The final stage of a geographical inquiry is to reflect on what you have learnt and decide whether any action needs to be taken. Reflecting involves not only looking at what you have learnt but also how it has been learnt. It involves asking critical questions about the way in which your geographical inquiry was conducted and your role in it. One of the best ways to reflect on your progress is to complete a self-evaluation checklist rating your performance at each stage and adding comments.

Using correct geographical terminology

Just like scientists, geographers share a common language. They use geographical terminology to clarify what they are talking about and to share their findings. Source 2 lists and defines some commonly used geographical terms; additional geographical terms can also be found in the glossary at the end of this book.

Source 2 Some useful geographical terms

| Term | Definition |
|-----------------------------|--|
| BOLTSS | the six essential features that should be included on every map: border, orientation, legend, title, scale and source |
| direction | a way of orienting a map, usually shown by the use of compass points, such as north |
| distance | the amount of space between two objects or places, generally measured by using the scale on a map |
| distribution | the way in which things are arranged on the Earth's surface; the pattern formed by the way objects or places are distributed across a space |
| exception | a feature that falls outside a usual pattern or does not follow an observed pattern |
| geographical inquiry | the stages that geographers follow to guide their investigations |
| key inquiry question | a question that helps geographers to plan and focus their geographical inquiries |
| primary data | data collected for a geographical inquiry by a person conducting an inquiry, such as survey data, hand-drawn maps or photographs |
| region | an area of the Earth's surface with a feature that makes it different from surrounding areas |
| scale | a line that indicates the distances on a map as represented in the real world |
| secondary data | data collected for a geographical inquiry from another source, such as textbooks, atlases and government websites |
| spatial pattern | the distribution of features on the Earth's surface that may form particular patterns, such as linear (in lines), clustered or radial (like spokes on a wheel) |
| trend | a general direction in which something is developing or changing (e.g. the trend in population in Australia is positive because the population is growing) |



Creating an annotated visual display (AVD)

One of the most popular ways of presenting and communicating the findings of a geographical inquiry is to construct an annotated visual display (AVD). An AVD combines written text with visual images (such as photographs) and other graphic representations (such as maps, graphs, tables, sketches and diagrams). To create a successful AVD there are a few steps to follow:

Step 1 Gather your data

Make sure that you have collected all the pieces of information and data that you have found and/or created throughout your inquiry. Print your photographs, tidy up your sketches and process any data that you have collected. Tables of raw data are usually much more effective when they are made into graphs (for example, bar graphs or pie graphs). Ensure that all your maps, including sketch maps, have BOLTSS. Each resource (such as a graph, map, sketch, photograph, cross-section or written explanation) must also have a title and, in the case of photographs, a caption.

Step 2 Organise your results

On a large sheet of poster paper, lay out all your information and data. All written descriptions and answers should be typed, or neatly printed, on separate sheets of white paper, not written directly onto the poster paper. This will allow you to arrange them on the poster paper in the most logical and relevant way before you glue them down. The key inquiry question that began your geographical inquiry may guide your final layout. In the following example, the focus question, 'Is it a good thing that so many tourists visit Uluru?', suggests that there will be three main parts to the AVD:

- information about Uluru and its physical features
- tourist statistics and other data that show the effects that visitors are having on Uluru and its surroundings
- an analysis of the data. A conclusion that answers the key inquiry question.

Step 3 Present your results

When you are happy with your layout, design a main heading and other smaller headings. Don't forget to write your name in small, neat letters next to the heading or at the bottom of the AVD. Use glue to stick your resources onto your AVD. You may like to draw borders around some information.

Step 4 Acknowledge your sources

If you have used books or other resources (such as websites) these need to be acknowledged in a bibliography or list of references. This can be stuck on the back of your AVD.

Apply the skill

- 1 Imagine that your class is exploring the Great Barrier Reef as a geographic inquiry with a particular focus on the impact of tourism on this natural environment.
 - a Discuss with a partner some geographic questions about this place.
 - b Select one of these questions that could be used to complete an AVD.
 - c Gather some data in response to this question. There is no need to explore this topic in great depth, but just to practise your communication skills. Your data could be sourced from the Internet, books, magazines or from your own personal experience. You should try to find about three or four images and some writing, such as a newspaper article.
 - d Work with your partner to design your AVD on a piece of A3-sized paper.
 - e Complete your AVD by following steps 3 and 4 of the skill drill.
 - f Display your AVD on the classroom wall and compare it with those of your classmates.

Source 3 A self-evaluation checklist

| The title of my geographical inquiry is: | | |
|---|-----------|----------|
| My geographical inquiry set out to investigate: | | |
| GENERAL POINTS | My rating | Comments |
| I was able to complete all stages of my geographical inquiry | 1 2 3 4 5 | |
| I was able to answer all my key inquiry questions | 1 2 3 4 5 | |
| I was able to plan my inquiry effectively | 1 2 3 4 5 | |
| My maps, graphs, tables and diagrams were clear and accurate | 1 2 3 4 5 | |
| I was able to analyse my data and reach a conclusion | 1 2 3 4 5 | |
| I was able to communicate my findings in an interesting and appropriate way | 1 2 3 4 5 | |
| AREAS OF STRENGTH | Comments | |
| My areas of strength are: | | |
| I'm getting much better at: | | |
| AREAS NEEDING IMPROVEMENT | Comments | |
| The part I found most difficult was: | | |
| I need the most help with: | | |
| IMPORTANT ISSUES HIGHLIGHTED BY MY INQUIRY | Comments | |
| The most important thing I learned from my inquiry was: | | |
| This issue is important to me because: | | |
| This issue is important to my community/country/world because: | | |

Check your learning 1.6

Remember and understand

- 1 Name two ways in which you could 'reflect' on what you have learnt throughout a geographical inquiry.
- 2 Give two reasons why it is important to be able to self-evaluate your work.
- 3 What do the letters AVD stand for?
- 4 Make a list of the things you need to gather before creating an AVD.
- 5 Why is it important to spend time on the layout of the written and visual information that will be shown on your AVD?

Apply and analyse

- 6 Do you think an AVD is an effective way to communicate the findings of a geographical inquiry? Why or why not?
- 7 As part of a geographical inquiry looking at the key question 'Is it a good thing that so many tourists visit Uluru?' your teacher has asked you to take part in a class debate. List three points for the affirmative and three points for the negative. Which side would you rather be on? Why?
- 8 Which form (such as written, oral, graphic, visual or digital) do you think would be most appropriate for

presenting the findings of a geographical inquiry into tourism at Uluru? Why?

- 9 Which do you think are the two most important questions to ask yourself in the self-evaluation checklist (Source 3)? Why?

Evaluate and create

- 10 The completed self-evaluation checklist can look very different depending on what you are investigating. Are there any areas that you think could be improved in Source 3? What questions could be changed or added so that you could improve on the reflection process?
- 11 Your geography class has been asked by the principal to complete a geographical inquiry into the issue of recycling at your school. The principal hopes that by raising awareness of recycling, the school community may be willing to change their behaviour and make the school more sustainable. Conduct a class discussion on the most effective way to conduct the inquiry. At the end of your discussion, make a decision about the best way in which your findings could be presented to the whole school in order to convince them to participate.

1.7 Fieldwork in geography

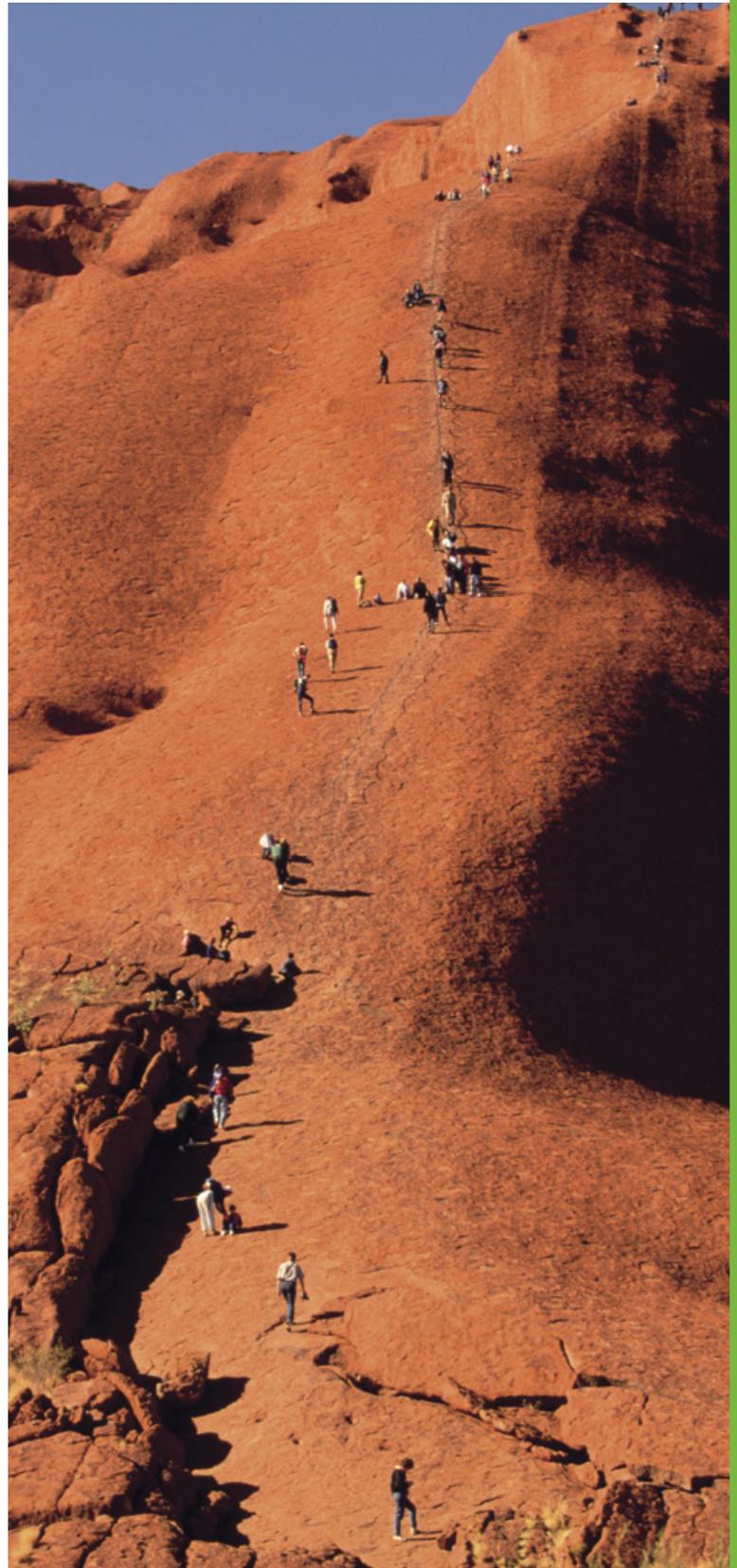
What is fieldwork?

Fieldwork is any geographical study that takes place outside the classroom or, as geographers say, 'in the field'. The 'field' is the source of geographical information (primary data). Fieldwork can be conducted at a number of scales – in your school grounds, within your local community, in another state or even in another country. It is an essential part of geography because the world outside the classroom is the geographer's 'laboratory'. Working in the field provides opportunities for first-hand investigation of both natural and built environments.

Fieldwork provides an opportunity to develop skills associated with observing, measuring and recording. Different forms of geographical data can be collected and then analysed to find relationships between the natural and human environments. The results of a fieldwork investigation are presented and communicated in a fieldwork report.

Fieldwork also involves identifying issues or problems and finding possible solutions. It is a way to engage with the real world and make a contribution to developing more sustainable and fair ways to manage the Earth's resources.

Fieldwork often looks at a key feature, issue or conflict. For example, many tourists visit Uluru each year with the intention of climbing 'the Rock'. In doing so, they ignore the wishes of the traditional owners of the land, the Anangu people (see Source 1). About 35 people have died while climbing Uluru and countless others have been injured or rescued. Geography students visiting Uluru may try to find out why people continue to climb it, and study the impacts of this activity on people and the natural environment.



Source 1 Every tourist that climbs Uluru must pass a sign asking them not to climb the rock out of respect for the traditional owners, the Anangu.

Different types of fieldwork

Most topics you learn about in class can also be studied during fieldwork. The types of fieldwork you conduct will differ according to your topic and the places you visit, but all these activities will help you to better understand your world. Source 2 provides examples of fieldwork locations and activities for a range of topics.

Conducting successful fieldwork

Fieldwork is a type of geographical inquiry, so whenever you take part in fieldwork you will need to follow the stages that are outlined in this toolkit, namely:

- 1 Questioning and researching
- 2 Analysing
- 3 Evaluating
- 4 Communicating and reflecting.

The first stage is vital as this gives you a focus for your fieldwork. It also allows you to make a judgement about whether your fieldwork investigation has been successful.

Stage 1: Questioning and researching

Begin by looking at an issue or location and compile a set of related inquiry questions that you would like to answer. Plan what information you will need and how you will collect it.

Plan your fieldwork so that you can collect the evidence and data that you will need. For example,

take photos, draw sketches, conduct tests, construct questionnaires and surveys. You will then need to use this data to create graphs and maps for analysis. You may also need to consider members of the public, including Indigenous people and their beliefs and feelings about places in the landscape. If your class is planning a field trip to a natural environment, such as a forest or beach, you will need to ensure you do not damage the environment by trampling on plants or animals or by dropping litter.

Stage 2: Analysing

Interpret and analyse the data you have collected and look for patterns or clues that will help you to answer your key inquiry question. There are a number of different tools and methods you can use to do this, including PQE.

Stage 3: Evaluating

Draw conclusions from the evidence you have collected by evaluating the information and data you have. You can then decide if any action needs to be taken. To do this you can use methods such as SHEEPT.

Stage 4: Communicating and reflecting

Communicate what you have found to an audience in the form of a report, a presentation or an annotated visual display (AVD). Think about your fieldwork findings and reflect on ways to improve your investigation process.

| Topic | Possible location | Sample fieldwork activity |
|-------------------------------------|--|---------------------------|
| Water in the world | Local river or stream | Water sampling |
| Liveable cities | Edge of a large city | Observing and describing |
| Changing cities | Urban renewal project | Land use mapping |
| Coastal landscapes | Local beach | Sketching a cross-section |
| Landscape hazards | Local beach | Field sketching |
| Global links | Shopping centre | Using a questionnaire |
| Communities | Local area, including houses and shops | Street surveying |
| Food security | Farming area | Asking questions |
| Endangered environments and animals | Zoo | Comparing environments |

Source 2 Examples of fieldwork locations and activities for a range of topics

A fieldwork example: Gumtree College litter investigation

In the following example, a Year 7 geography class at Gumtree College (7G) decided to conduct fieldwork to explore a problem in their school – litter. As a class, they followed a process of inquiry to understand the issue and try to resolve it.

Stage 1: Questioning and researching

During a brainstorm session, a range of investigation questions were raised by 7G. These included:

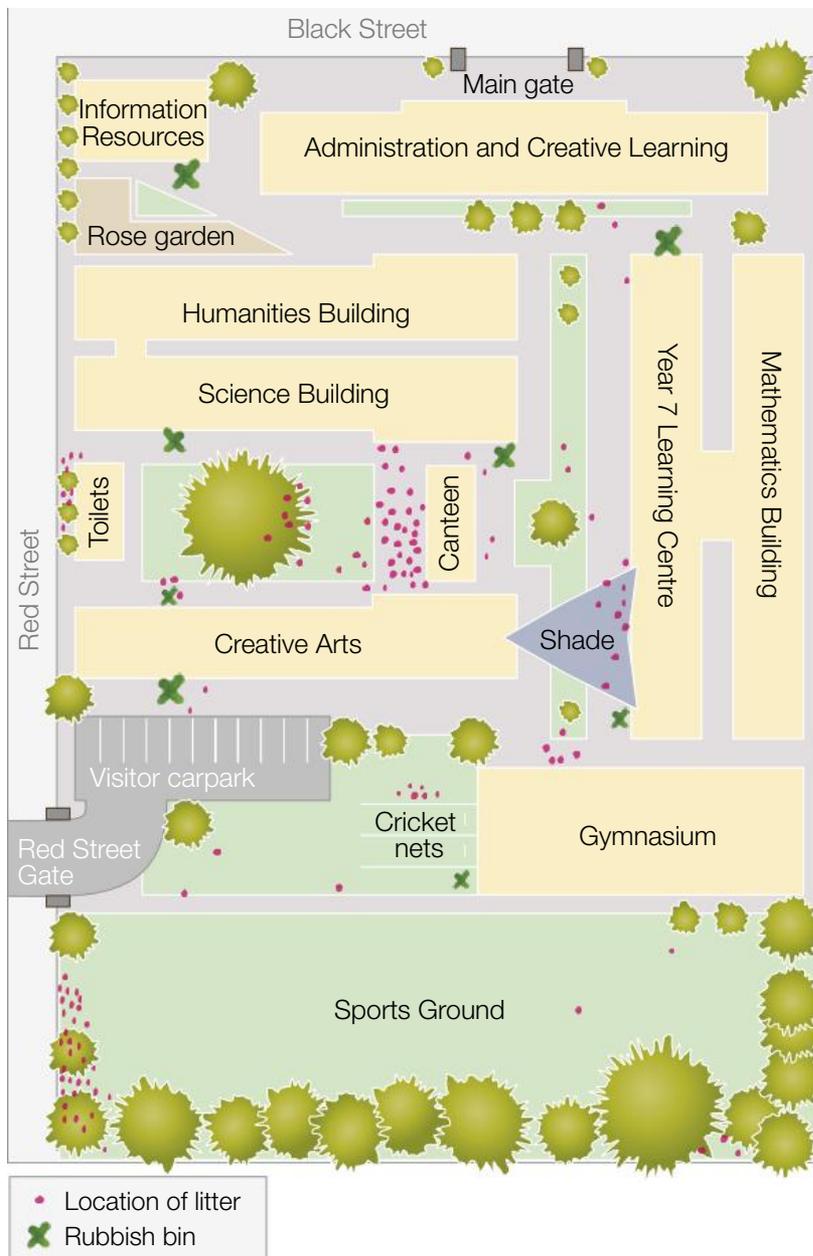
- What are the most popular foods sold in the school canteen?
- Does our school have the worst litter problem in the city?
- Does our school have enough bins in the yard?



Source 3 A questionnaire of students in the canteen



Source 4 A litter survey



Source 5 A sketch map of the schoolyard showing the locations of the bins and litter at Gumtree College

During discussion it was decided that the first question wasn't really about litter. It was also decided that the second question was too broad and complex to answer in one fieldwork inquiry. The class agreed that the third question was the best one for the class to investigate.

The next stage was to plan what data had to be collected in order to answer the question and choose the methods used to collect this data. As geographers, 7G had to carefully consider other people and the environment when collecting data in the field. For example, they had to be careful not to disturb other classes while collecting their data.

After some discussion, 7G decided to gather the information they needed to answer their inquiry question in three ways:

- a sketch map of the schoolyard showing the locations of the bins and the litter – To complete this map, a group of students would look for rubbish at the end of every lunchtime for five days and show their findings on a dot distribution map (see Source 5).
- a litter survey – This would involve another group of students looking closely at the rubbish and classifying each piece of rubbish using certain headings (see Source 4).
- a questionnaire of students in the schoolyard – Another group of students would ask other students about litter and how they disposed of it (see Source 3).

Stage 2: Analysing

After asking questions and collecting evidence through fieldwork, 7G needed to interpret and analyse this data. Their aim was to use the evidence to answer the key question. By looking closely at their map and applying the PQE method, 7G students identified that most of the litter in their schoolyard was located close to the canteen where there were no bins. It was found that in places where bins were provided they were generally used. The results of the student questionnaire were graphed (see Source 6); the results confirmed that 82 per cent of students used bins if they were nearby.

Stage 3: Evaluating

Based on the interpretation and analysis of their data, 7G concluded that there were not enough bins in the schoolyard. The next step for 7G was to evaluate their results and decide if action was needed. The students argued that three new bins

had to be installed in the schoolyard – two near the canteen and one next to the sports ground.

Stage 4: Communicating and reflecting

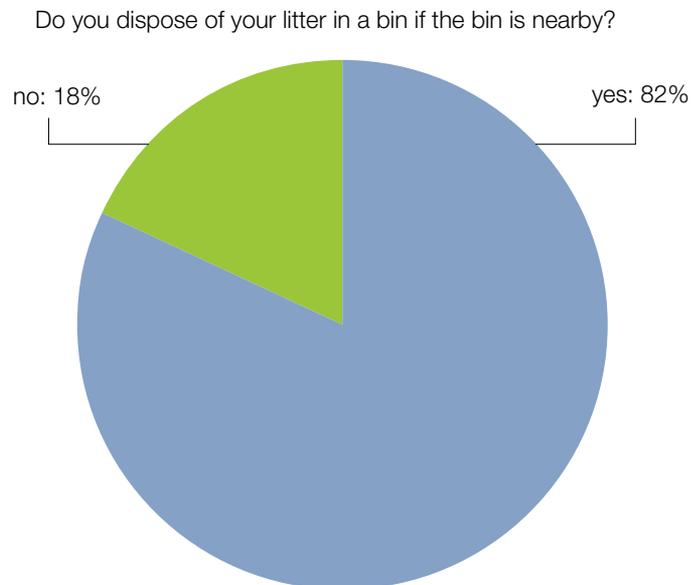
Based on the data they had collected, 7G prepared an AVD about this issue and presented it to the school council. This information was passed on to the school principal.

The bins were installed within a week, but 7G also decided that students at Gumtree College needed to take more responsibility for their own litter and placed some posters in the canteen to remind students why littering was bad for the school.

In the final stage of their fieldwork, the 7G students had a class discussion to reflect on the ways in which they carried out their fieldwork.

Most of the students felt that the process worked well, but a few thought that the key question about bins was a little too simple.

They decided to use the same method to explore a more complex problem in the local community.



Source 6 A pie graph showing the results of the student questionnaire

Check your learning 1.7

Remember and understand

- 1 What is meant by studying geography 'in the field'?
- 2 List two ways in which the results of a fieldwork investigation may be presented.
- 3 What is the main aim of all fieldwork investigations?

Apply and analyse

- 4 In what ways did 7G gather the information they needed to answer their fieldwork question?
- 5 Which of these methods do you think would have given them the most valuable and reliable data? Why?

Evaluate and create

- 6 Look again at the geographical questions shown in Source 1 on page 13. Imagine that you are on a field trip to Uluru to study the impact of visitors on the natural and cultural environment.
 - a In small groups, decide on an issue related to Uluru that you would like to investigate.
 - b Generate a set of inquiry questions and decide on the one you would most like to explore in detail.
 - c Create a set of questions for a visitor questionnaire that you think will help you get the information you need to answer your key inquiry question.
 - d Share your key inquiry question with the class and read out the questions you decided to include in your visitor questionnaire. What do your classmates think of your ideas?

Water in the world

Water in the world

A resource is anything we use to satisfy a need or a want. Resources we use from the natural world are called environmental resources. All life on Earth depends on these environmental resources to survive. The water we drink, the Sun we depend on for light and warmth, the soil we use to grow our crops, and the trees we rely on to produce the oxygen we breathe are all environmental resources. As the world's population grows, we continue to place more and more pressure on these resources. The availability of many of these environmental resources (including oil, forests and, of course, fresh water) is becoming increasingly uncertain.



2A

How is water an environmental resource?

- 1 Which environmental resources do we need to survive?
- 2 How are the people in the photograph (Source 1) using the Ganges River as a resource?

2B

How does water connect and affect places?

- 1 How do you think the Ganges River connects places in India?
- 2 List three ways that water from the Ganges River might be used.



chapter

2

Source 1 Hindus in India believe that bathing in the holy waters of the Ganges River gives them spiritual blessings.

2C

How much water do we have?

- 1 Water covers about 70 per cent of the Earth's surface. Why, then, do we have a shortage of water to drink and to wash in?
- 2 Where do you think the wettest and driest places in Australia might be found?

2D

How do we manage water?

- 1 Why do you think the Ganges River is difficult to manage?
- 2 Make a list of strategies that you personally would put in place to use less water.

2.1 Environmental resources: an overview

Over thousands of years, humans have developed ways of life that depend on almost all environmental resources found on Earth. Water from rainfall, minerals from rocks, and food from the forests and oceans have allowed us to build homes, farms, cities and highways all over the world. We have found and used resources in almost every corner of the Earth. Oil is drilled from beneath polar **ice caps** and water is drilled from far below barren **deserts**. Deep in the rainforests we have found plants that can cure illnesses and we have even worked out how to generate electricity from the water flowing in our rivers.

Types of environmental resources

Geographers divide all of the environmental resources on Earth into three types.

Renewable resources

The first type – **renewable resources** – will replenish themselves naturally over time if we do not use them too quickly.

The trees in a forest are a good example of a renewable resource. We can cut them down for wood, but they will grow back in time. We just need to manage them carefully.

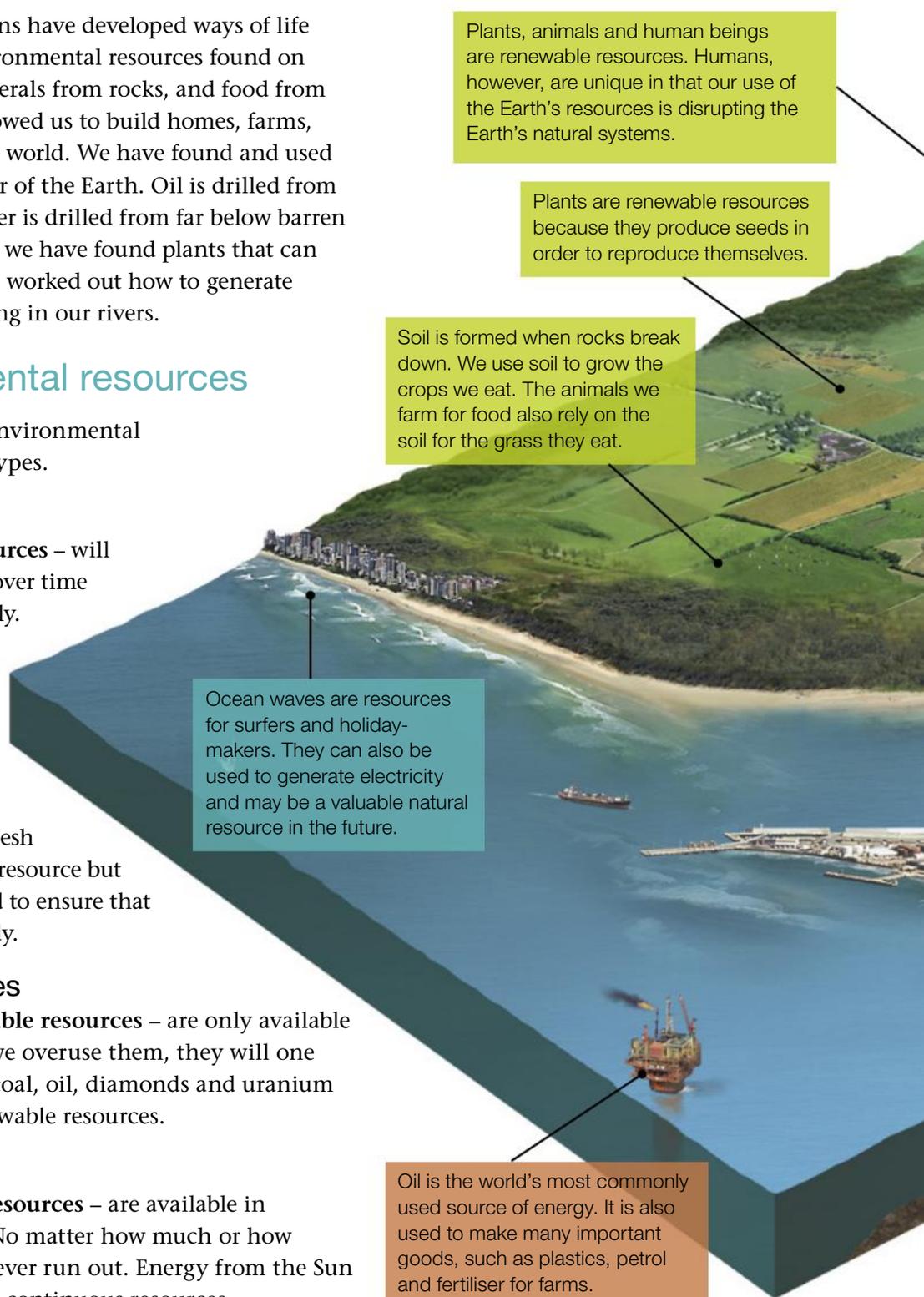
In countries such as Australia, fresh water is considered a renewable resource but it needs to be carefully managed to ensure that enough is available for everybody.

Non-renewable resources

The second type – **non-renewable resources** – are only available in limited (finite) amounts. If we overuse them, they will one day run out. Minerals such as coal, oil, diamonds and uranium are good examples of non-renewable resources.

Continuous resources

The third type – **continuous resources** – are available in unlimited (infinite) amounts. No matter how much or how often we use them, they will never run out. Energy from the Sun and wind are both examples of continuous resources.



Plants, animals and human beings are renewable resources. Humans, however, are unique in that our use of the Earth's resources is disrupting the Earth's natural systems.

Plants are renewable resources because they produce seeds in order to reproduce themselves.

Soil is formed when rocks break down. We use soil to grow the crops we eat. The animals we farm for food also rely on the soil for the grass they eat.

Ocean waves are resources for surfers and holiday-makers. They can also be used to generate electricity and may be a valuable natural resource in the future.

Oil is the world's most commonly used source of energy. It is also used to make many important goods, such as plastics, petrol and fertiliser for farms.

2A How is water an environmental resource?

Types of environmental resources:

- Renewable resources
- Non-renewable resources
- Continuous resources

The amount of oxygen in our atmosphere stays about the same because it is constantly recycled through plants, animals and oceans.

In some parts of the world, electricity is generated from heat within the Earth. This is known as **geothermal energy**.

Wind is used to power ships and windmills and to produce electricity.

The Sun provides the energy for plants and animals to grow and forms the basis of everything we eat. It also evaporates water, setting the water cycle in motion.

Even gravity is a resource. Without gravity, seeds from trees and plants would never fall to the ground and grow into plants. There would also be no rain to help them survive.

Forests are a renewable resource that is under serious threat. Most of the world's natural forest cover has been cleared or logged.

Fresh water is vital for all life forms on Earth, including plants, animals and humans.

Most of Australia's electricity comes from the burning of coal. Coal is an important energy resource in many countries.

Minerals are used as a resource in many ways. Uranium is just one of thousands of minerals mined around the world. It is being used at this nuclear power station to produce electricity.

Check your learning 2.1

Remember and understand

- 1 What are the three main types of resources? Give two examples of each type.
- 2 Why is it important to look after renewable resources, such as fresh water?
- 3 Describe how you may have used a non-renewable resource in the last hour.
- 4 What problems might societies around the world face if people continue to rely heavily on non-renewable resources?

Apply and analyse

- 5 Collect pictures of continuous resources, non-renewable resources and renewable resources from newspapers, magazines or the Internet. Sort these pictures into groups and describe how each resource is used by humans.

Evaluate and create

- 6 What do you think is the most important resource shown in Source 1? Give some reasons for your answer and be prepared to discuss this with a partner and with the class.

Source 1 An overview of the many types of environmental resources.

2.2 The importance of water

Water is a natural resource, which means it is not made by humans, but rather found in nature. Since the beginning of human history, we have relied on water. We drink it in order to survive; we wash, cook and clean with it; and we use it to grow our food and produce electricity. In this way, water is arguably our most precious resource. Life on Earth without it would be impossible. One of the challenges facing Australia today is that we use too much of this natural resource.

Only 12 per cent of the water consumed in Australia is used in our homes and gardens, whereas 70 per cent is used to irrigate farms. This **irrigation** provides us with much of the food we eat, so it must be included when we think about how much water each of us personally consumes. When you add this water to the amount used to make other products we use every day, such as shampoo and toothpaste, every Australian is responsible for using over 1 million litres of water per year! Source 1 outlines the various ways in which we all use water.

Spiritual uses

Water holds a special significance for almost all world religions. It often plays a key part in religious ceremonies.

Domestic uses

The average Australian household uses over 350 litres of water a day for drinking, preparing food, washing, cleaning, flushing toilets, cleaning cars, and watering lawns and gardens. Toilets and bathrooms account for about 40 per cent of this domestic water use.

Firefighting

Firefighters around the world rely heavily on a constant supply of water in order to carry out their work.

Irrigation of parks, gardens and sporting grounds

Many parks, gardens and sporting grounds, including football ovals, rely heavily on water in order to survive. In dry areas, water is often taken from drinking storages to keep them green and healthy.

Environmental needs

As well as being used for human **consumption**, fresh water is a vital part of the natural environment. Taking too much water from a river can cause many environmental problems, such as weed growth, fish deaths and salt build-up.

Irrigation of crops and pastures

Irrigation accounts for most of the world's water use. In some arid areas, including many parts of Australia, irrigation is used to grow crops. So water provides us with our food as well as our drink.

Fishing

Commercial and recreational fishing depends on clean oceans, rivers and lakes.

Source 1 In Australia we use large amounts of water in many different ways.

Power generation: coal-fired and nuclear power

Virtually all power stations use large quantities of water. Coal-fired power stations heat water to produce steam that turns turbines to create electricity. Water is also used to cool the station. Nuclear power plants operate in much the same way.

Power generation: hydroelectric power

Electricity can be generated from the energy of moving water. Usually, to do this a dam must be constructed across a river and a lake formed behind it. This allows the river's flow to be controlled and released through the dam to produce electricity.

Snow-making

Artificial snow-making is important in countries such as Australia where natural snowfalls can be infrequent. However, many countries with more regular snowfalls now also use snow-making machines in order to improve conditions and attract more tourists.

Navigation and trade

Large rivers (such as the Nile in Egypt, the Rhine in Europe and the Yangtze in China) have been used for centuries for trade, as they provide a fast method of transporting goods between regions and countries.

Construction and industry

The construction industry relies heavily on water in order to make concrete and many building supplies, such as bricks. Many industrial processes use large quantities of water for cooling and cleaning.

Recreational activities

Recreational activities (such as water-skiing and swimming) generally have little impact on the quantity and quality of fresh water. Pollutants in the water from industry upstream can affect water quality and make the water unsuitable for recreation.

Mining

The mining industry relies heavily on water to cool machinery, enable drilling and process minerals and iron ore taken from the ground.

Check your learning 2.2

Remember and understand

- 1 What activity uses the most water in Australia? How much of our water does it use?
- 2 How can water be used to help create electricity?
- 3 Using Source 1, categorise each water use shown as either an off-stream use (in which water is removed from its source, either by pumping or diversion) or an in-stream use (in which water remains in place).
- 4 What other water uses can you think of?

Apply and analyse

- 5 Using Source 1, identify two water uses that compete with one another and so cannot easily exist beside one another.

2.3 Where water comes from

Water is one of our most precious environmental resources. Without it, nothing can survive. It is an essential, renewable resource that occurs naturally on Earth. It can exist as a solid (such as ice in a **glacier**), a liquid (such as water in a river) or a gas (such as steam). Fresh water is an available resource when in liquid form and a potential resource as a gas or a solid. Liquid water is constantly being recycled through the atmosphere, rivers and oceans in a natural system known as the **water cycle** (see Source 2).

In the water cycle, water from the oceans and lakes is heated and evaporated by the Sun. The evaporated water vapour, which is like steam, then rises until it reaches the cooler parts of the atmosphere. Cold air cannot hold as much moisture as warm air, so the water vapour turns back into liquid water in a process known as **condensation**. These drops of water then form into clouds, which may be carried over land by winds and forced to rise. The colder air can no longer hold the condensed droplets and they fall as rain. The rainwater finds its way back to the world's lakes and oceans through rivers and streams and the process begins again.

As you can see in Source 2, rain falls when wet air masses are forced to rise. There are three reasons that air masses rise. Each of these will produce different types of rainfall at different places on the Earth's surface.

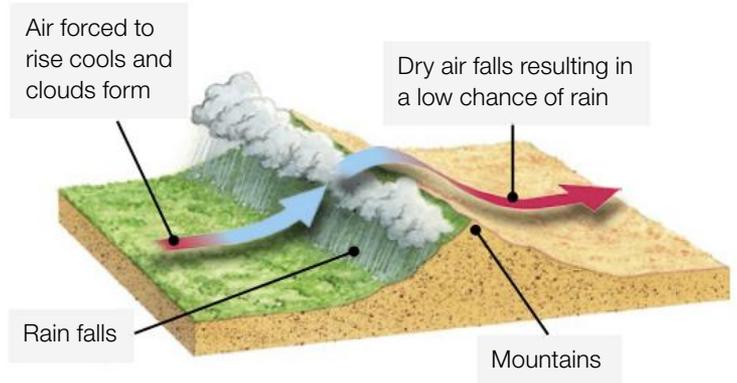
keyconcept: Interconnection

The water cycle

The water cycle links together large areas of the natural environment (see Source 2). The world's oceans, mountains, rivers and atmosphere are all important parts of this cycle. The water cycle links together the natural and human environments because water is so central to all human activities. The presence of water is key when settling new farms and cities. For more information on the key concept of interconnection, refer to page 8 of 'The geography toolkit'.

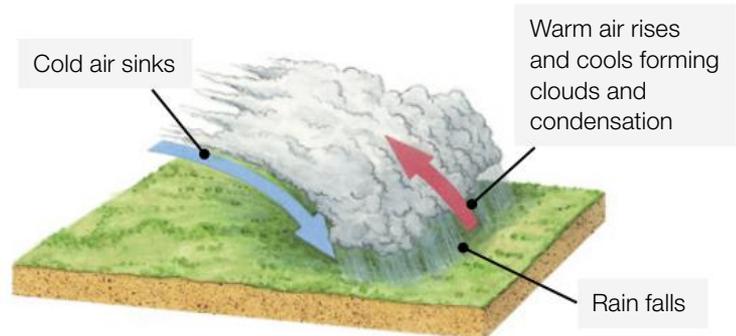
Orographic rainfall

Air is forced to rise due to the height of landmasses, such as mountains. As the air cools, condensation forms, producing rain. As the air begins to fall from the high land, it warms up, creating dry regions.



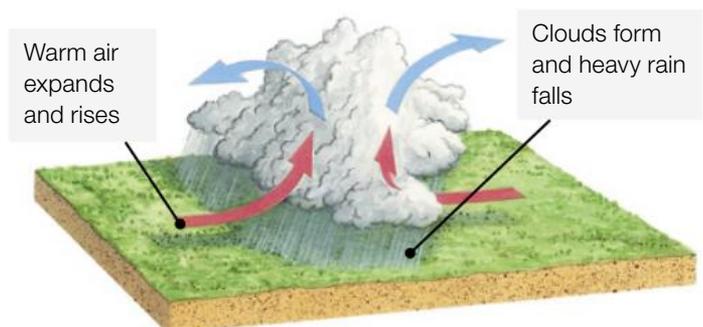
Frontal rainfall

Two air masses meet and the cooler air mass wedges itself under the warmer air mass. This forces the warm air to rise and cool, causing condensation and rain along a distinct line.

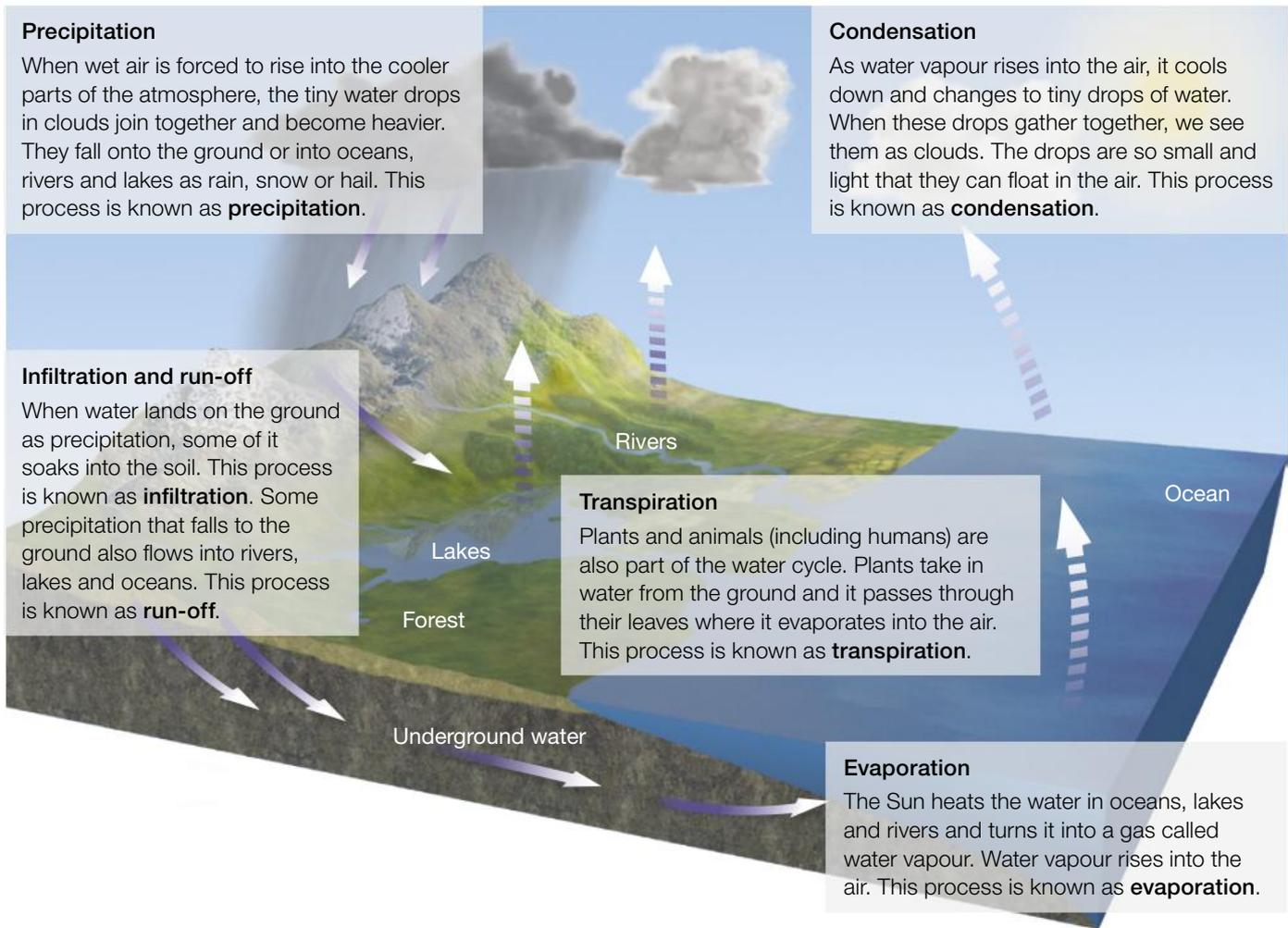


Convective rainfall

Temperatures during the day warm the ground causing warm air to rise rapidly and condense at high altitude. This produces heavy rain and thunderstorms.



Source 1 Different types of rainfall



Source 2 The stages of the water cycle

Check your learning 2.3

Remember and understand

- 1 What is the water cycle?
- 2 What causes water to fall as rain?
- 3 List these words in the correct order within the water cycle: precipitation, condensation and evaporation. Now write a definition for each in your own words.

Apply and analyse

- 4 What is the difference between frontal rainfall and orographic rainfall? How are they similar?
- 5 Why do you think the wettest place in Australia is near Tully on the eastern slopes of the Great Dividing Range in Queensland? You might like to find Tully in an atlas to help with your answer.
- 6 The water cycle helps us to understand how water moves in our world but it can also help us understand how rivers change the landscape. How do you think the rivers shown in Source 2 have changed this landscape?
- 7 What type of rainfall do you receive most often in the place where you live? Why will the answer differ for students who live in other parts of Australia?
- 8 Salt water in oceans cannot be used to drink or water crops. Is salt water an available or potential resource?

Evaluate and create

- 9 Imagine that you are a water droplet in a cloud. Describe your journey through the water cycle in language that a young child would find interesting. Here is a start: 'Floating along with billions of my closest friends, I thought nothing would ever change ...'

2.4 Accessing water resources

Although the surface of the Earth is covered with water, only a tiny percentage of that water is fresh and available for consumption. Typically this is found in surface water, such as lakes and rivers. Source 1 shows the breakdown and availability of this water. As populations grow and more water is used, people are also using groundwater locked away in underground **aquifers**. This water supports every man, woman, child, animal and plant on Earth. This makes water our most precious resource.

To further complicate matters, the available fresh water is not evenly distributed across the planet. Some areas of the world have much more than they need, while other areas do not have enough.

Countries with large rivers, such as the Amazon River in Brazil, and those with high rainfall, such as Indonesia and Papua New Guinea, can be thought of as being 'water rich'. Other countries, including Australia, can be considered to be 'water poor'.

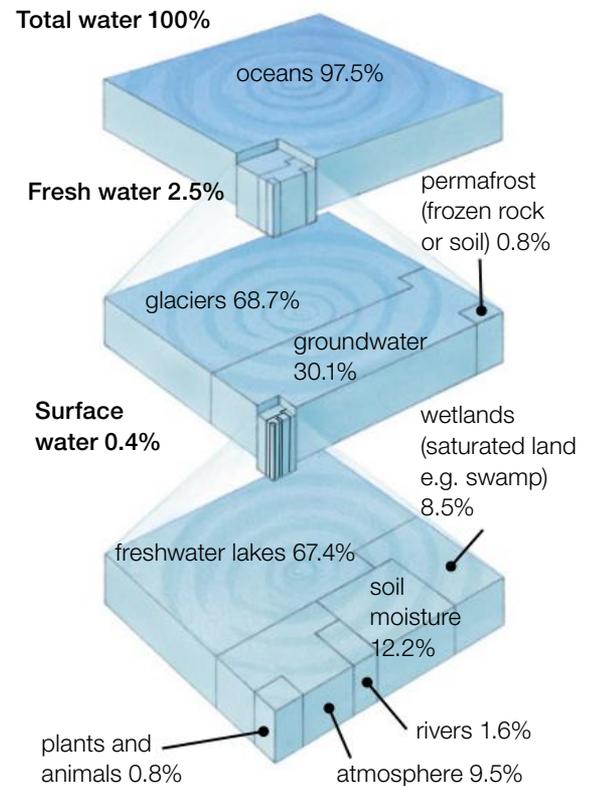
Groundwater

When it rains, water seeps into the soil to provide moisture for plants to survive. As water passes through the spaces between soil and rock it becomes groundwater. In the saturated zone, all the spaces between soil and rock particles are filled with water. The top of this zone is referred to as the water table (see Source 2).

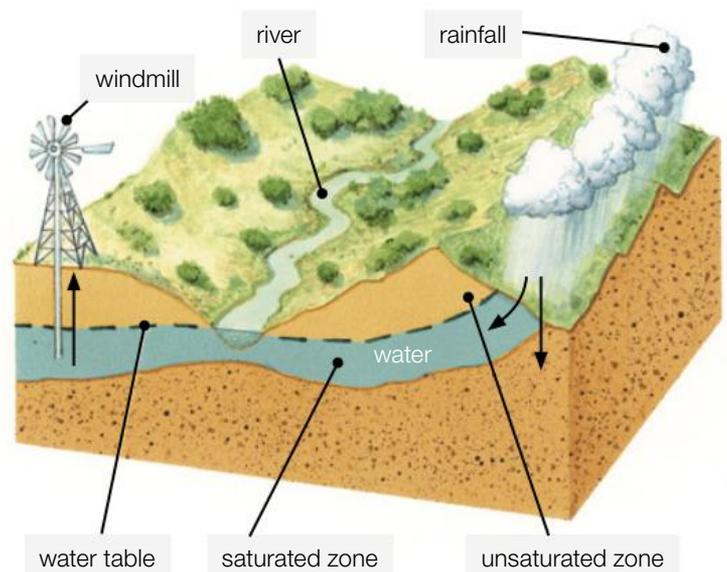
Groundwater is fed by surface water from rainfall and rivers and naturally comes to the surface at springs or at oases in dry areas. Groundwater is also drawn to the surface by **bores** drilled into the ground. Most of Perth's water is drawn from an underground aquifer, a layer of permeable rock that stores water.

The world's freshwater resources

Source 3 is a map of the world as you have never seen it before. While each country is shown in its correct location, its size shows the proportion of the world's freshwater resources found there. Countries that appear fat are water rich; those that appear thin are water poor. Comparing the size and shape of countries in Source 3 with the same countries on a standard world map (like the one provided at the back of this book) will clearly show which are water rich (larger than normal) and which are water poor (smaller than normal).

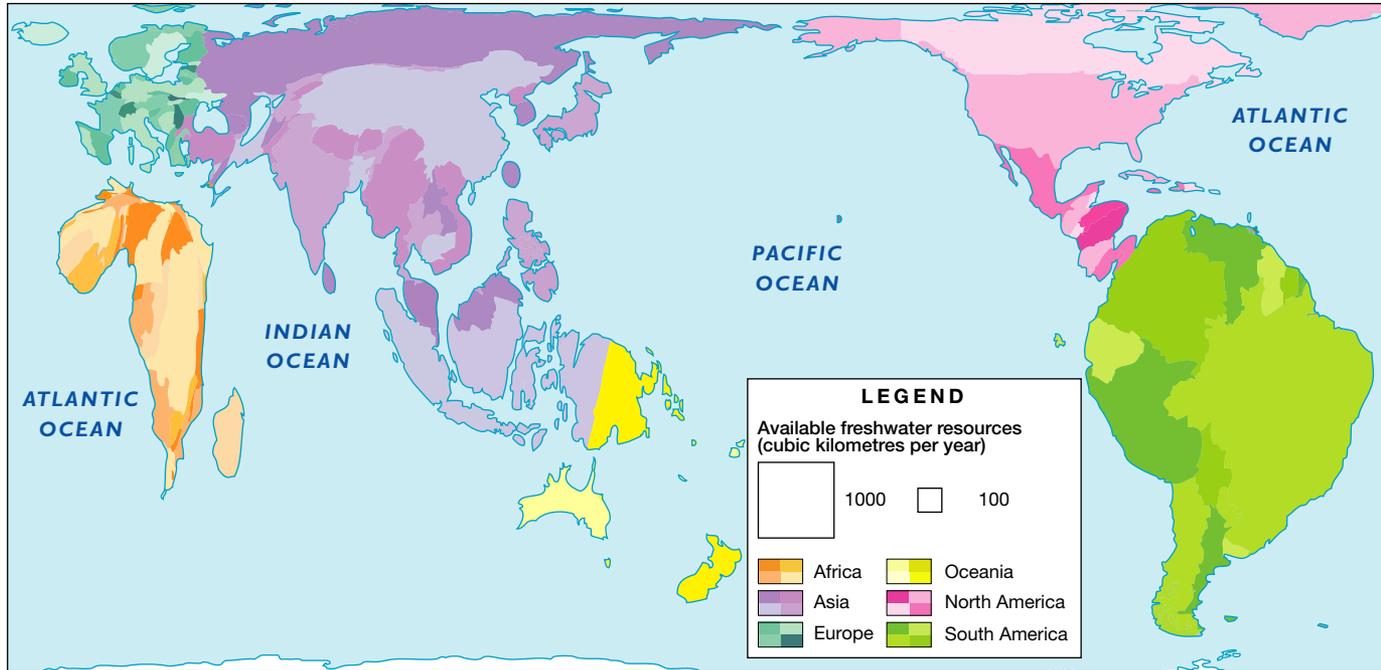


Source 1 Distribution of the world's water



Source 2 Groundwater from aquifers is pumped to the surface via bores for use by humans. In this example, water is pumped through a bore using a windmill.

WORLD: FRESHWATER RESOURCES



Source 3

Source: Oxford University Press

skilldrill

Using the PQE method to describe maps

The PQE method is used by geographers to identify trends and patterns in data and draw conclusions. For more information on the PQE method refer to section 1B of 'The geography toolkit'. There are three steps to follow when using the PQE (pattern, quantify, exceptions) method to describe maps:

Step 1 Pattern: Give a general overview of the pattern, referring to particular places. Which areas seem to have common features? (For example, 'The map of the world's freshwater resources shows that countries throughout South America have lots of fresh water.')

Step 2 Quantify: Quantify your general overview using data for specific regions or countries. (For example, 'Brazil has more than 5000 km³ of fresh water a year.')

Step 3 Exceptions: Point out any exceptions to the pattern you have described. (For example, 'Madagascar, the island off Africa, appears to have abundant water supplies, whereas the rest of the African continent does not.')

Apply the skill

- 1 Use the PQE method to describe the world's freshwater resources. Be sure to describe areas that are water rich and those that are water poor.

Check your learning 2.4

Remember and understand

- 1 How much of the world's water is fresh water, available for our use?
- 2 Is Australia water rich or water poor? What does this mean?
- 3 Study Source 3.
 - a Which countries would you consider to be the most water rich? Which are the most water poor?
 - b Compare the freshwater resources of Australia, New Zealand and Papua New Guinea.

Apply and analyse

- 4 What can countries that are water poor do to access more fresh water? Brainstorm this as a class. Think first of those methods that you already know about, perhaps those used in your local area, and then expand these into other possibilities.

2.5 Stored water

The water cycle is the movement of water through the Earth, but most of the fresh water on Earth is in storage. Fresh water can be stored for days or weeks in a lake or for thousands of years underground or in an ice cap, such as the one that covers much of Greenland. About 97.5 per cent of the Earth's water is found in the oceans and is too salty to drink. Much of the remaining 2.5 per cent, which is safe for us to drink, is locked in the polar **ice caps** and in flowing rivers of ice, known as **glaciers**.

Antarctica contains nearly 70 per cent of the world's fresh water as ice in an ice sheet that covers large sections of bedrock (solid ground) in Antarctica. The ice sheet has an average thickness of 2500 metres and scientists have found places where the ice is thought to be twice this thickness. If this ice were to melt, sea levels around the world would rise by up to 60 metres. Because the temperature in the interior of Antarctica remains below freezing, any snow that has fallen there in the last few million years has never melted and has gradually formed into a great dome of ice. The ice is gradually moving towards the sea away from the centre of the continent. As it reaches the sea, the ice breaks off into gigantic **icebergs**.

Source 1 The ice of Antarctica stores most of the world's fresh water.

Check your learning 2.5

Remember and understand

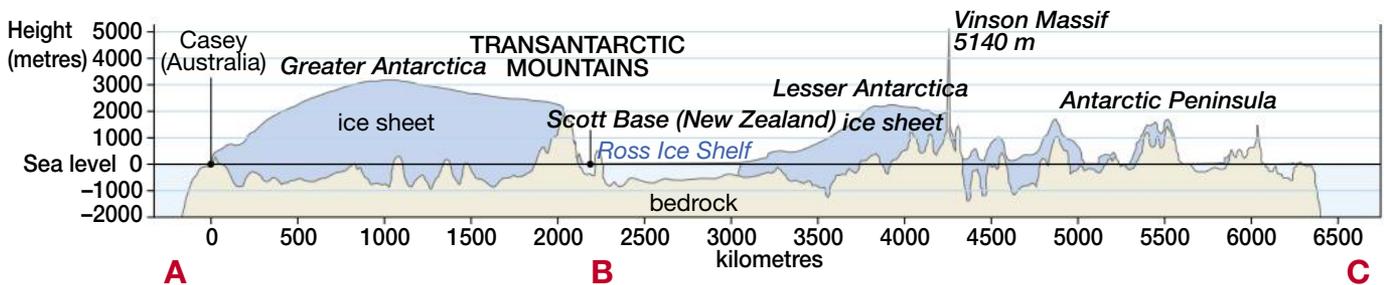
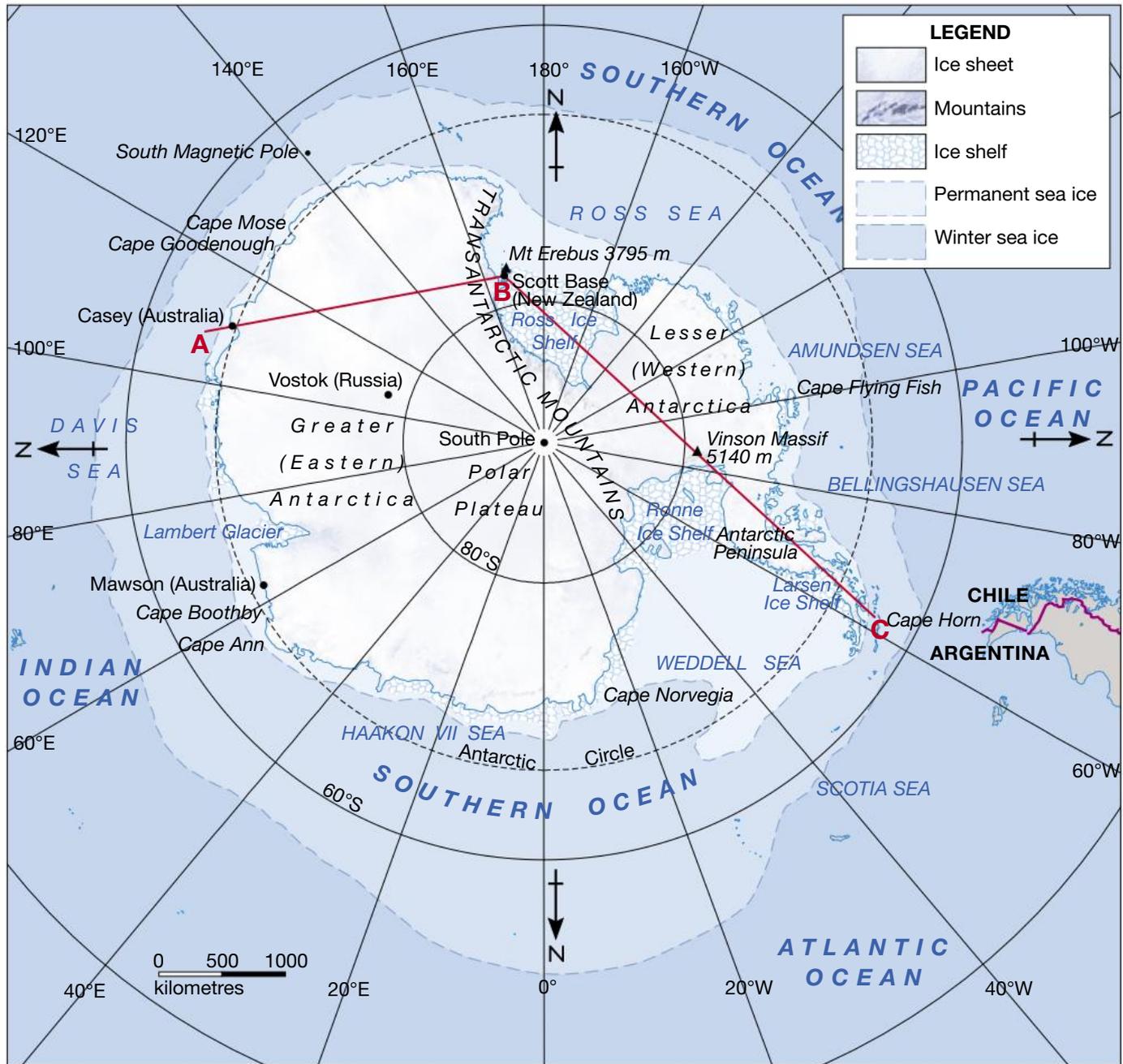
- 1 List three places where ice is stored.
- 2 Where is most of the world's fresh water stored?
- 3 Why doesn't the ice in Antarctica melt?

Apply and analyse

- 4 Look carefully at the map in Source 2.
 - a What happens to the sea surrounding Antarctica in winter?
 - b What is the difference between an ice sheet and an ice shelf?
- 5 Look carefully at the cross-section of Antarctica in Source 2. This shows a view of Antarctica from the side as if it had been cut along the A–B–C line on the map.
 - a Over which part of Antarctica is the ice sheet the thickest?
 - b Describe what Antarctica would look like without its ice sheet.
 - c Why is this cross-section a better way of showing the thickness of ice in Antarctica than the map?
- 6 What would happen if all the ice in Antarctica were to melt? What conditions might cause this to happen?



ANTARCTICA: LANDFORMS



Source 2

Source: Oxford University Press

2.6 The world's drinking water

Drinking water, sometimes called potable water, is water that is safe to drink and use for cooking and washing. In Australia, most water undergoes some form of treatment to make it safe to drink. Water treatment removes sediments, pollutants and microorganisms that can make us sick. Australians are among the world's biggest water users, using almost 500 litres of water per person per day. This figure is for all water use, including water used in agriculture and industry. While this amount has declined in recent years, it still ranks among the highest in the world. Experts estimate that each Australian will need to use 12 per cent less water by 2030 in order to stay within the limits imposed by our rainfall. Some households have started to use a number of strategies to save water, while many others continue to waste large amounts.

Access to safe drinking water

In Australia, we take for granted that we have flush toilets, running water from taps and clean, safe drinking water. However, millions of people around the world get sick or die each year from drinking contaminated water. The United Nations estimates that half the world's population has problems caused by lack of access to clean water. More than 1 billion people do not have access to a reliable freshwater supply, and 2.6 billion do not have basic sanitation, such as running water to clean their hands or flush their toilets.

It is estimated that, at any one time, almost half the people in poorer countries are suffering from health problems due to a lack of safe water. Each year, millions of people die from diseases carried in their water. Millions of women and children around the world, particularly in Africa, spend several hours a day collecting and carrying enough water to keep their families alive for another day.

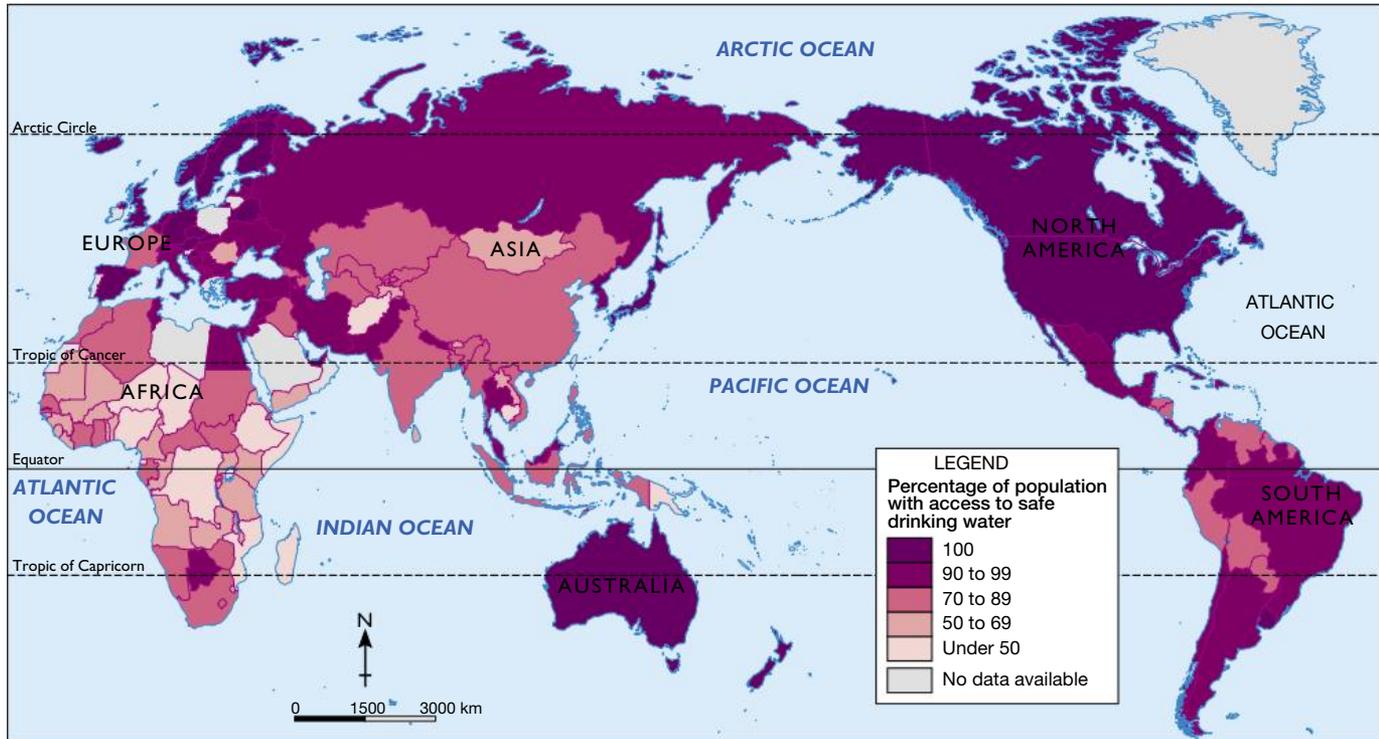


Source 1 Water use per person per day. Mozambique has the lowest daily water use per capita while the United States has the highest. Source: United Nations 2006

Source 2 In Chad, as in many African countries, each day begins with a walk to the village well.



WORLD: ACCESS TO SAFE DRINKING WATER



Source 3

Source: Oxford University Press

keyconcept: Environment**Serah's story**

Serah and her six children live in Ethiopia in Africa. The scarcest resource in her region is water. Before dawn, she makes her first journey to the village pump. Once there were three wells, but the 8-metre well has dried up. The 9-metre well has a little salty water at the bottom. The flow from the pump of the 25-metre well has slowed to a painful trickle. There is just barely enough for everyone to drink.

While it takes her 25 minutes to walk down the hill to the pump, it will take her 40 minutes to make the return journey with the 10-litre jar balanced on her head. She makes this trip at least twice a day. She tends not to drink as much as the others as she believes she should look after her children before herself. This means that she cannot produce enough milk for her baby, so he is often ill. The water contains parasites that make her other children sick, but Serah has little choice.

For more information on the key concept of environment, refer to page 8 of 'The geography toolkit'.

Check your learning 2.6

Remember and understand

- 1 What is potable water?
- 2 How many people in the world do not have access to a reliable supply of fresh water?
- 3 Describe the differences in the drinking water available in most Australian homes and in Serah's village.

Apply and analyse

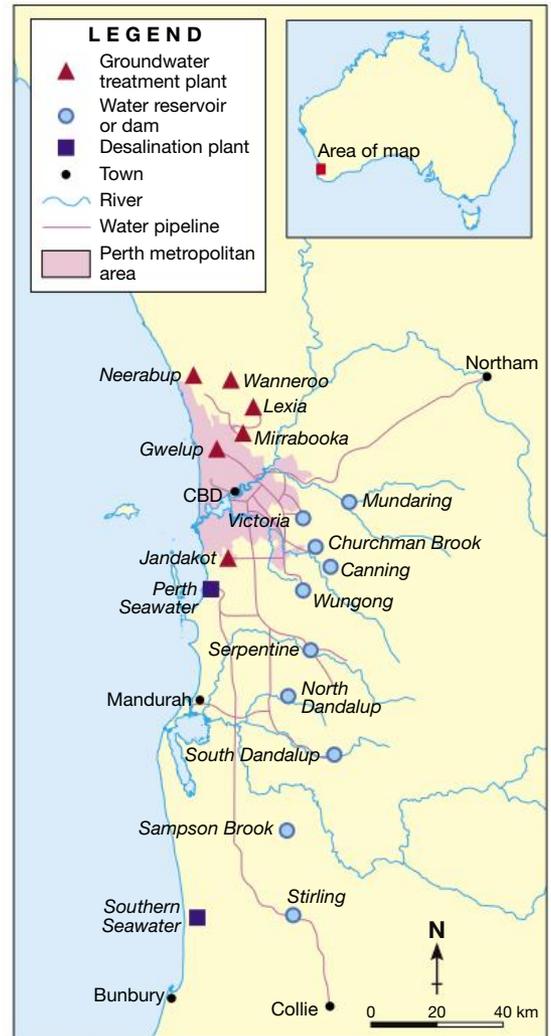
- 4 Using Source 3 and a world map, identify two countries with excellent access to safe water and two countries with poor access to safe water. Which continent has the worst access to safe water?
- 5 Read Serah's story.
 - a How much water will Serah collect in two trips to the pump?
 - b How many people depend on her trips to the pump?
 - c How much will each person receive?
 - d The average toilet in Australia uses 8 litres per flush. Write a statement about the way water is used in Australia compared to Ethiopia.

2A rich task

Perth's water supply

A decline in Perth's rainfall over the last 100 years has meant that we can no longer rely on rivers, lakes and dams to supply all their water needs. About half of Perth's water now comes out of the ground. North of the city are large aquifers which have collected rainwater for thousands of years and stored it within sand or limestone layers. Wells are dug to access the water which is treated, mixed with rainwater and used in homes, farms and gardens. Up to 20 per cent of Perth's water comes from two large desalination plants. The city was one of the first in Australia to use desalination plants to provide fresh water. The Western Australian state government hopes that expansion of these plants will help to 'drought-proof' Perth.

PERTH: WATER RESOURCES

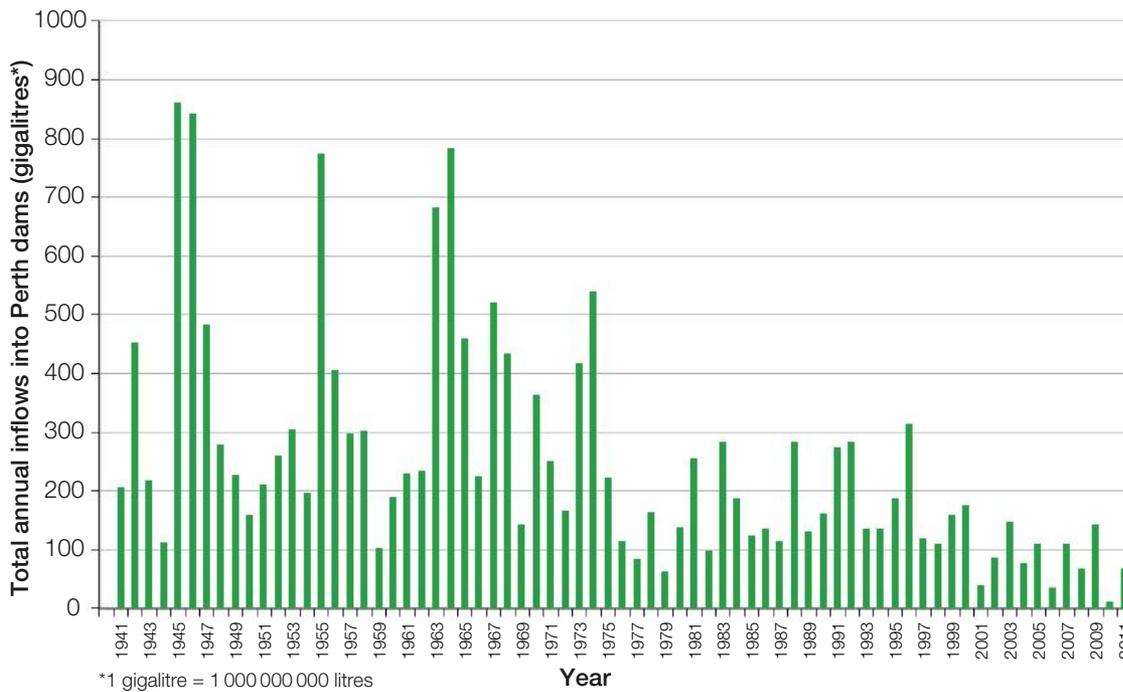


Source 2

Source: Oxford University Press

Source 1 One of Perth's desalination plants. The Perth Seawater Plant removes the salt from sea water to produce fresh water.





Source 3 Water flowing into Perth's dams 1941–2011

skilldrill

Using a map legend

In order to show the features on maps clearly, various symbols and colours are used. To help us unlock the information on the map these symbols are explained in a legend (or key). There are three main types of map symbols:

- Point symbols show features in one particular place (such as a railway station or desalination plant).
- Line symbols show features that connect places on the map (such as roads and rivers).
- Area symbols use colours or patterns to represent large areas (such as lakes and cities).

Apply the skill

- 1 Study Source 2.
 - a What symbol has been used for desalination plants on this map?
 - b Give an example of an area symbol used on this map.
 - c How many groundwater treatment plants supply water to Perth?
 - d What do you notice about the location of the dams on this map?

Extend your understanding

- 1 Look carefully at Source 3.
 - a Compare the annual flow of water into Perth's dams before and after 1975. What difference can you see?
 - b List the four years with the smallest annual inflows of water. What do you notice from this pattern?
 - c Why do you think the annual inflow of water changes so greatly between years?
- 2 What two other sources of water does Perth use to access water other than dams fed by rain?
- 3 Do you think it is possible to drought-proof a city? Give some reasons for your answer.
- 4 What do you think will happen to the water in an aquifer if water continues to be pumped out of it for use in a city such as Perth?
- 5 Why does Perth need more water now than it did 100 years ago?
- 6 What are some of the strategies being tried to address water problems in other parts of Australia?

2.7 Water connects people and places

People rely on water to survive. As a result, easy access to water influences where people choose to live. Cities, towns and villages are often located near fresh water sources such as rivers, lakes and underground water reserves. Water sources also directly influence the way people live; for example, the crops they grow or the transport they use. As human settlements tend to cluster around the same types of water sources, these water sources need to be shared by the communities. Because of this, many places around the world are connected with each other through these water sources. Generally, three main factors relating to water influence where people settle. These factors are discussed below and shown in Sources 1–4.

Historical and environmental factors

Historically, towns and cities have developed along rivers and near lakes and other fresh water sources. People will settle anywhere there is water, adapting their way of life to the local environmental features. Communities in the Hindu Kush region of the Himalayas in Pakistan and Afghanistan depend on the seasonal melting of the snow and glaciers to provide them with fresh water. This melt also feeds the great rivers in the region, the Indus River and the Ganges River, that supply water to the many cities and communities that have been established along their banks – around 1.5 billion people.

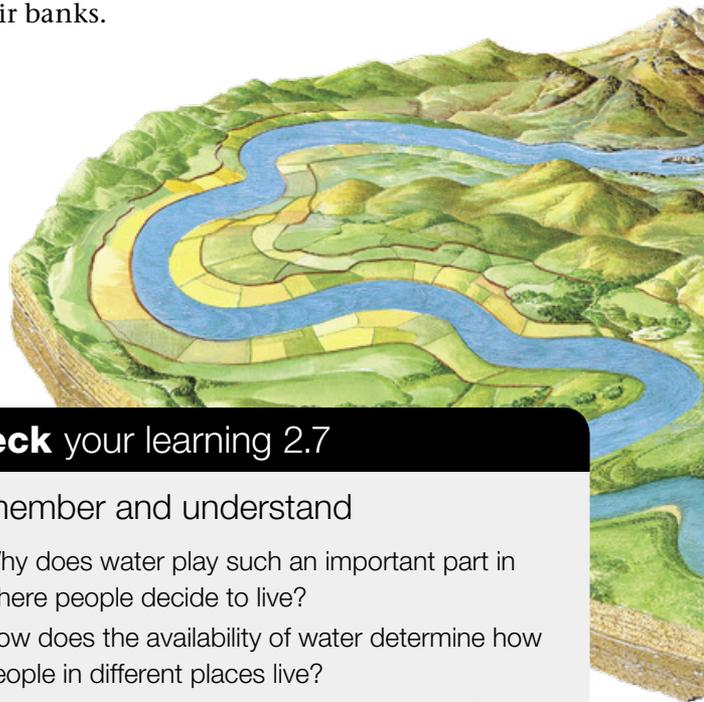
Agriculture

Communities also rely on fresh water to grow crops and farm animals. The availability of fresh water will determine the sorts of crops grown. In places where water is limited, crops that need little **irrigation**, such as corn, will be grown. Crops that rely heavily on water, such as rice, are grown on **floodplains** where water is plentiful. These floodplains and **deltas**, located on flat land where rivers meet the sea,

have particularly rich soil due to the deposits of silt that has travelled down the river from the mountains.

Trade and transport

Rivers move water across the Earth's surface, carrying water great distances to the sea. Rivers, lakes and oceans also act as transport networks, allowing products and people to move easily from one place to another, connecting the communities established on their banks.



Check your learning 2.7

Remember and understand

- 1 Why does water play such an important part in where people decide to live?
- 2 How does the availability of water determine how people in different places live?
- 3 Name three factors relating to water that influence where people choose to settle. In your own words, describe each of these factors briefly.

Apply and analyse

- 4 Describe how water flowing along a river can connect people living at different points along it.
- 5 How has the choice of crops being grown in Source 4 been determined by the environment? By contrast, what types of crops do you think would be grown in the location shown in Source 2?

How rivers connect people and places



Source 2 Communities in the Himalayas (a mountain range in Asia) depend on annual glacial melts to replenish their water supplies. Once replenished, excess water flows into rivers, connecting these communities with others downstream.



Source 3 Large cities and towns around the world are connected by rivers. River waters allow people to travel and goods to be transported and traded. This barge on the Rhine river is carrying coal from the city of Cologne south to Switzerland.



Source 4 Farming communities along the Mekong Delta in Vietnam plant their rice crops in the rich soil of the floodplains.

Source 1 The water that flows through the river systems around the world connects people and places in many ways.

2.8 Water affects places

As well as connecting different people and places, water can also affect them – in both positive and negative ways. On the positive side, water from the rain and rivers is used to irrigate the crops and farm the livestock that we eat. This water has a positive effect on the places in which we live. Without it, no life could exist. On the negative side, water in all its states – whether as a liquid (water), a solid (snow and ice) or a gas (fog) – can cause serious problems and damage in different places. Snow storms can shut down cities for days, heavy fog can disrupt air travel and cripple airports, and heavy rainfalls can cause widespread flooding.

A good way of understanding how water affects places is to look at some case studies relating to rivers. Rivers are interesting to study because if there is a problem upstream (such as a flood or pollution) this problem will quickly travel downstream, affecting the people who live there. Flooded rivers can affect many settlements along their banks, collecting and carrying rubbish or even trees and cars, as they go. If pollution or toxic chemicals enter the water at one location on the river, they quickly affect other parts of the river downstream, as well as the people who use it.

Case study: Tisza River pollution, 2000

In 2000, a storage pond used by a gold mine in Romania burst its banks. Around 100 000 cubic metres of water containing poisonous cyanide spilt into a local river that flowed into the Tisza River in nearby Hungary.

The cyanide spill killed much of the fish and plant life for several hundred kilometres downstream. Drinking water was polluted in four different countries: Romania, Hungary, Serbia and Bulgaria.

Source 1 A Hungarian fisherman pulls out poisoned fish from Lake Tisza on the Tisza River 12 days after a serious chemical spill upstream in Romania on 30 January 2000.

Case study: Thailand floods, 2011

In 2011, the people of Thailand experienced some of the worst flooding they had seen for decades. Areas of Thailand are prone to flooding as the annual monsoon brings heavy rain, particularly in the north of Thailand. In early 2011, a tropical cyclone combined with the monsoon to more than triple the amount of rain falling on northern Thailand. As heavy rains continued for several months, rivers burst their banks in the mountainous north, resulting in flash flooding and at least 13 deaths.

Flooding continued downstream in many large towns built beside rivers. Soon the country's capital, Bangkok, became the area of greatest concern. Located on a low floodplain at the mouth of the Chao Phraya and Tha Chin Rivers, Bangkok is very prone to flooding and, despite an intricate system of flood walls and canals, much of the city flooded. By the time the floodwaters receded, they left more than 500 people dead and a damage bill of more than US\$45 billion.



2B How does water connect and affect places?



Source 2 Floodwaters in the main street of Ayutthaya during the floods in Thailand in 2011 shut down the city and resulted in many deaths.

Check your learning 2.8

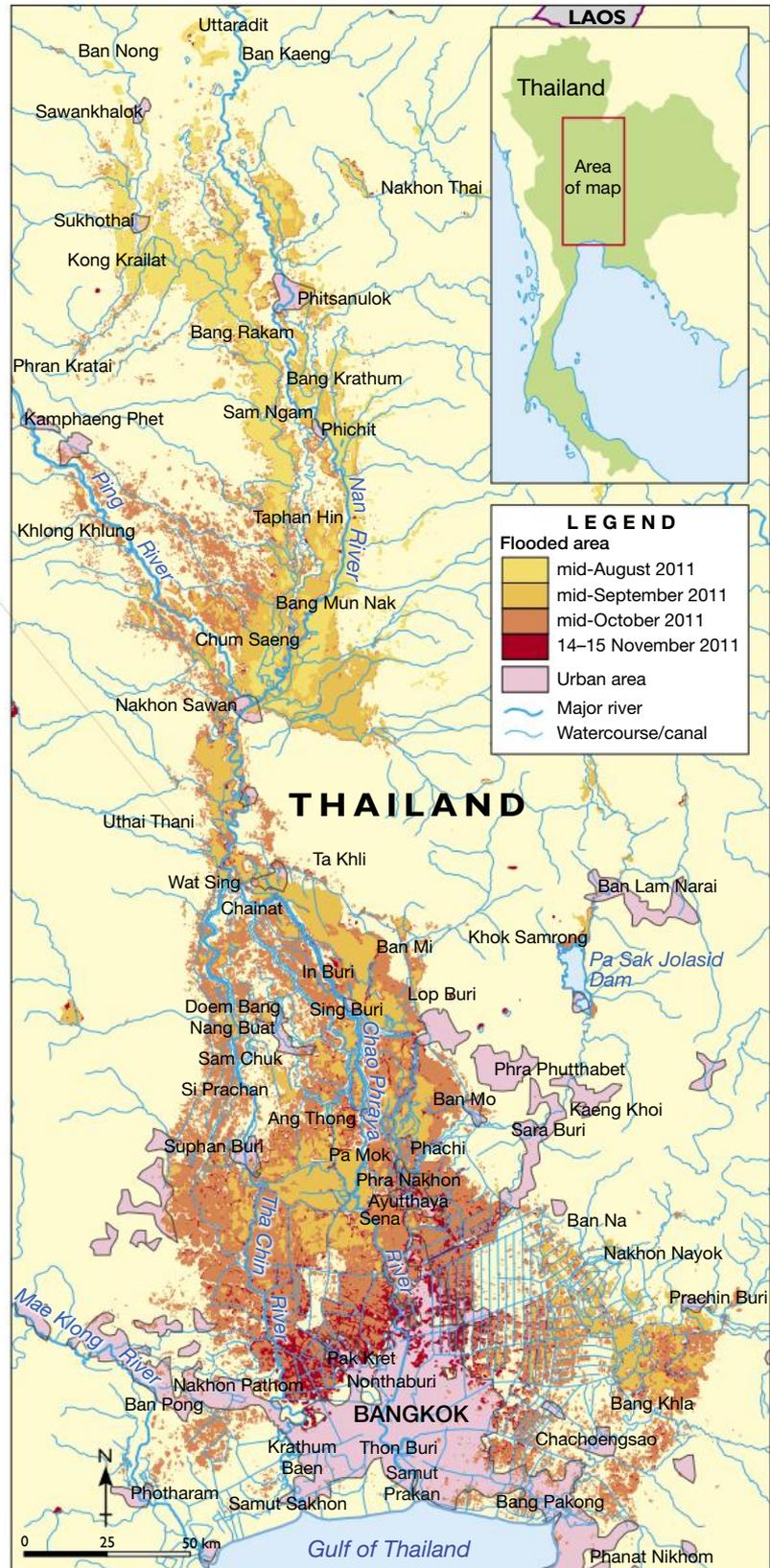
Remember and understand

- 1 Give examples to show how water affects places in its gas, liquid and solid states.
- 2 What problems did the gold mine in Romania cause downstream?

Apply and analyse

- 3 Look carefully at Source 3.
 - a When did floodwaters reach Bangkok?
 - b How far had some of the floodwater travelled? (Use the scale provided to calculate the distance.)
- 4 Decide whether each of the following facts makes flooding in Bangkok more likely or more dangerous. Justify your answer for each one.
 - a Between June and October Thailand experiences its wet season with heavy monsoon rains.
 - b Bangkok has been built on the Chao Phraya River delta.
 - c Between 1985 and 2010 Thailand's population increased by more than 10 million people.
 - d The land on which Bangkok is built is sinking by 30 millimetres a year.

THAILAND: TIME LAPSE MAP SHOWING THE SPREAD OF FLOODWATERS, MID-AUGUST 2011 TO 15 NOVEMBER 2011



Source 3

Source: Oxford University Press

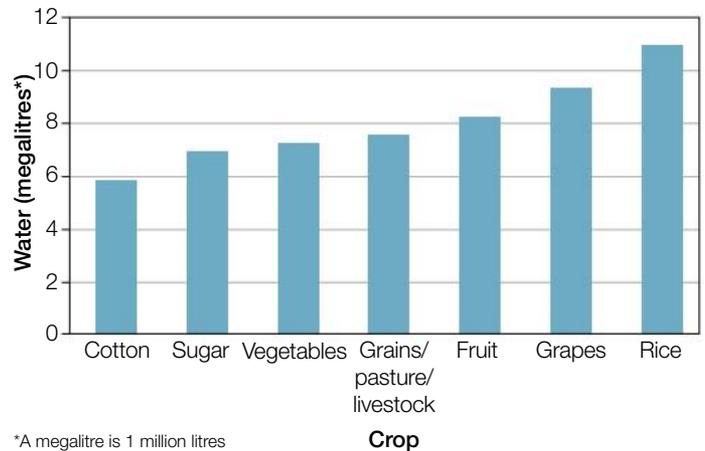
2.9 Water for food

Farmers are by far the biggest users of water in Australia. About 70 per cent of the fresh water used each year in Australia is used in agriculture. This water is used to produce an enormous range of products, many of which you consume every day (see Source 2).

You may not realise it, but a lot of water was needed to produce your breakfast. Many everyday products use even more water. For example, it takes up to 50000 litres of water to produce 1 kilogram of beef, and 685000 litres to produce enough wool to make one suit. The amount of water needed to produce an item of food, such as a steak, or a piece of clothing, such as a suit, is known as **virtual water**.

In Australia, many crops are grown in the Murray–Darling Basin in south-eastern Australia (see Source 4). While a lot of the water used in this region falls on the farms as rain, much of it is taken from the rivers. Movement and control of water has a large economic impact in this region.

In the past, the rivers in this region had a normal cycle of flood and drought. Farmers needed a more reliable flow of water and so a system of dams and weirs was built along the river. These collect water during wet times and release it gradually during dry times, thereby controlling the flow of the river.



*A megalitre is 1 million litres

Source 2 Water used per hectare (10000 square metres) to grow selected crops

Farmers are allowed to use a certain amount of water each year and are charged for the amount of water they use. Because they have to pay for their water, farmers in this region use it very carefully. Another reason for farmers to use water as efficiently as possible is the scarcity of water in many parts of Australia. In the early years of the twenty-first century, a widespread and severe drought turned the Darling River and many others into a series of pools separated by kilometres of dry river bed. Because of these factors, many farmers and farming industries have developed more water-efficient methods of farming.

| | | | | |
|---|---|--|---|--|
|  <p>Apricots Apricots are mainly grown and processed in northern Victoria and southern New South Wales. Western Australia grows about 3 per cent of Australia's apricots.</p> <p><i>Estimated water needed to produce 1 kilogram of apricots: 1391 litres</i></p> |  <p>Bread The main ingredient in bread is wheat. Western Australia produces 50 per cent of wheat in Australia, across 4000 farms.</p> <p><i>Estimated water needed to produce 1 kilogram of wheat: 750 litres</i></p> |  <p>Milk and butter More than 60 per cent of Australia's milk and milk products comes from Victoria. Western Australia produces only 4 per cent of Australia's milk.</p> <p><i>Estimated water needed to produce 1 glass of milk: 200 litres</i> <i>Estimated water needed to produce 1 kilogram of butter: 18070 litres</i></p> |  <p>Raspberry jam The main ingredient in raspberry jam is sugar. Virtually all of Australia's sugar is grown in Queensland. Raspberries grown in the Goulburn Valley make up 40 per cent of the jam.</p> <p><i>Estimated water needed to produce 1 kilogram of sugar: 173 litres</i> <i>Estimated amount of water needed to produce 1 kilogram of raspberries: 713 litres</i></p> |  <p>Rice Bubbles Rice Bubbles are made from 89 per cent whole white rice, which is grown in the Murrumbidgee Irrigation Area (part of the Murray–Darling Basin). Much of the rice industry is centred around Deniliquin in southern New South Wales.</p> <p><i>Estimated water needed to produce 1 kilogram of rice: 1550 litres</i></p> |
|---|---|--|---|--|

Source 1 Water requirements to produce typical breakfast foods

2B How does water connect and affect places?



Source 3 An irrigation channel in the Murray–Darling Basin

Murray River irrigation

Lake Hume is an artificial lake formed by the Hume Weir near Albury–Wodonga on the Murray River. Completed in 1936, it is one of a series of dams and weirs built to control the flow of water in the Murray River. Its main purpose is to trap water during periods when there is a large amount of water in the Murray River and release it gradually to keep the flow of the river relatively constant.

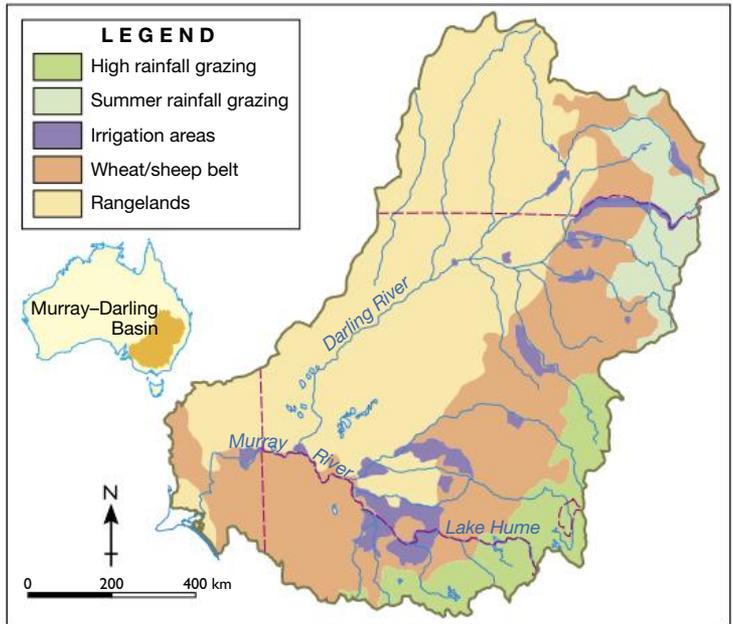
A network of irrigation pipes and open channels carries the water from the Murray River hundreds of kilometres to individual farms. Open channels are generally less efficient than pipes as water is lost to evaporation and water seeping into the soil. However, they are much cheaper to build than pipes.

When the water reaches the farms it flows through gravity or is pumped onto the crops or pastures. A common method of irrigation is the use of a pivot spray. A giant arm with sprayers attached moves around a central pivot point, creating distinctive circles of green.

Source 5 Pivot spray irrigation



MURRAY–DARLING BASIN: LAND USE



Source 4

Source: Oxford University Press

Check your learning 2.9

Remember and understand

- 1 How much of Australia's fresh water is used on farms?
- 2 How does water for irrigation of crops and pastures reach the farms?
- 3 Rank the breakfast foods shown in Source 1 in order from greatest water need to least water need.

Apply and analyse

- 4 Can farmers use as much water as they want?
- 5 Look at Source 2.
 - a Which crop uses the most water?
 - b Which crop uses the least water?
- 6 Why do you think it takes so much water to produce 1 kilogram of rice?
- 7 In what ways is the Murray–Darling Basin one of Australia's most important resources?
- 8 Look closely at the map (Source 4).
 - a What relationship do you notice between irrigation areas and rivers?
 - b Explain the nature of this relationship.

Evaluate and create

- 9 Draw a labelled diagram to clearly show how pivot spray irrigation works. Use Source 5 to help you.

2.10 Water for energy

Moving water has been used as a source of energy since ancient Greek and Roman times, with the invention of the water-driven wheel. Watermills built by the Romans used the force of the flowing water to drive the blades of a large wooden wheel. This, in turn, rotated an axle to drive the machinery inside the mill to grind grains like wheat and corn.

Hydroelectricity

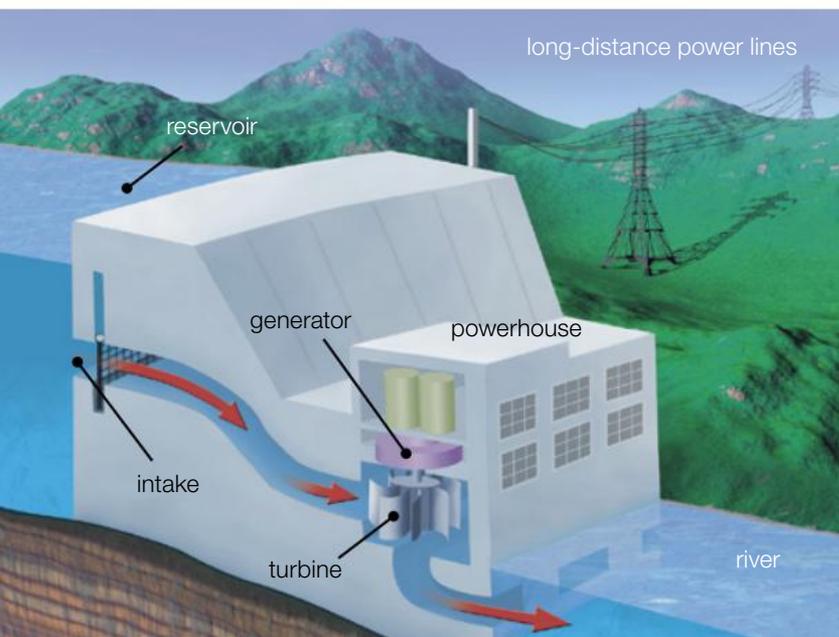
Today electricity is generated following the same basic concept used in Roman watermills. A dam is built across a river, creating a large reservoir of water. This water is then released through turbines, causing them to turn. The spinning turbines rotate giant magnets around a huge coil of copper wire to create electricity. The faster the water flows, the more electricity is created. This type of electricity is known as hydroelectricity.

Australia's largest plant is the Snowy Mountains Hydroelectric Scheme. More than 100 000 people from over 30 countries constructed the huge tunnels, dams and power stations. Electricity generated by the scheme is used in the Australian Capital Territory, New South Wales and Victoria.

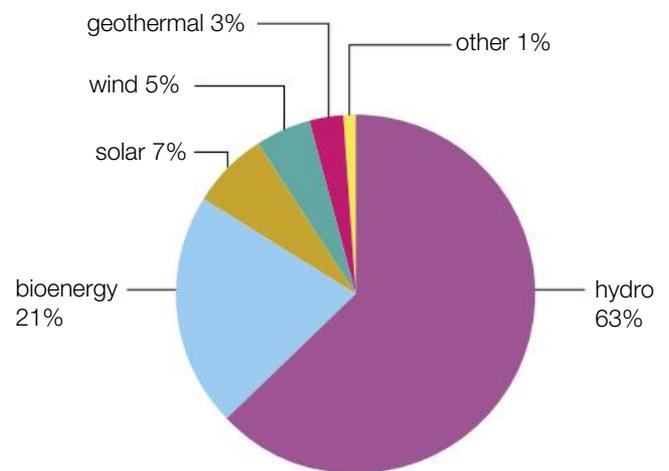
Hydroelectricity is the largest source of renewable, non-polluting energy in the world. The main negative impact of building a hydroelectric plant is that the natural flow of the river is stopped and the land behind the dam is flooded. The flooding of valleys behind the dam can destroy natural habitats and human features, such as houses, fences and roads.

Case study: Three Gorges Dam, China

China's Three Gorges Dam is not only the world's largest dam, it is also the largest power station ever built. More than 2 kilometres long and 180 metres high, the dam has turned the Yangtze River into a lake 660 kilometres long. As well as producing electricity, the dam has increased the Yangtze River's shipping capacity, and has reduced the flooding hazard downstream. The building of the Three Gorges Dam stirred protests around the world, as it involved displacing 1.25 million people and flooding more than 600 square kilometres of land; that is about 30 000 times the size of the Melbourne Cricket Ground.



Source 1 How a hydroelectric power station works

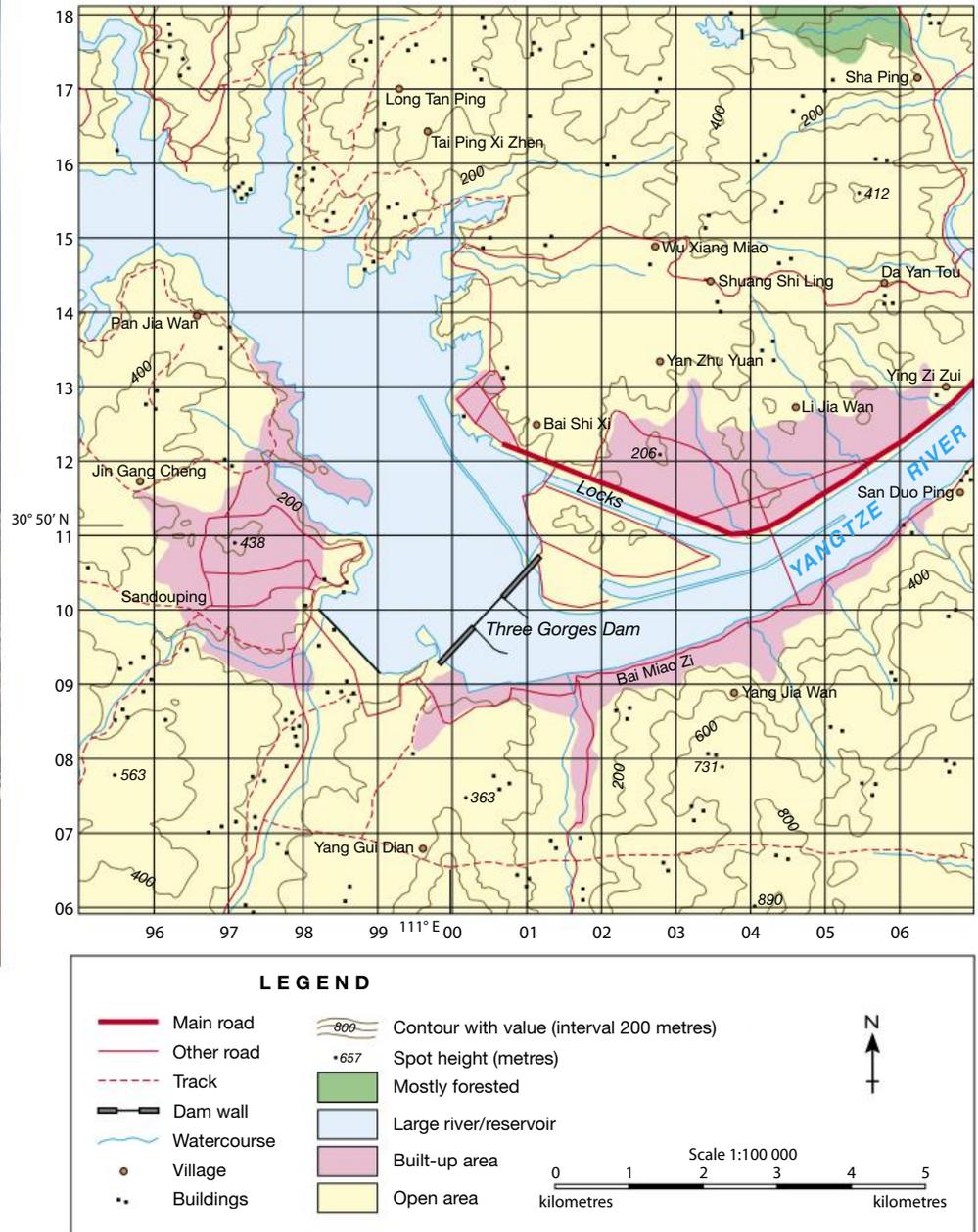


Source 2 Energy from renewable and continuous sources. Hydroelectric power accounts for most of the total energy produced from these sources around the world.



Source 3 An oblique aerial view of the Three Gorges Dam on the Yangtze River in China. Water flows through the open sluice gates. The hydroelectric power station is to the left of the sluice gates.

CHINA: THREE GORGES DAM



Source 4

Source: Oxford University Press

Check your learning 2.10

Remember and understand

- 1 How is water used to create electricity?
- 2 What is the main source of renewable energy in the world?
- 3 What advantages and disadvantages does the building of dams bring?
- 4 How can you stop a river flowing to enable a dam wall to be built?

Apply and analyse

- 5 Look carefully at Source 3. Oblique aerial images are taken from an angle and show a foreground and a background. Is the dam wall in the foreground or the background?
- 6 Draw a sketch of the oblique aerial image (Source 3) and label the following:
 - Three Gorges Dam
 - Yangtze River
 - hydroelectricity plant.

2B rich task

The Ok Tedi mine

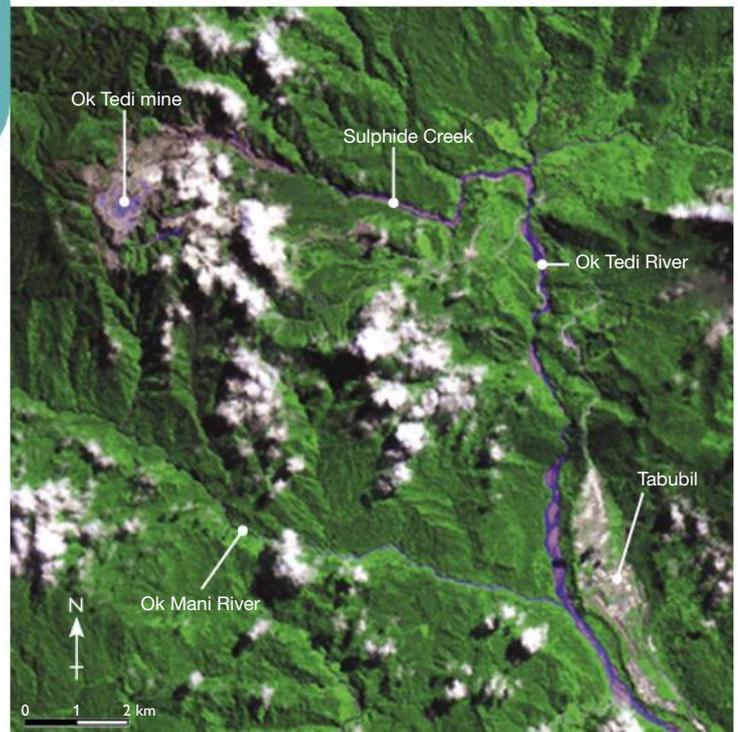
The Ok Tedi copper and gold mine is located on the Ok Tedi River, in Papua New Guinea. During mining operations large amounts of chemicals are used to separate the precious gold and copper minerals from other rocks. These chemicals, along with ground up rocks and ore (known as **tailings**), need to be disposed of. In order to do this, the mine owners (BHP Billiton) built a dam known as the tailings dam. The tailings dam allowed heavy metals and solid waste from the mine to settle. Cleaner water would then be released into the river system.

Unfortunately, an earthquake in 1984 collapsed the tailings dam. BHP Billiton argued it was too expensive to rebuild it.

Since 1984 the mine has discharged 70 million tonnes of tailings into the river system each year. Chemicals from these tailings destroyed wildlife in the river, particularly fish. The materials dumped into the river changed a deep and slow river into a shallow river with rapids. Transport up and down the river became more difficult. The change in the river bed led to frequent floods that spread contaminated mud onto 1300 square kilometres of farms along the Ok Tedi River. The discharge from the Ok Tedi mine caused great harm to the 50000 Indigenous people who live in the 120 villages downstream of the mine. Millions of dollars in compensation was paid to those affected by the misuse of the river system.



Source 1 Ok Tedi mine in Papua New Guinea



Source 2 Satellite image of Ok Tedi mine, 5 June 1990



skilldrill

Identifying change over time

By carefully examining photographs, satellite images or maps from different times we can see the changes that occur at a location. When studying the same area at two different times:

- Step 1** Find a key feature, such as a river or main road, as a reference point on both sources.
- Step 2** Note the areas of the image where there has been little or no change.
- Step 3** List the differences in the later image where there has been change.
- Step 4** Look for other information on the image that shows what might have contributed to the change.
- Step 5** Describe the type of change – permanent change or seasonal change (such as different stages of crop production or plant growth).

Apply the skill

- 1 Study Sources 2 and 3.
 - a In what two years were the satellite images taken?
 - b Were the images taken at different times of the year?
 - c What changes to the rivers occurred between the two years when these images were taken?
 - d Why did these changes occur?
 - e Are these changes permanent or seasonal?
 - f Draw a sketch map of the area in 2004, using a key and labels to outline the changes that have occurred since 1990.



Source 3 Satellite image of Ok Tedi mine, 26 May 2004

Extend your understanding

- 1 What competing uses were there for the Ok Tedi and Ok Mani Rivers?
- 2 What problem did BHP Billiton have managing the polluted water in their tailings dam?
- 3 What environmental impact did the tailings have on the rest of the river?
- 4 What social impact did the actions of BHP Billiton at the Ok Tedi mine have on the indigenous users of the river?
- 5 Give another example where change in water use in one part of a river has impacted on water users downstream.

2.11 Water in Australia

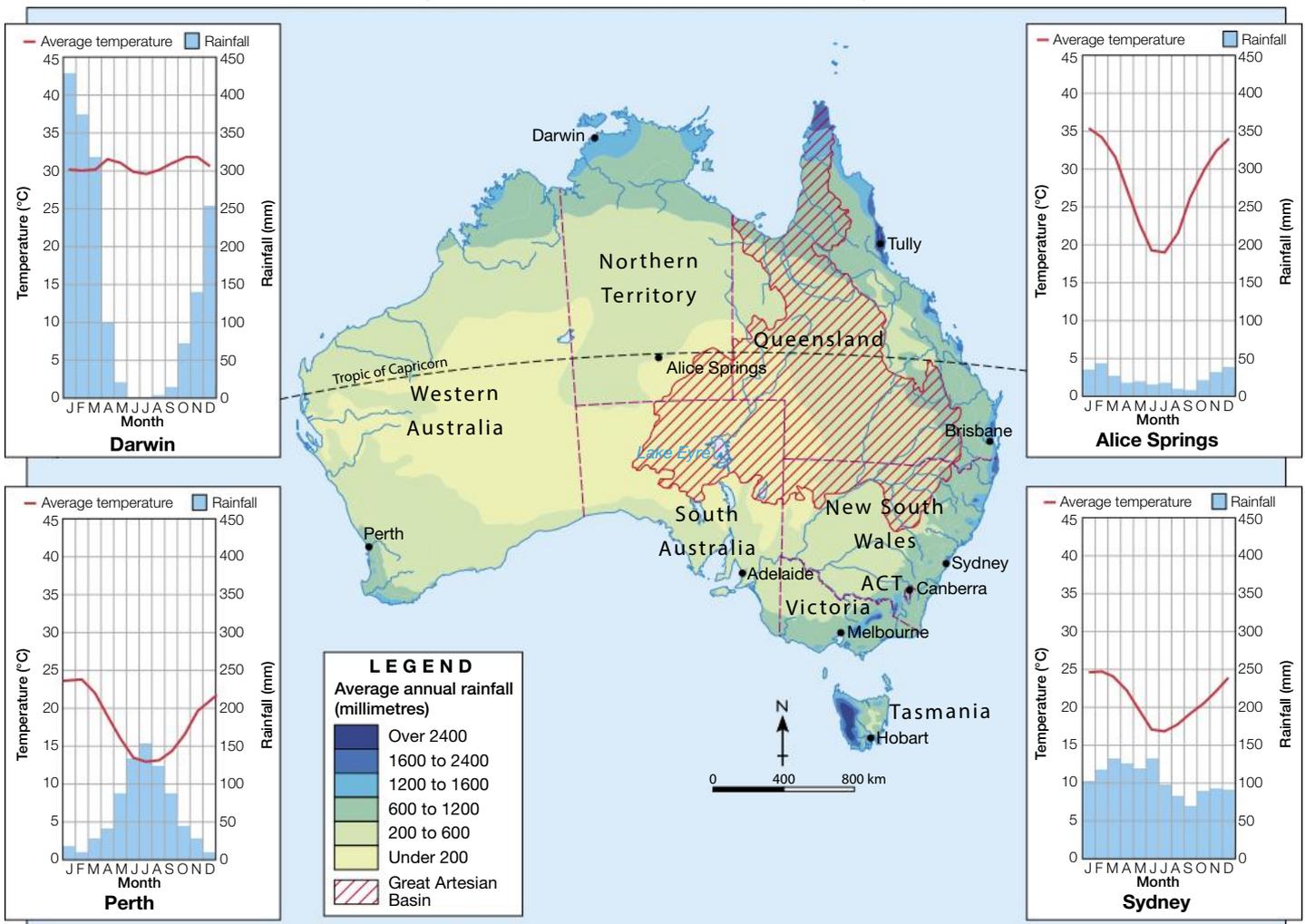
Australia has the lowest volume of water in rivers and the smallest number of permanent wetlands of any continent except Antarctica. Australia's water supplies are not evenly distributed. The northern third of the continent lies in the **tropics** and receives heavy rainfall with **monsoons** in the summer. It is a water-rich area. By comparison, vast areas of the interior receive very little rain.

Virtually all of Australia's large cities and towns are positioned on the coast, especially in the east and south-east. This is because reliable rainfall in these regions has made them more liveable than drier parts of the country. Yet pressure from a large number of water users has put great strain on water resources in these areas.

Rainfall distribution in Australia

Much of the Australian continent is dry. It is only the northern, eastern and south-western coastal regions that receive good annual rainfall. The climate of the eastern half of Australia is influenced by the Great Dividing Range. It extends 3500 kilometres from the northern tip of Cape York to southern Victoria. Moisture-rich winds from the south-east push warm, moist air over the land. Forced to rise and cool, the water droplets fall onto the east coast as rain, but as the air descends to the west, it becomes warmer and drier.

AUSTRALIA: AVERAGE ANNUAL RAINFALL (CLIMATE GRAPHS FOR SELECTED LOCATIONS)



Source 1

Source: Oxford University Press



Source 2 Australia's heaviest rainfall makes Tully the white-water rafting capital of Australia.

Being such a large country, Australia has a great deal of variation in rainfall. It is common for one part of the country to have floods while another has a long drought. The wettest place in Australia is Tully, near Innisfail in north Queensland, which averages 4204 millimetres of rainfall a year. Tully receives so much rain because of its location within the tropics on the north-east facing slopes of the Great Dividing Range.

The driest place in Australia is on the shores of Kati Thanda (Lake Eyre) in South Australia, which receives little more than 100 millimetres per year. Kati Thanda receives so little rain because it lies far from any supply of moisture. Air masses reaching the interior of the country have generally dropped their rain on the south-eastern corner of Western Australia, and so they are dry by the time they arrive at Kati Thanda.

Many communities in the interior of Australia rely on underground water as well as the little rain that falls. Lying beneath much of eastern Australia is the world's largest underground water supply, the Great Artesian Basin (see Source 1). It is over 1.7 million square kilometres in size and covers approximately 22 per cent of Australia. The water is trapped underground in a sandstone layer covered by sedimentary rock, creating an aquifer. Farmers and communities access this water by drilling a well and pumping water to the surface with a windmill.

Australia's river resources

Rivers are a vital source of fresh water for many people. Australia, though, has the lowest volume of water in rivers of any inhabited continent on Earth. On average, just 12 per cent of Australia's rainfall is collected in rivers; this is referred to as the river discharge. The remaining 88 per cent of rainfall is used by plants, held in natural water storages (such as lakes, wetlands and aquifers) or returned to the atmosphere through evaporation. The Darling River, part of Australia's largest river basin (the Murray–Darling Basin), loses enough water every year through evaporation to fill Sydney Harbour four times.

Check your learning 2.11

Remember and understand

- 1 Why do many Australians live on the southern and eastern coast?
- 2 Where are the wettest regions of Australia? Where are the driest regions of Australia?
- 3 How do many farmers and communities in inland Australia access more water?
- 4 Use the map in Source 1 to estimate how much rainfall is received every year on average where you live.

Apply and analyse

- 5 Use the PQE method explained on page 26 to describe the distribution of Australia's rainfall.
- 6 Four climate graphs are shown in Source 1. Each of these gives us two important pieces of information about the climate at a particular place. Rainfall is shown as a series of blue bars while average temperatures are shown with a red line. The trickiest part of reading a climate graph is reading the correct scales. Temperature is shown on the left-hand side, rainfall is shown on the right-hand side, and months along the bottom. For more information on reading a climate graph refer to page 29 of 'The geography toolkit'.
 - a Which is the most water poor of the four places shown? Why is this?
 - b Which has the most even or reliable rainfall throughout the year? Why is this?
 - c Which has the most seasonal rainfall?

2.12 Water quality and quantity in Australia

Water is particularly difficult to manage in Australia, the driest inhabited continent on Earth. Australia has the lowest amount of water in rivers and the smallest areas of permanent wetlands in the world. Australia's water supplies are not evenly distributed. The northern third of the continent is water rich, while vast areas of the interior receive very little rain. Variable rainfall patterns make it quite common for one part of the country to experience major flooding while others experience extended periods of drought.

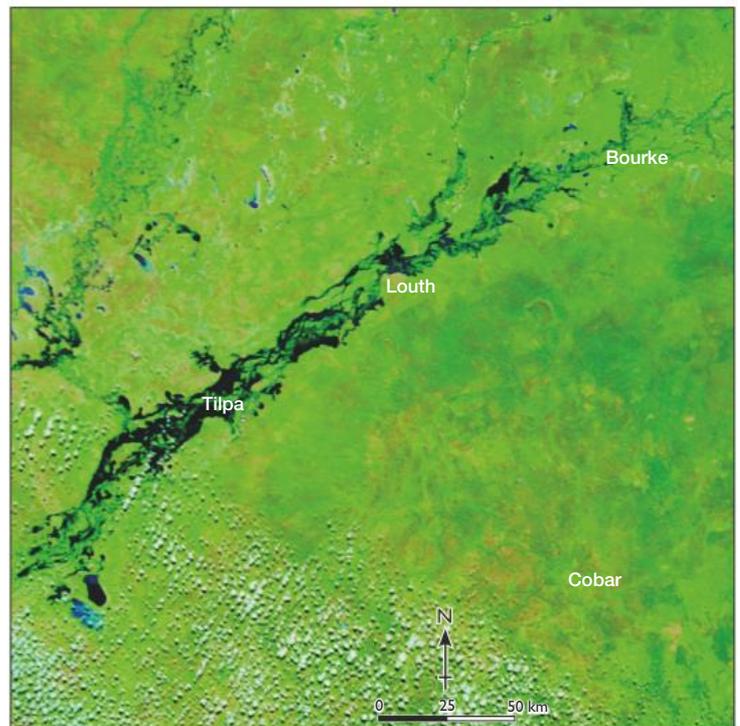
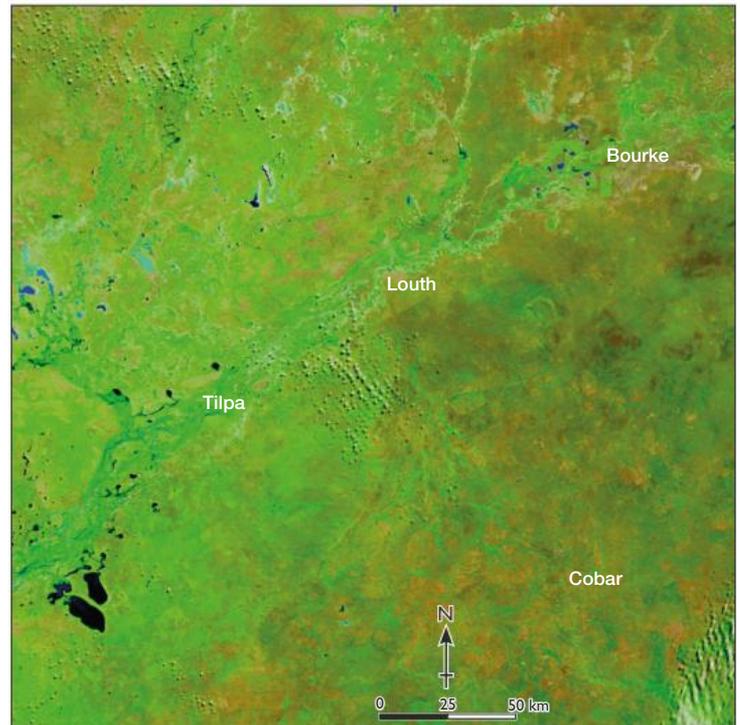
The Darling River

The Darling is Australia's third-longest river, flowing 1390 kilometres from Brewarrina until it joins the Murray River at the town of Wentworth. The Murray and Darling are the main rivers in the Murray–Darling River Basin, where 40 per cent of Australia's food is produced.

The flow of water in the Darling River varies greatly due to drought and water that is taken to supply farms for irrigation. The Darling can be a small trickle or a raging torrent – it can even dry up completely. The Darling River stopped flowing at the town of Menindee, near Broken Hill in New South Wales, 48 times between 1885 and 1960.

Climate change

Australians have come to see drought as part of the natural cycle of rainfall patterns, but a new threat now faces us – and it is one we do not fully understand. For years scientists have been warning us about the possibility that our climate



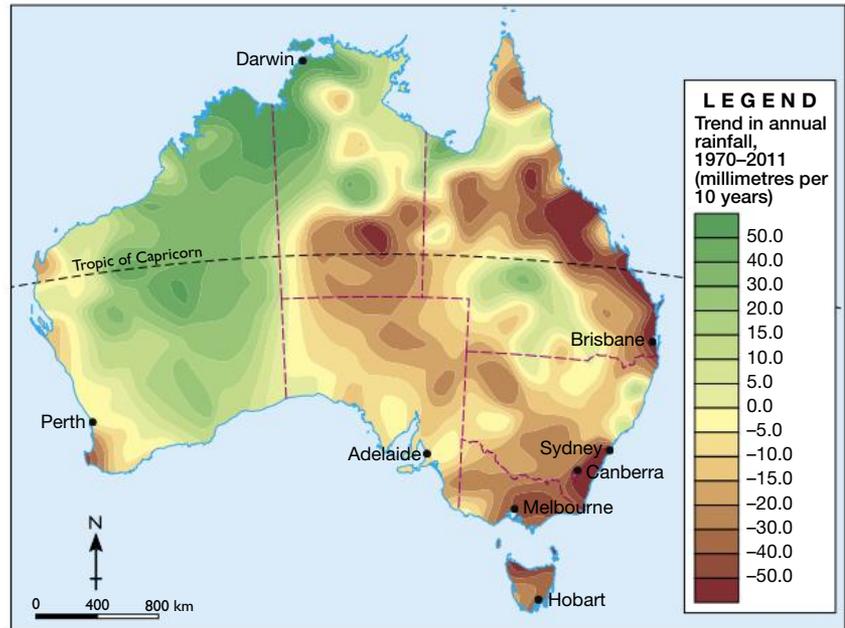
Source 1 These satellite images of the Darling River show the river affected by drought in 2011 (top), and flooded in March 2012 (bottom). These images use a photographic technique to help geographers distinguish between water and land. The colours used in the image are blue for water, bright green for vegetation, and an earth-tone for bare ground.

is changing. While the vast majority of the world's scientific community now accepts that the planet is warming due to the effects of greenhouse gases, these experts are much less sure how this will affect specific places and specific climates.

It appears that climate change will mean less water for many Australians in the future, putting even greater pressure on our current supplies. Much of Australia's fresh water comes from water collected in rivers, lakes and dams. This water will evaporate more quickly in the future, meaning that there will be less available for use in cities and rural areas. Source 4 shows the trends in annual rainfall over the last four decades. The green areas have had an increase in rainfall while the yellow and brown areas have had a decrease.

Source 2 The Darling River

AUSTRALIA: RAINFALL TRENDS, 1970–2011



Source 3

Source: Oxford University Press

Check your learning 2.12

Remember and understand

- 1 Which part of Australia is the most water poor?
- 2 Why might a warmer future lead to less water being available in Australia?
- 3 Look at Source 1. How and why did the flow of water along the Darling River change between 2011 and March 2012?

Apply and analyse

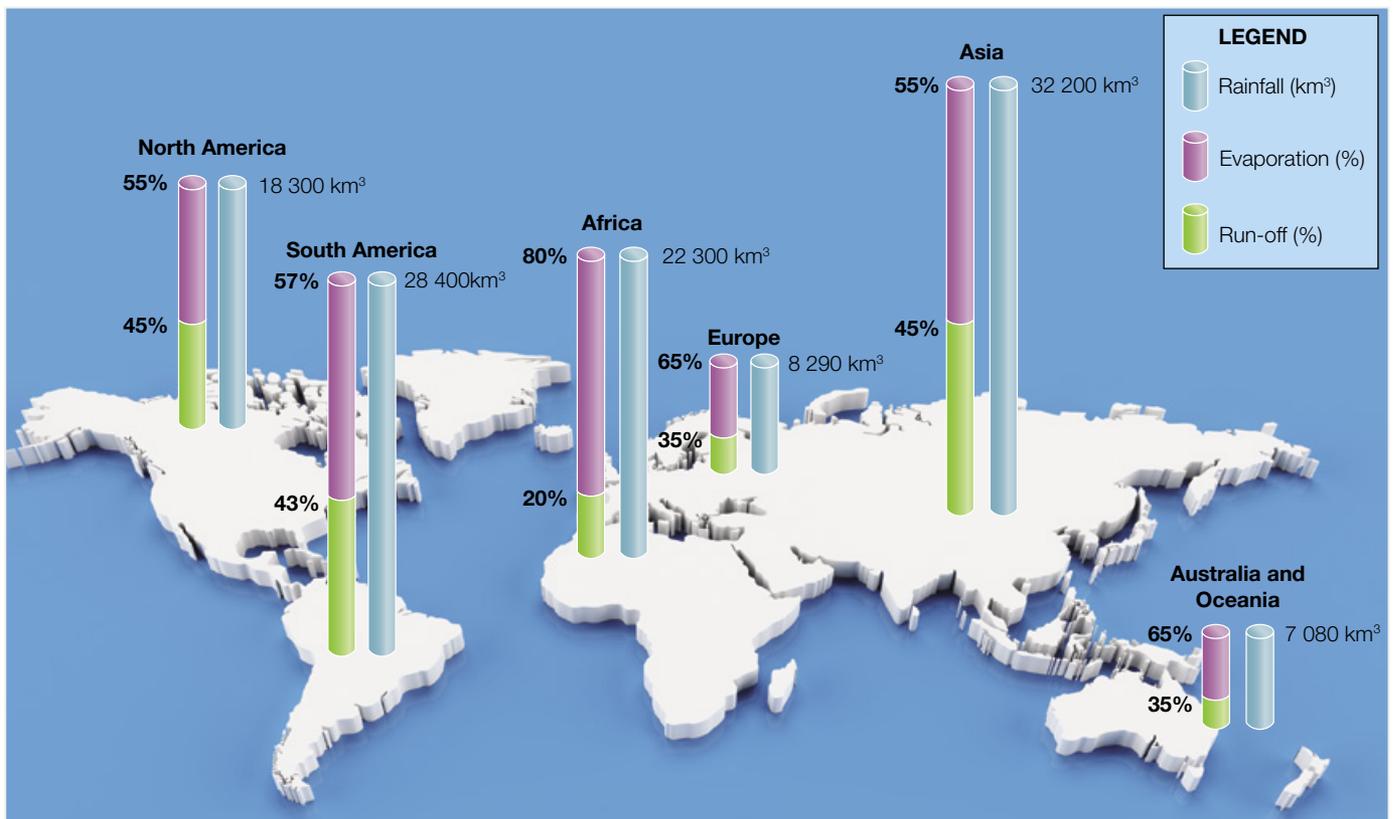
- 4 Look carefully at Source 3.
 - a Between 1970 and 2011, which parts of Australia experienced significant decreases in annual rainfall?
 - b Which capital cities have been most affected?
 - c How has the Murray–Darling River Basin been affected?

2.13 Water in the world

In an average year, 577 000 km³ of rain falls on Earth. Of this, 458 000 km³ falls, on the oceans and 119 000 km³ on land.

When water falls to earth as rain, most of it **evaporates** back into the atmosphere. Of the annual rainfall that falls on land, 74 000 km³ (or 62 per cent) evaporates. In Australia, around 65 per cent of our total rainfall each year evaporates. The remaining 35 per cent runs off the land, and of this, only about 12 per cent ends up in our rivers. Only Africa has a higher evaporation rate than Australia.

The amount of water in Australian rivers is the smallest of all inhabited continents, with South America experiencing the highest volumes of water in its rivers. For example, the Amazon River (the second-longest river in the world) carries more water than any other river on Earth with an average discharge (volume of water flowing through it) greater than the next seven largest rivers combined. Nearly 20 per cent of all the fresh water entering the oceans comes from the Amazon River.



Source 1 Average volume of yearly rainfall (km³), evaporation and run-off by world region

Source: FAO Aquastat

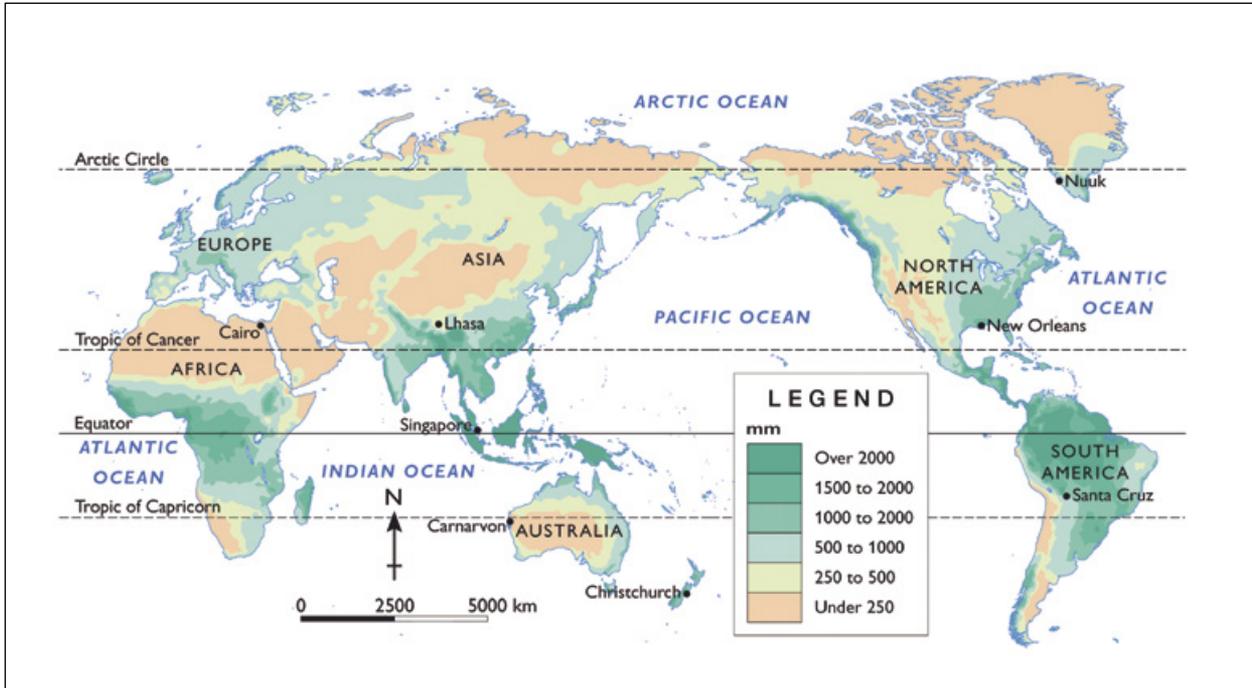


Source 2 Desert environments, such as Mungo National Park in NSW, receive limited, sporadic rainfall and have low soil moisture.



Source 3 Fresh water is found in ponds, lakes and rivers, such as this river in the Kimberley.

WORLD: ANNUAL RAINFALL



Source 4

Source: Oxford University Press



Source 5 South America's high rainfall has contributed to the creation of the Iguazu Falls, which is 80 metres high and 3 kilometres wide.

Check your learning 2.13

Remember and understand

- 1 Use Source 1 to rank the six inhabited continents from the continent with the most run-off to the continent with the least.
- 2 Which river carries the most water and how does it compare to other rivers?

Apply and analyse

- 3 Look carefully at Source 4.
 - a Which region of the world is the wettest? Why do you think this is the case?
 - b Which part of Africa experiences the lowest rainfall? What type of landscape would you expect to find here?
 - c Which part of Asia is the wettest? What are some of the advantages and disadvantages of high rainfall?
 - d Does the region north of the Arctic Circle have low or high rainfall? How might much of the water in this region be stored?

2.14 New ways of thinking about water

As global pressure on water resources increases, water experts are beginning to think of water in new ways. New terms for describing types of water and usage have been devised, including virtual water, and blue and green water. This new thinking is designed to promote a better understanding of the ways in which people use water and will help to make water usage more sustainable.

Virtual water

The amount of water used to produce a good or service is called virtual water. This includes the water used to grow crops or raise animals as well as the water needed to process these crops and animals into products. Experts coined the term virtual water because we cannot actually see how much water went into producing the goods and services we consume every day. For example, 15 000 litres of water is needed to produce just 1 kilogram of beef. This 15 000 litres of water is known as virtual water.

It is often impossible to move real water between water-rich countries and water-poor countries. It is, however, relatively simple to transport virtual water in the form of goods, such as meat and wheat. This helps to support water-poor countries with their water needs.

Blue water and green water

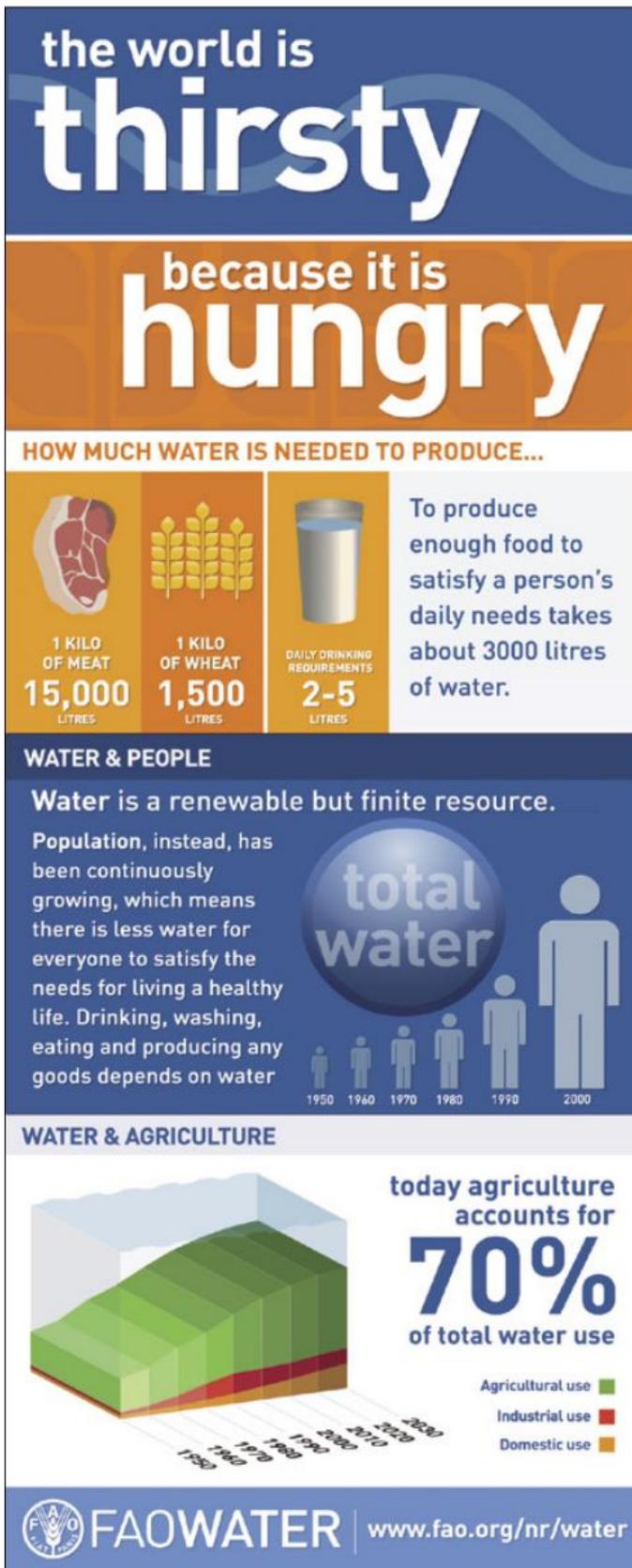
Historically, water suppliers have focused on the capture and supply of blue water (that is, water in storages, such as lakes, rivers and aquifers) over green water (that is, rainwater stored in the soil as soil moisture). Green water is the water that remains in the soil to be used by plants. Farmers in dry regions, such as the interior of Australia, need to understand how to manage both their blue water resources and their green water resources. Installing a rainwater tank to collect and store water for later use is an example of blue water management. Adding a layer of mulch to slow the evaporation of water from the soil is an example of green water management.

Water footprints

The total amount of water you consume each year is known as your **water footprint**. This includes the real water you consume (by drinking, bathing and cleaning) and the virtual water you use through your consumption of goods and services. The total volume of water used by everyone who lives in a country, including the water used to produce exported goods, is the national water footprint.

Source 1 One kilogram of rice contains 1500 litres of virtual water, making it one of the world's thirstiest crops.





Source 2 A poster from the United Nations that uses the idea of virtual water to communicate a message

The size of a country's water footprint is largely determined by the country's:

- climate, especially the amount of rainfall and evaporation
- farming methods, especially how efficiently water is used
- production and consumption of crops
- general consumption and production patterns.

Countries where people eat lots of beef and rice and buy many manufactured goods use more water than countries where people eat mainly vegetables and have few personal goods.

Australians are one of the world's biggest water users. It is estimated that Australia's population will increase to about 35 million by 2056 and this will place a great strain on an already stressed water-supply network. Experts believe that Australia's capital cities, for example, will need 76 per cent more water by 2056 than is currently supplied.

The good news is that Australians have embraced new water-saving measures. Despite the population of Australia increasing by 7.7 per cent between 2003 and 2009, the amount of water used by households actually fell by 12 per cent. This is due largely to water restrictions in many capital cities and the use of new technologies, such as dual-flush toilets and water-saving showerheads.

Check your learning 2.14

Remember and understand

- 1 What is virtual water?
- 2 What is the difference between blue water and green water?
- 3 Why is it important to understand virtual water when working out your water footprint?
- 4 How can an understanding of virtual water help water-rich countries to decide what to produce and export?

Apply and analyse

- 5 Source 2 states that the world is thirsty because it is hungry.
 - a What does this mean?
 - b What evidence is presented to support this idea?

2C rich task

Windhoek, Namibia

Namibia is the driest country in Africa south of the Sahara Desert. Its capital, Windhoek, receives about 360 millimetres of rainfall a year and its 250 000 people rely on three dams for most of their water. These dams, however, are built on rivers that do not always flow and are therefore unreliable for city water use.

In 1969 the government decided to mix water from traditional sources, such as dams and wells, with recycled water from the city's sewage-treatment plant in order to supplement Windhoek's fresh water. As the city's population continued to grow rapidly, in the 1990s it was decided to build another treatment plant to convert sewage into drinking water. This was completed in 2002. Now more than one-third of Windhoek's drinking water comes from this unlikely source, making the city the world leader in turning waste-water into drinking water.



Source 1 Water is a scarce and precious resource in Namibia. These women walk for hours a day to get water.

Source 2 Climate data: Windhoek, monthly averages

| Months | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Rainfall (mm) | 76 | 74 | 79 | 41 | 8 | 0 | 0 | 0 | 3 | 10 | 23 | 48 |
| Temperature (°C) | 29 | 28 | 27 | 25 | 22 | 20 | 20 | 23 | 25 | 29 | 29 | 30 |

skilldrill

Drawing climate graphs

Climate graphs combine column graphs and line graphs to help us interpret the climate in a specific location. In order to draw a climate graph, geographers gather climate data – the monthly average rainfall and temperature – for the location they are investigating.

Step 1 Look carefully at the climate data to find the lowest and highest temperature figures that you will need to show on your graph. In this example, Windhoek's temperature varies from 20 to 30 degrees Celsius. Decide on a scale that shows this range of data, then place it on the left-hand axis of your climate graph.

Step 2 Using graph paper, plot the temperature data on your graph by placing a small, neat dot in the centre of each month at the correct height. Join the dots with a smooth red line and continue the line to the edges of the graph.

Step 3 Look carefully at the climate data to find the lowest and highest rainfall figures that you will need to show on your graph. In this example, Windhoek's rainfall varies from 0 to 79 millimetres a month. Decide on a scale that shows this range of data, then place it on the right-hand axis of your climate graph.

Step 4 Plot the rainfall on your graph by drawing a blue column to the correct height for each month. You may like to very lightly shade the bars with a blue pencil.

Step 5 Complete your graph with a suitable title and a label for each of the three axes.

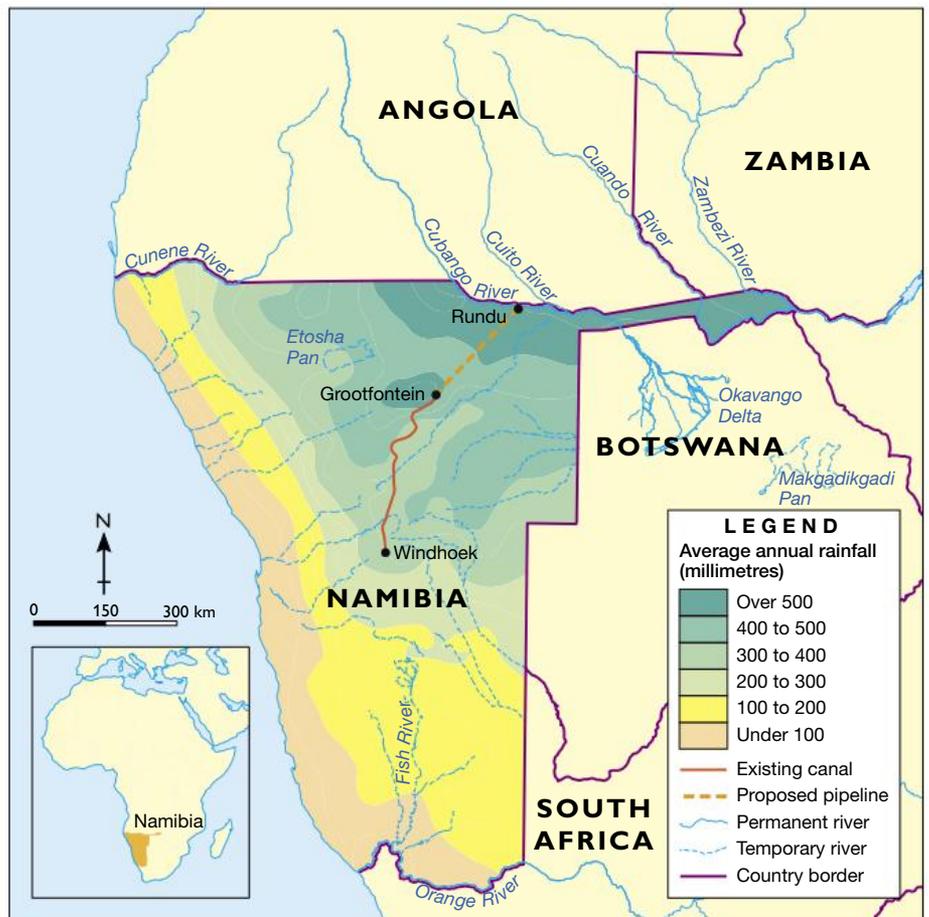
Apply the skill

1 Using the steps shown above and the data in Source 2 and referring to the Alice Springs climate graph (Source 1 on page 66), construct a climate graph for Windhoek.

Extend your understanding

- Describe the annual pattern of rainfall in Windhoek.
- Explain how this annual pattern makes dams and reservoirs an unreliable water resource.
- Describe the annual pattern of temperature and explain the impact of these temperatures on the evaporation of water held in dams.
- Compare the climates of Windhoek and Alice Springs (Source 1 on page 66).
- Examine the map of Namibia. Identify three water resources on this map.
- What have the people of Windhoek done to make their water supply more sustainable and safe?
 - What problems does lack of access to safe water cause?
- Use the information on the map (Source 3) to explain why a pipeline is proposed to be built from the Cubango River to Grootfontein.
- Why would the people of Botswana be concerned about this proposed pipeline?

NAMIBIA: AVERAGE ANNUAL RAINFALL



Source 3

Source: Oxford University Press

Source 4 Many Namibian rivers (like the one shown below) are only temporary, meaning they are dry for most of the year.



2.15 The challenges of managing water

Water is an essential environmental resource that is important for the health of humans and the health of the environment. Different values are often placed on water; for example, water used for economic purposes can also have great spiritual and cultural importance for a community. Competition for water use needs careful management. It is often not easy to come up with solutions. Water management is difficult because:

- It is an essential resource needed by every person on the planet.
- It moves through the environment quickly so it is difficult to capture and store.
- Its availability is not constant – it changes over time and in different locations.
- It is a shared resource with many competing uses.

Over the past 50 years the world's population has doubled, and the output from farms and industries has surged to meet increasing demands. The growth in demand and competition for water has put a much greater strain on global water supplies. We need to make good decisions to fairly share the use of water and minimise the impact our water use has on the natural environment.



Source 1 Sewage spills into the Ganges River in the city of Varanasi

Case study: Ganges River, India

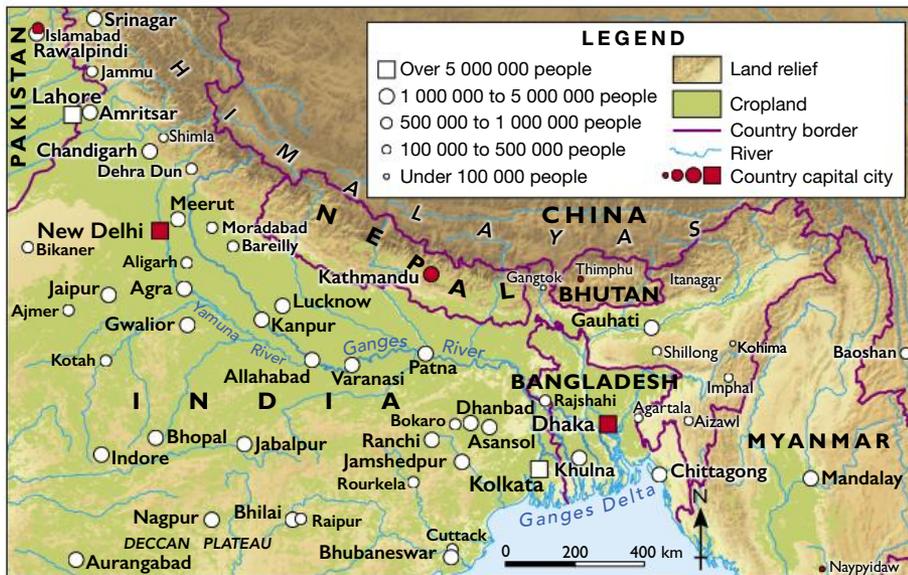
The Ganges River begins high in the Himalayan mountains, and travels across India before flowing east into Bangladesh and into the Bay of Bengal. In total, the river is 2525 kilometres long. The Ganges is worshipped by Hindus, who believe bathing and praying in the river purifies them. This sacred river is also used by millions of Indians who live along its banks and depend on it for their daily needs.

In the last 30 years, India's population has grown to nearly 1.2 billion people; one-third of these people live along the banks of the Ganges. Huge increases in the size of cities, factories and agriculture have put enormous pressure on the river. Irrigation canals siphon off large amounts of water to grow food for the country's increasing population. Untreated **waste-water** is dumped into the river from cities and towns that lack proper sewage-treatment facilities. Around 25 per cent of India's population work in manufacturing and industry. The waste-water and **effluent** from these industries often contain hazardous chemicals. The Ganges is now one of the most polluted rivers in the world.

Overuse and lack of management have meant that India's most sacred river is gradually dying. In Varanasi, a city on the banks of the Ganges in north-eastern India, the bacterial count in the water is 3000 times higher than the safe levels established by the World Health Organization. Polluted water is the main cause of skin problems, disabilities and infant deaths, but many Hindus refuse to accept that the Ganges (or Mother Ganga as they call it) is the source of these problems. 'People have so much faith in this water that when they bathe in it or sip it, they believe it is the nectar of God [and] they will go to heaven,' says a scientist at the Central Pollution Control Board in India.

In 2011, Indian officials signed an agreement with the World Bank for a \$1 billion loan to finance a government project that aims to stop the flow of untreated waste-water into the Ganges by 2020.

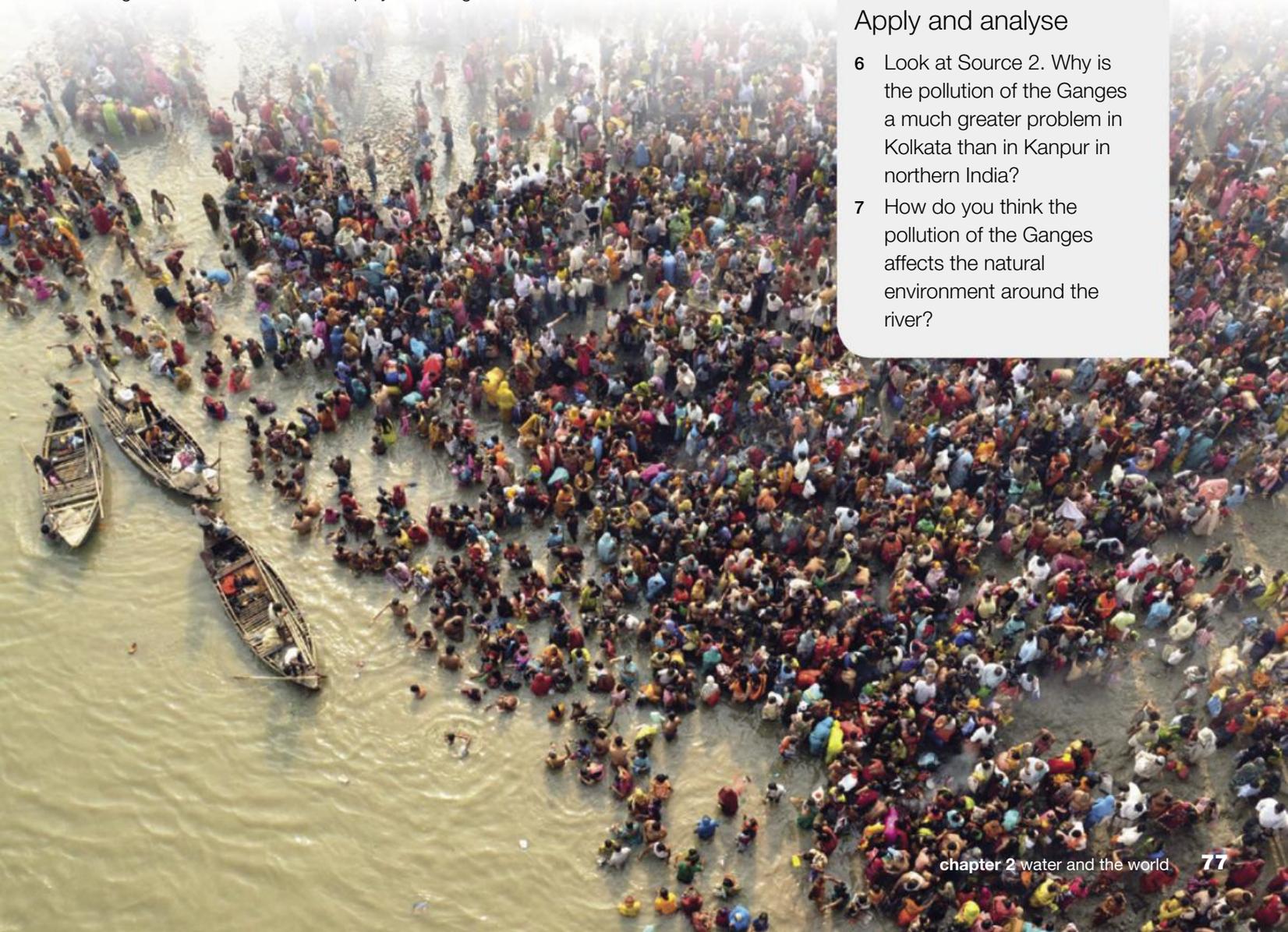
COURSE OF GANGES RIVER



Source 2

Source: Oxford University Press

Source 3 Tens of thousands of Hindu devotees gather on the banks of the holy Ganges River to bathe and offer prayers during Karthik Purnima festival in Patna, India.



Check your learning 2.15

Remember and understand

- 1 Why is water difficult to manage?
- 2 List three reasons why water resources are under threat.
- 3 Look carefully at Source 3.
 - a Why have all of these people gathered at the Ganges River?
 - b What dangers do they face?
- 4 List as many competing uses of the Ganges as you can.
- 5 Why is the Ganges River so difficult to manage?

Apply and analyse

- 6 Look at Source 2. Why is the pollution of the Ganges a much greater problem in Kolkata than in Kanpur in northern India?
- 7 How do you think the pollution of the Ganges affects the natural environment around the river?

2.16 Water and Indigenous Australians

Water is a vital resource valued by both Indigenous and non-Indigenous Australians. Non-Indigenous Australians generally consider water as a natural resource with great economic and aesthetic value. Indigenous Australians on the other hand generally value water for cultural and spiritual reasons. They regard the rivers and waterholes as an inseparable part of their land. Land and water management is a key part of the culture of Aboriginal and Torres Strait Islander peoples.

A spiritual connection with water

Prior to European settlement, most Aboriginal peoples lived in the well-watered coastal areas and along the rivers of the Murray–Darling Basin. Aboriginal people in the arid areas of Australia studied the habits of wildlife to detect water supplies. They mapped the location of water in their artwork. In these maps, spirals identified the location of pools and wells while wavy lines showed the location of running water (see Source 2).



Source 2 In the past, Indigenous Australians communicated the location of water resources through symbols on maps (like this one) and through spoken instructions and stories.

Aboriginal people also passed on their knowledge of water resources through stories. The Worrorra people live in the Prince Regent River region of the Kimberley. Their Dreaming (or Lalai) stories tell of the formation of the Prince Regent River.

The stories tell of how the Wunggurr snake (a creator) dug a path where the Prince Regent River now flows by travelling from far inland to the sea. Other creator beings called Wandjina then took the animal forms of Rock Cod and Melo (a large sea snail), and created Malandum (the Prince Regent River) by swimming upstream along this path. At what is now called King Cascade Falls, Rock Cod was forced to stop abruptly by the Lalai Bowerbird and thrust herself against the soft mud, where she created a step-like cliff. Today, a waterfall flows over these rocks from the stream above where the Bowerbird lives (see Source 4).

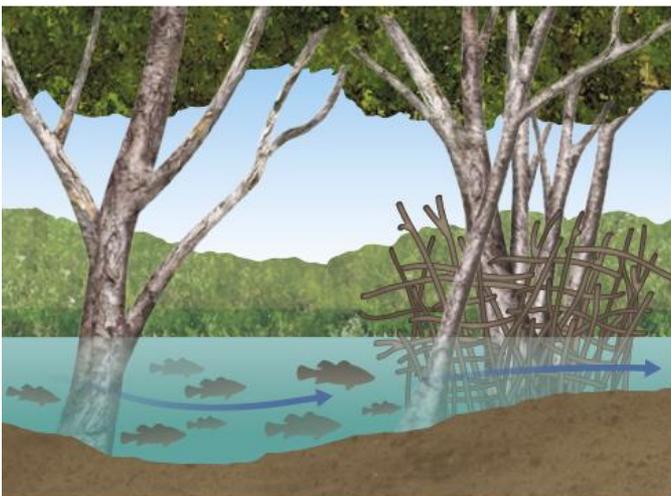
Source 1 Aboriginal links to water in the Kimberley region of Western Australia go back thousands of years. These scenes were created by the Worrorra people on a cave ceiling about 8000 years ago. The scene is said to depict a 'great fish chase', showing figures representing both Rock Cod and Dugong and their Wandjina captors.



Indigenous water management

Traditionally, Aboriginal peoples in drier areas of Australia depended on their knowledge of water sources to survive. They accessed water trapped in waterholes, rocks and tree hollows. They watched the flight paths of birds, such as the zebra finch, to help uncover wells and springs. The long roots of eucalypt trees were followed to find underground water, and water was collected from the morning dew on plants. Indigenous Australians would also enlarge rock holes and chip channels through rocks to divert water into specific holes to increase their access to water. To catch fish, dams were built across narrow creeks using rocks or woven branches (see Source 3).

In modern Australian society, Indigenous Australians have been largely left out of the decision-making process when it comes to managing their traditional water sources. In some remote areas of Australia, many traditional water sources have become unreliable or unusable because station owners have given their cattle access to these important areas without consulting the Aboriginal peoples.



Source 3 An Aboriginal dam made of woven branches designed to catch fish.

Urlampe in the Northern Territory, 1330 kilometres south-south-east of Darwin, is home to one of Australia's most remote Aboriginal communities. Allan Rankine of the Urlampe Aboriginal Corporation is responsible for managing the water supply for the community. Allan decides what water the community pumps from the bore and how it will be distributed. Traditionally, Aboriginal land and water management plans are clearly defined and everyone understands and respects them.



Source 4 King Cascade on the Prince Regent River is now a popular tourist destination.

However, Allan and the traditional owners of the area do not have control over all important water resources in the region. The permanent spring that Allan visited as a child has been polluted by cattle. This once valuable water resource is now undrinkable.

Check your learning 2.16

Remember and understand

- 1 Where did most Aboriginal peoples live in Australia before Europeans arrived in 1788?
- 2 Give examples of traditional and modern Aboriginal water management.
- 3 How are Indigenous and non-Indigenous views of water resources different?
- 4 Both Aboriginal peoples and Europeans built dams along the Murray River. What impact did each have?

Apply and analyse

- 5 Look carefully at Source 4.
 - a What is the spiritual value of this place to the local Indigenous people?
 - b What value might this site have to a tourist?
- 6 Look carefully at Source 2.
 - a Sketch the symbols you think represent water holes and running water.
 - b Why were maps such as these important to Aboriginal communities?
 - c Why do you think maps like these are still being produced by Indigenous Australians?

2.17 Competition for water supplies

Fresh water from rivers is used by people in cities, farms and factories. Competition for this precious economic resource has seen the introduction of dams all over the world to store the water flowing down rivers and ensure a constant supply of water to the people nearby. Because people living along the entire length of rivers depend on them for water, competition also exists between upstream and downstream users. The flow and quality of water available to downstream users depends on how the river is used upstream.

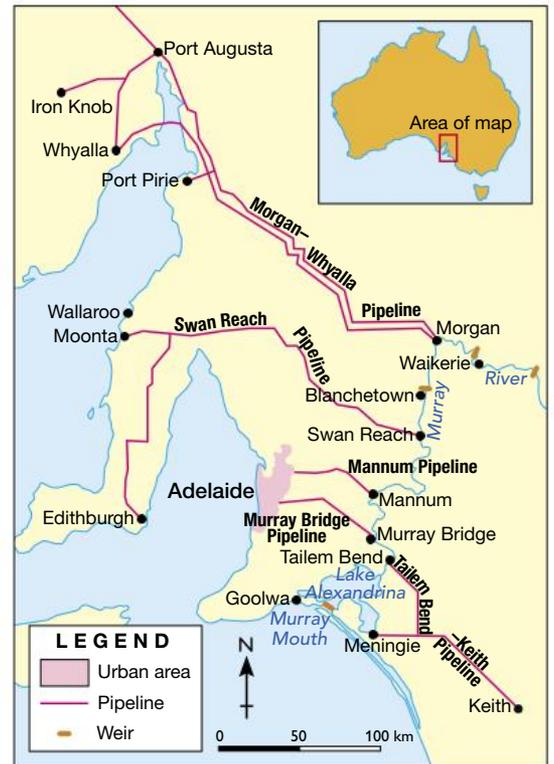
Case study: the Murray River

The Murray River provides an excellent example of what happens when demand for river water threatens to outpace supply. Water from the Murray River has many competing uses, including irrigation, domestic urban water supply, industrial water supply, maintaining the natural environment, recreation, navigation, hydroelectricity and water storage. There are three major water storage dams on the Murray River. There are also 10 weirs (another type of dam) built across the river to slow the river flow and allow towns to access the water. Locks have been built where the water level can be raised and lowered to allow boats to travel from one side of the weir to the other.

A series of pumps and pipes carries some of the water from the Murray River to water users in towns, cities and farms many kilometres from the river (see Source 1). One of these pipes carries water from the town of Mannum to Adelaide, 60 kilometres away. The amount of water pumped from the river to Adelaide varies from year to year but can be as high as 90 per cent of Adelaide's water needs in some years.

The agriculture sector is by far the largest user of water from the Murray River. On average, 3780 gigalitres (3780 billion litres) is diverted each year to irrigate farmland to grow crops and raise livestock. Clearing of native vegetation in the river valley has

MURRAY RIVER AND SOUTH AUSTRALIAN WATER PIPELINES



Source 1

Source: Oxford University Press

Source 2 Oblique aerial photograph of the Murray River at Mannum, South Australia



enabled irrigated crops and pastures to be grown, but also forced salty groundwater to the surface and into the river. Along with pesticides and fertilisers, the salty water causes problems for users downstream. Near the South Australian town of Waikerie a system of pumps intercepts some of the salty water before it reaches the Murray River. It is carried in pipes to a 400-hectare lake. It is estimated that this scheme prevents more than 100 tonnes of salt a day reaching the river. Most of the water not used for irrigation is diverted to homes and industries throughout South Australia through six major pipelines (see Source 1). The average amount of water that flows from the Murray River into the ocean near Adelaide is now just 25 per cent of the total natural flow. This is because around 75 per cent of this water is taken out of the river upstream.



Source 3 This image was taken in 1981 when the mouth of the Murray River completely closed, creating changed conditions for wildlife and plants in the region.

keyconcept: Scale

The changing scales of water management

The water in the Murray River is one of Australia's most precious resources but is very difficult to manage. This is mainly because there is so much competition for the water. The water is used by thousands of farmers to produce food and other products for millions of people. Many towns and cities in three different states use the river to supply residents with water for their homes and businesses.

In the past, many upstream water users have only considered their own water needs when taking water from the river. They have not considered how this would impact on people and places downstream. We now know that this local-scale approach to water use damages the health of the river. Water must be managed at the regional scale, considering the needs of all water users and the environment in the entire river basin. For more information on the key concept of scale, refer to page 11 of 'The geography toolkit'.

Check your learning 2.17

Remember and understand

- 1 What competition is there for Murray River water?
- 2 What are the two major uses of Murray River water?
- 3 How have the competing water uses of boating and water storage in weirs been catered for along the Murray?
- 4 What problems have been caused downstream by upstream usage of the Murray River water?

Apply and analyse

- 5 Why is it difficult to manage the water resources of the Murray River?
- 6 In the foreground on the left of the Mannum oblique aerial photograph (Source 2) you can see a small

marina and a residential development. Are these developments at a local or regional scale?

- 7 Examine Source 1.
 - a How many pipelines are shown that access water from the river?
 - b Use the scale to estimate the distance water travels from Swan Reach to Edithburgh.

Evaluate and create

- 8 Draw a map of Source 2. Use a legend to show the following features: the Murray River, irrigated farmland, irrigated golf course and sporting ground, a marina for houseboats and the town of Mannum.

2.18 Managing water scarcity

Water is most difficult to manage when there is not enough to go around. Water becomes scarce when the demand for clean water exceeds the available supply. It is one of the biggest issues facing Africa, the second-driest inhabited continent in the world after Australia. Whereas all Australians have access to clean water, millions of Africans face water shortages. Of the 800 million people who live in Africa, more than 300 million live in water-scarce areas.

The cause

The main reasons for water scarcity in Africa are:

- a large and fast-growing population
- large areas with low and variable rainfall
- poor water quality
- lack of water infrastructure, such as pipelines.

The problem

Water scarcity contributes to the deaths of many African children. Local water sources may contain harmful bacteria that cause diseases, such as typhoid and dysentery. These diseases are spread by drinking and washing in contaminated water.

Source 1 A young girl in Guinea-Bissau enjoys clean water from a new well that has been sponsored by the World Vision aid agency.

The solution

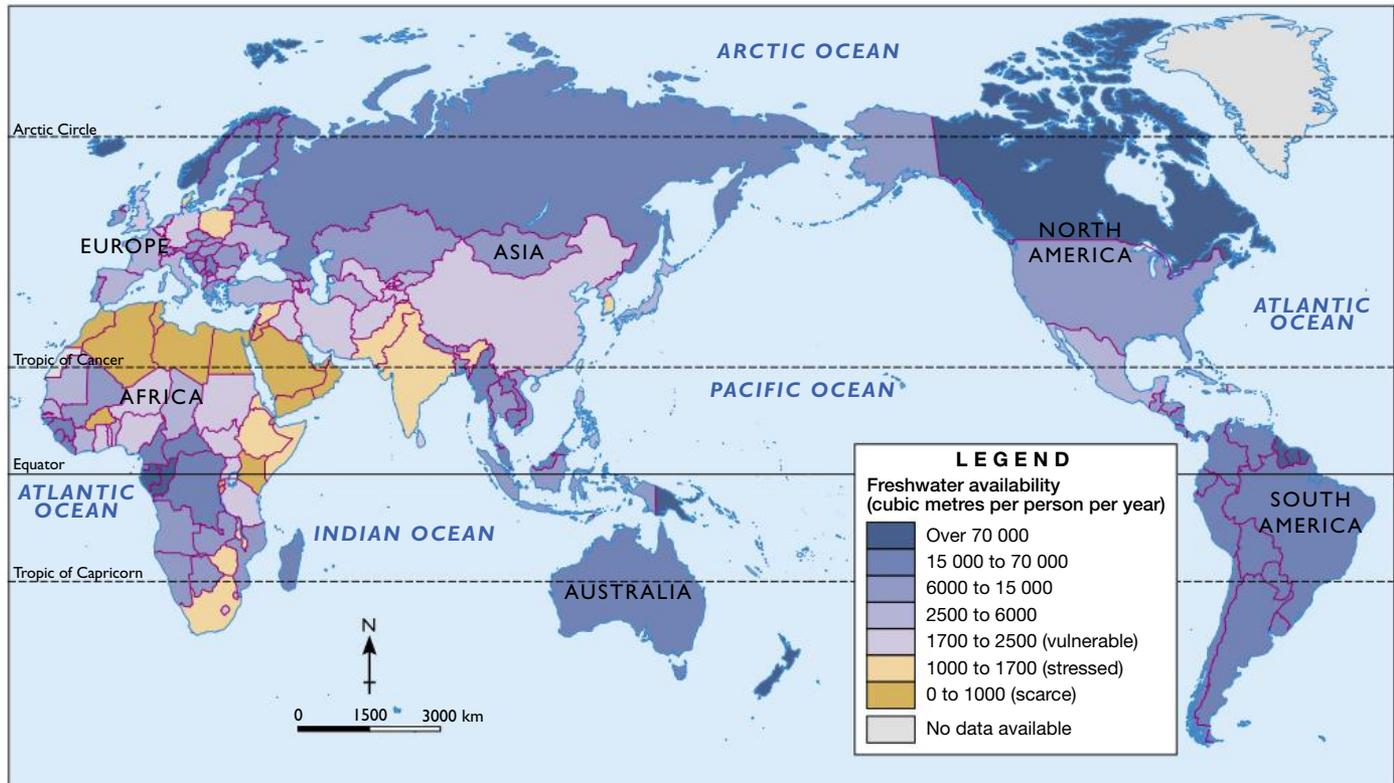
The most common solution to water scarcity in African villages is digging a well. A water well is created by digging or boring into the ground in order to reach groundwater in underground aquifers. Clean water from a well stops people catching any water-borne diseases. Providing clean and drinkable water for communities across Africa is a high priority for many of its **developing countries** and international relief agencies, such as World Vision and AusAID.



Source 2 This woman in Zambia is collecting water from a dried-up river bed half a kilometre from her house. She uses a saucepan to fill the large container, which she will carry on her head or shoulder back to her home.



WORLD: FRESHWATER AVAILABILITY PER PERSON PER YEAR, 2007



Source 3

Source: Oxford University Press

Source 4 A woman fills a water container from a well in the desert in Niger. In most African societies, women are the collectors and managers of the family water supply. African women can spend up to 60 per cent of their day collecting water, especially where water sources are far from the village.



Check your learning 2.18

Remember and understand

- 1 What is water scarcity?
- 2 Why is water scarcity such a problem in Africa?
- 3 What problems does water scarcity cause, especially for women and young children?

Apply and analyse

- 4 Look carefully at Source 3.
 - a Describe the area of Africa that suffers most from water scarcity.
 - b Australia is the driest inhabited continent on Earth. Does it have a water scarcity problem? Why or why not?
 - c Compare freshwater availability in Australia and New Zealand. Which country has access to more fresh water? Why do you think this might be the case?

Evaluate and create

- 5 Create a poster or PowerPoint presentation highlighting the problems of water scarcity in Africa and how it affects people's lives.

2.19 Managing water in Australia's biggest cities

In order to ensure that reliable supplies of safe water are available for use now and into the future, we all need to use water more **sustainably**. Careful management of our existing supplies and reductions in our consumption will help to achieve this. We also need to remember that people are not the only living creatures on the planet. The interests of all living organisms need to be considered if the natural environment is to be protected for the future.

Source 1 The Warragamba Dam near Sydney is one of the largest domestic water supply dams in the world. It supplies 80 per cent of Sydney's water.



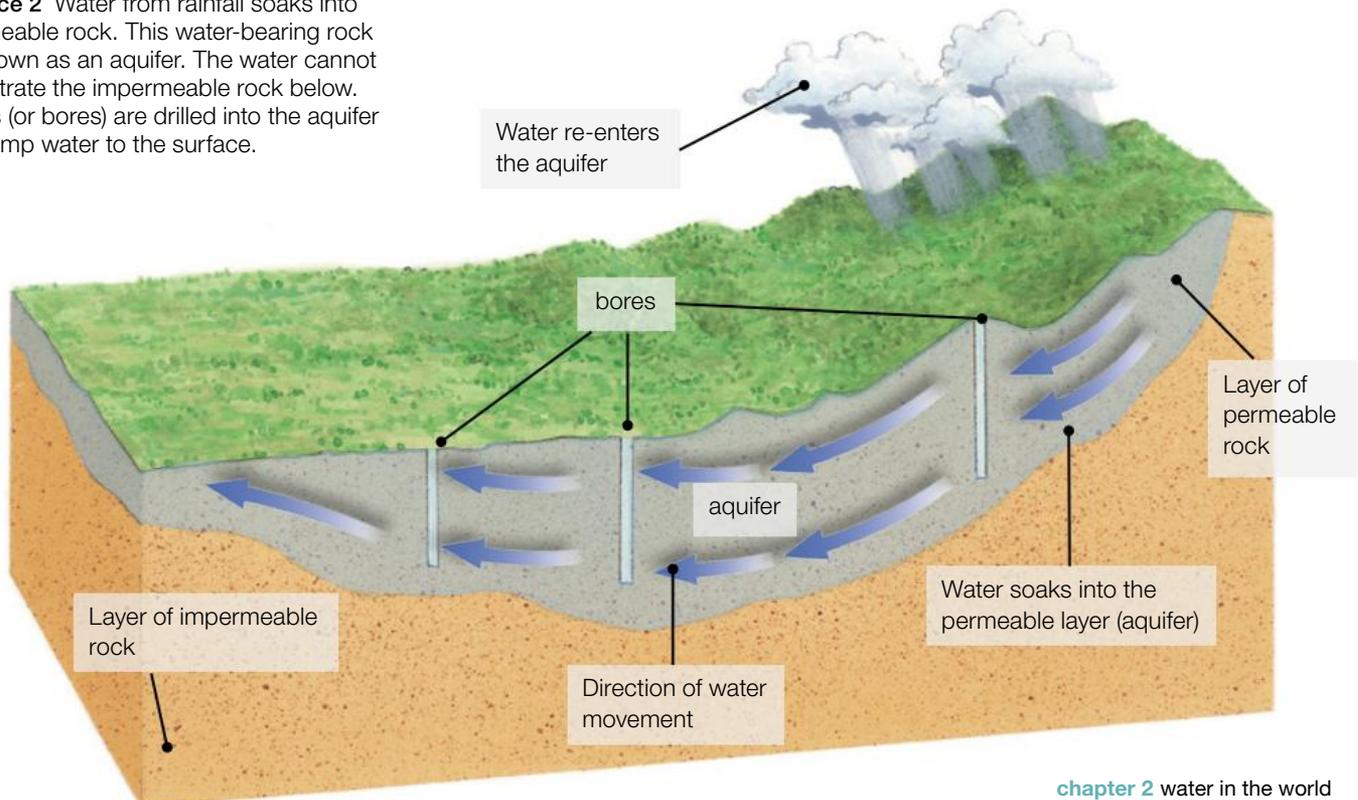
Ensuring reliable water supplies in Australian cities

Over 60 per cent of Australia's population lives in one of our five largest cities – Adelaide, Brisbane, Melbourne, Perth and Sydney – all of which are home to more than a million people. The sites of these cities were chosen in large part because of their reliable rainfall and access to fresh water from neighbouring rivers. However, all of these cities have now outgrown their original water supplies. Large dams have been built to provide a permanent water supply for large towns and cities, but population growth and drought have put enormous pressure on these reserves. As a result, many Australian cities are now looking at a number of strategies to reduce their water usage and ensure they have access to reliable supplies into the future. Some of these options are discussed here.

Option 1: Build more dams

Across Australia, governments are thinking about building more dams to create a reliable water supply for our growing population. Dams can also be used to create hydroelectric power when water let through the dam wall turns a turbine to create electricity.

Source 2 Water from rainfall soaks into permeable rock. This water-bearing rock is known as an aquifer. The water cannot penetrate the impermeable rock below. Wells (or bores) are drilled into the aquifer to pump water to the surface.



Option 2: Use underground water reserves

Drilling water **bores** is a common method used on Australian farms for supplying water for irrigation and animals. Many Australian cities have started to use this method to add to their freshwater supplies. Deep holes, called bores, are drilled down into a layer of rock under the ground that holds water. This layer of rock is called an **aquifer**. The water is then pumped to the surface (see Source 2). It is also possible to replace the water in the aquifers during wet periods by pumping the water back underground. In this way, aquifers operate as underground dams. In Western Australia scientists are trialling a method of treating storm water (rainwater that falls on the hard surfaces of a city, such as roofs and roads) and using it to recharge the aquifers that supply much of Perth's water.

There are large aquifers in many areas of Australia, including beneath Melbourne. Often this water has a high mineral content and must be treated before it can be used for drinking and other household uses. This water could be used for industrial purposes, such as to clean machinery and irrigate crops. This would allow drinking water, currently used for these other purposes, to be added to the city's water supplies. This idea of using lower-quality water for non-domestic purposes has been considered in many Australian cities.

Option 3: Build desalination plants

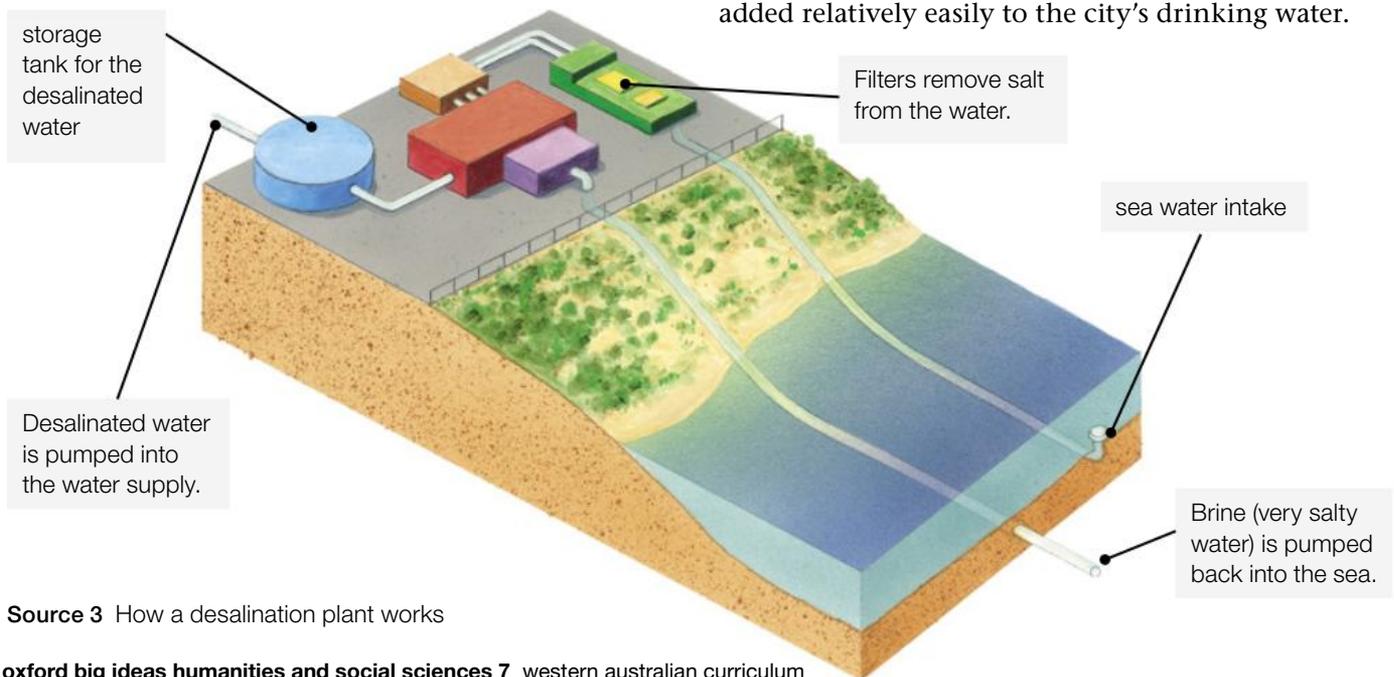
Desalination plants treat sea water to remove from it the salt and other impurities (see Source 3). This process, known as reverse osmosis, turns sea water into fresh water for drinking. As Australia has easy access to a vast supply of sea water, desalination plants are an attractive option for many cities.

There are three main reasons why there are not more of them already:

- Desalination plants cost a lot of money, making the water they produce expensive. The Perth desalination plant, opened in 2006, cost \$387 million to build and adds about \$44 a year to every consumer's water bills.
- Desalination plants use a lot of electricity. It has been estimated that the Sydney desalination plant uses as much electricity as 120 000 households. A new power plant had to be built to run it, adding to the cost.
- Desalination plants can damage the environment. They release highly concentrated salt water (brine) back into the ocean, which can harm marine animals.

Option 4: Build water pipelines

Perhaps the simplest method of ensuring a reliable water supply is to move water from areas that have a surplus. This already happens in most Australian cities. Rainwater is collected in catchments in the hills and forests close to cities and piped to treatment plants and then to water users.



Source 3 How a desalination plant works



Source 4 In some parts of Australia, such as the Eastern Goldfields region of Western Australia, water has to be piped in from other areas. This pipeline carries water from Perth to Kalgoorlie.

One proposal currently involves piping water not just hundreds of kilometres but thousands. For many years, there has been an idea to pipe water from the Fitzroy River in the Kimberley region in north-western Western Australia to the city of Perth. This pipeline would need to be 3700 kilometres long. The cost of transporting water this far through steel pipes is much greater than other options, such as desalination plants, and so this method is unlikely to be used in the near future. It will also cause environmental problems at the source of the water and would require large amounts of energy to build and operate.

Option 5: Capture and store storm water

Storm water is collected in pipes and gutters and discharged in the sea or rivers. Rainwater tanks capture this fresh water but cities have not been designed to collect this water on a large scale.

In Adelaide, there is a plan to capture this water through existing pipes and treat it in the current water-treatment facilities. In this way, it could be added relatively easily to the city's drinking water.

Option 6: Recycle and treat waste-water and sewage

Water that leaves our homes is generally unsuitable to be used again. In using the water to clean clothes, dishes and ourselves and to flush toilets we have polluted the water. This water (known as waste-water or sewage) is usually piped to a treatment plant where it is cleaned and purified and then released back into rivers and bays. In some places, notably Singapore and Windhoek (see 2C Rich task) in Namibia, this water is added to rainwater and piped back into homes and to other water users.



Source 5 At this plant in Singapore, waste-water (sewage) is processed and then used in industry or blended with rainwater for use in homes.

keyconcept: Sustainability

In trying to use our resources sustainably, we sometimes have to change our attitudes and behaviours. While many Australians believe that we should use less water or use water from different sources, it can be difficult to convince people to change.

In 2012 the Western Australian Government successfully completed a trial of the Groundwater Replenishment Scheme and set a goal to deliver the project officially by the end of 2016. This scheme involves treating waste-water using a number of methods so that it meets drinking water standards. It is then injected as groundwater where it continues to be cleansed naturally. The water is removed later and treated again before it is used as drinking water. The project has the capacity to recharge 14 billion litres of water into groundwater supplies

One of the great benefits of storing drinking water as groundwater is that groundwater supplies are not affected by changes in climate the same way dams or rivers might be. As Australia continues to experience a dryer climate, increased groundwater supplies could help Western Australians by reducing the need for rainfall for drinking water, and by sustainably recycling water rather than wasting it.

While some people might not like the idea of drinking wastewater, recycled water is an important addition to our water supply and is actually very clean once it has been treated. For more information on the key concept of sustainability, refer to page 9 of 'The geography toolkit'.

Check your learning 2.19

Remember and understand

- 1 In your own words, describe what a sustainable resource is.
- 2 List five different ways that governments might investigate to find extra water resources for growing cities.
- 3 When a new dam is built across a river, what problems are caused for people and wildlife upstream from the dam?
- 4 How can aquifers be used to provide and to store water?
- 5 What are the advantages and disadvantages of desalination?
- 6 Where does the water that you use at home come from? Where does it go when you are finished using it?

Apply and analyse

- 7 Why doesn't Perth pipe water from wet places in Western Australia?

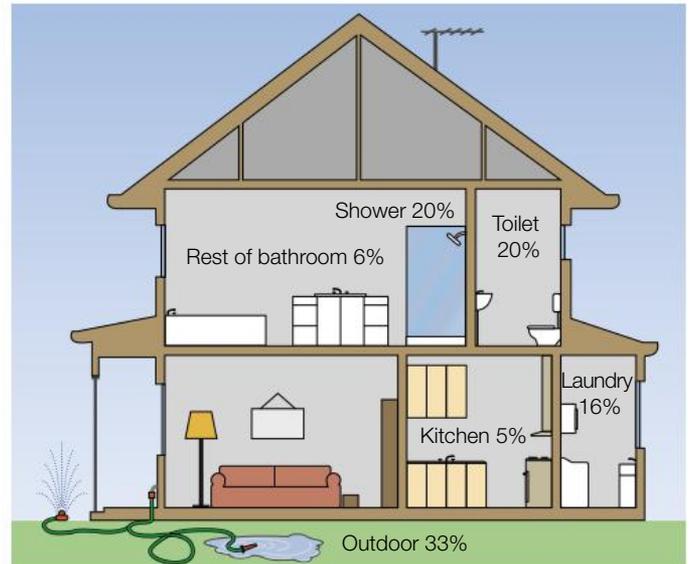
Evaluate and create

- 8 Complete the following activities:
 - a Research Perth's current water supply. Which of the water supply methods described here does it currently use?
 - b Which of these methods do you believe should be used to add to this water supply?
 - c What impacts would these new methods of water supply have on the natural environment and the cost of water?

2.20 Managing water at home

The easiest way for us to become involved in water management is to understand how we can be more water wise at home. A resource management plan takes into account the range of uses of the resource, the amount of the resource required and the impact of resource use on the environment. Decisions are then made about what is the best and most sustainable way to use the resource. Sustainability is an important concept in geography. In order for a resource to be used sustainably there must not be so much used that it affects the ability of the resource to replace itself naturally. Domestic users of water are under more pressure than ever before to manage their water use properly as our water resources become more stressed.

As you have learnt, Australians are among the highest users of water in the world. Nearly half of the domestic water usage occurs in the bathroom. To improve water management in the home we need to select water-saving appliances, capture and recycle water and attempt to use less water. To ensure we have a sustainable supply of water into the future, think about some of the water-saving ideas shown in Source 1.



Source 2 Water use in the home

Bathroom

Take shorter showers and install new water-efficient showerheads that use no more than 9 litres of water per minute (compared with old-style showerheads that use 20 litres per minute). This can save up to 20 000 litres of water per person per year.

Laundry

Only use the washing machine when you have a full load. Redirect the waste water from the washing machine into a collection bin and use it on the garden, but make sure you use detergents that will not kill your plants.

Outside

Don't use the hose to clean hard surfaces outside; use a broom. Install a plastic pool cover to reduce water lost to evaporation. Install a rainwater tank to use the water that falls on your roof. It can be used to flush toilets, wash clothes and water the garden. Top up the pool with water from the tank.

Kitchen

Don't rinse dishes under a running tap. Ensure the dishwasher is full before turning it on.

Garden

Plant native gardens using local plants that are accustomed to the climate and soil conditions in your area. Use drippers to deliver water directly to the base of the plants where they need it. Avoid sprinklers, which allow water to be blown away and evaporated.

Source 1 A range of simple water-saving ideas

keyconcept: Sustainability

The air shower

Despite living in one of the world's driest places, Australians are among the world's biggest water users. Many scientists believe that our use of water is not sustainable and have looked for ways to increase our water supply or decrease the amount of water we use.

AIR SHOWER SET TO CUT WATER USE BY 30 PER CENT

As Australians become increasingly alert to the importance of using water wisely in the home, CSIRO researchers have found a way to use a third less water when you shower – by adding air.

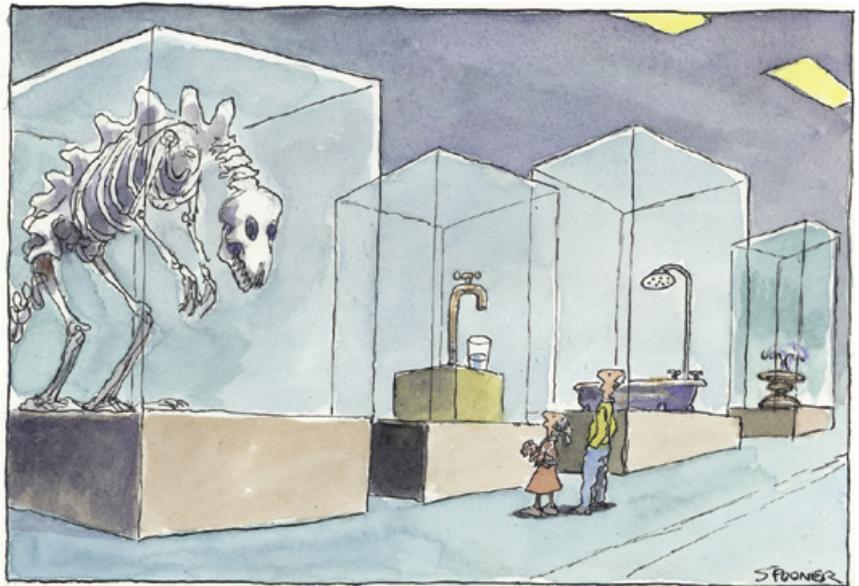
The scientists have developed a simple 'air shower' device which, when fitted into existing showerheads, fills the water droplets with a tiny bubble of air. The result is that the shower feels just as wet and just as strong as before, but now uses much less water.

The researchers, from CSIRO Manufacturing Materials Technology in Melbourne, say the device increases the volume of the shower stream while reducing the amount of water used by about 30 per cent.

Given the average Australian household uses about 200 000 litres of water a year, and showers account for nearly a third of this, the 'air shower' could help the average household save about 15 000–20 000 litres a year. If you extend this across the population, that is an annual saving of more than 45 000 Olympic-sized swimming pools ...

CSIRO website

For more information on the key concept of sustainability, refer to page 9 of 'The geography toolkit'.



Source 3 This cartoon was first published in 2007 during a period of severe drought.

Check your learning 2.20

Remember and understand

- 1 What does a water management plan need to take into account?
- 2 Which room in the house uses the most water?
- 3 What is the easiest way of reducing the amount of water and energy used in the shower?
- 4 Suggest three ways that water can be gathered and reused around the home.
- 5 Give two examples of how technology can be used to help save water.

Apply and analyse

- 6 Look carefully at the news article.
 - a What have researchers at CSIRO developed to help save water in the home?
 - b What water savings do they hope to make?
 - c Apply your understanding of the air shower to develop Aa new water-saving product idea to clean dishes.
- 7 Look carefully at Source 3.
 - a What is the cartoonist suggesting about our management of water in the future?
 - b When was the cartoon drawn and what influence might this have had on the cartoonist?

Evaluate and create

- 8 Create your own water-saving reminder for display in one of the rooms of your house.

2D rich task

The Wodaabe nomads

Communities in extreme environments develop ways of life that allow them to survive and thrive. In the south-eastern part of Niger, in Africa, live the Wodaabe people. They live in a desert region where water is often scarce and feed for their cattle is in short supply. In response to these conditions they have become **nomads** and rarely stay in one place for more than 10 days. They follow the seasonal rains across the desert as rain brings grass for the cattle; this takes them on a route they have followed for hundreds of years.

The seasonal migrations of the Wodaabe take them from the clay plains near Lake Chad to the sandy soils away from the lake. Over the last few decades the lake has become smaller as other communities in the area have used its water for irrigation. This has meant that the Wodaabe have had to change annual migration routes. The reduction in the size of the lake has meant that more grass is able to grow on land that was once covered in water, but it has also meant that freshwater supplies have become less reliable.



Source 1 Packing up the homestead to follow the rains

Source 2 Climate data: Nguigmi, Niger

| Months | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Rainfall (mm) | 0 | 0 | 0 | 1 | 5 | 11 | 55 | 100 | 15 | 1 | 0 | 0 |
| Temperature (°C) | 21 | 24 | 28 | 31 | 33 | 33 | 31 | 30 | 30 | 29 | 25 | 22 |

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Understanding flow maps

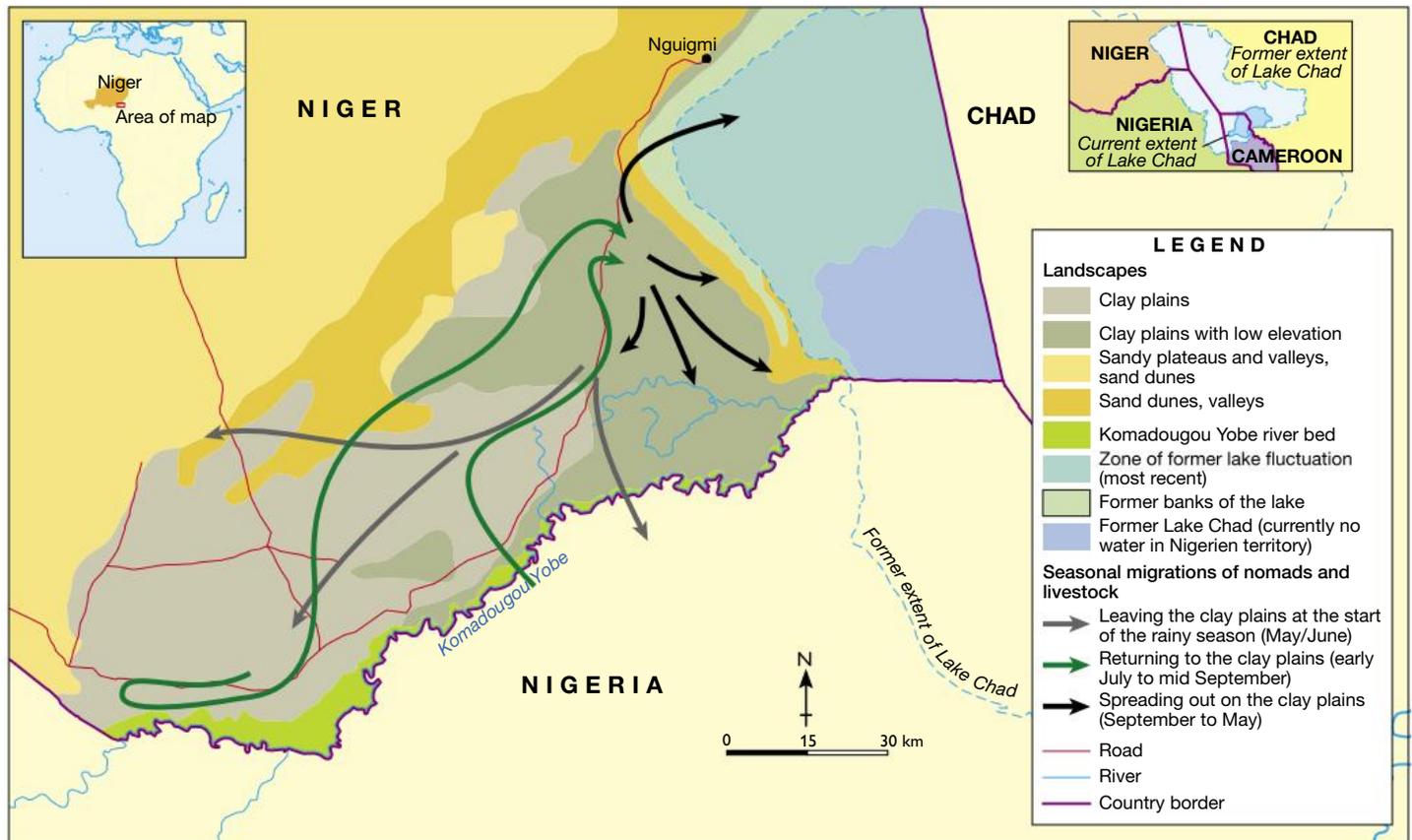
Flow maps show the movement of things from one place to another (for example, people or goods). Flow maps can be simple or complex. They can show the movement of one group of people around a small area or compare the movement of many different goods around the world. Depending on what they are showing, flow maps use arrows of different colours and sizes. These arrows help the person making the map show different things moving around and the numbers of these things. Here are some steps that will help you understand flow maps:

- Step 1** Read the title of the map carefully, as this will tell you exactly what is being shown.
- Step 2** Look at the legend on the map. This will tell you what the different coloured arrows on the map are showing and provide you extra information that you may need (like the time of year this movement happens).
- Step 3** Look for patterns in the movements shown on the map. Are the movements related to changes in the weather, to the time of year, to political or economic factors or all of these things?
- Step 4** Once you have identified the pattern being shown, try to explain the reasons for it.

Apply the skill

- Describe the movement of the Wodaabe during the months of May and June.
- Where do the Wodaabe travel to from the beginning of July to mid-September?
- In your own words, explain the pattern being shown in Source 3.

SOUTH-EASTERN NIGER: NATURAL ENVIRONMENTS AND SEASONAL MIGRATION ROUTES OF THE WODAABE



Source 3

Source: Oxford University Press



Source 4 Young men of the Wodaabe tribe

Extend your understanding

- Clay plains with low elevation are the best areas for the Wodaabe to graze their cattle in the dry season. Why? Describe the location of the clay plains with low elevation.
- Construct a climate graph for Nguigmi in Niger using climate data provided in Source 2.
 - When is the rainy season?
 - When is the dry season?
- Would you describe the Wodaabe as **voluntary migrants**?
- Source 1 shows a Wodaabe family packing their belongings, to follow the rains. Describe their possessions. How many donkeys would your family need to move?

Place and liveability

Liveable cities

There are many factors that can make a place more or less liveable. Liveability is generally measured by factors that provide quality of life, such as access to fresh water, food, housing, transport, health care, education and a safe and stable environment.

Each year, the results of a number of studies are released rating cities all over the world in order of liveability. In 2016, the capital city of Syria, Damascus, was rated as the world's least liveable city. It scored poorly in health care, public transport, crime and sanitation. Melbourne, Australia, was rated the world's most liveable city.



3A

What makes a city liveable?

- 1 What does this photograph (Source 1) tell you about the availability of services (such as water, housing and education) in Dhaka?
- 2 In Syria there is widespread poverty and government corruption. How might this make it difficult to provide services such as water and public transport?

3B

Where are the world's most and least liveable cities?

- 1 What do you think is meant by the word liveability?
- 2 Many European, North American and Australian cities tend to be rated highly in terms of liveability, whereas many Asian and African cities tend to be rated poorly. Why do you think this is the case?



chapter

3

Source 1 A young boy living in a slum in the Bangladeshi capital, Dhaka, uses a toilet perched over a river that is also used for drinking and bathing.

3.1 Why we live where we do

The **liveability** of any place is closely linked to how suitable and enjoyable you think that place is to live in. How liveable you find a place to be depends on your own wants and needs and whether they are met. What we like about places can depend on our age, income, cultural background, lifestyle, values and beliefs. The following questions will help you to determine the features of places that make them most liveable to you.

What do you like to do?

Access to services and facilities that allow us to do the things we enjoy has an effect on what we think of the place we live. This, in turn, increases how highly we rate its liveability.

Sport and recreation play an important part in our lives. Team sports (such as netball, football and soccer) can be played in most places. Community facilities (such as sports stadiums and sporting parks) are provided in most communities. If your passion is surfing, you might consider a coastal town more liveable than an inland town. Horse riders might prefer to live in a rural area or on the edge of a city, close to open spaces where they can keep their horses.



Source 1 Some activities, such as netball, require lots of space.



Source 2 Busy streets in cities can make moving around difficult.

Where do you like to go?

The places we like to go to, and how easy they are to get to, also affect the liveability of a place.

Where do you spend most of your time? Do you like to catch up with friends, go to the movies, or shop at the local shopping centre? How do you get there? Do you walk, ride a bike, or catch a bus, tram or train? Think about how easy it is for you to travel from your home to where you like to go. Is it difficult? This could make you feel negatively about where you live, decreasing its liveability. Is there another place you could live that might make it easier for you to travel to where you like to go? If so, this would increase the liveability of that place for you.

What are your favourite places?

We all have places that are special to us. There are many different reasons for this. Some places appeal because of the way they look. This is known as the aesthetic appeal. Others appeal to us because they are familiar or are attached to memories of things we have done. This is known as sentimental appeal. We may even have a spiritual connection with a particular place. Aboriginal and Torres Strait

Islander peoples have developed very strong connections with their places. Places are a dominant feature of their stories and their lives. These spiritual connections can also increase the liveability of one place over another.

Every year about 5000 Australians are asked to take part in a survey about the factors that they believe make a place liveable. Their replies are often similar to the replies of people from all around the world when asked the same question.

Features of a liveable place

Most people agree that a liveable place:

- offers a temperate (mild) climate
- is easy to get around
- is able to offer good health care, work and education opportunities
- is safe
- is affordable
- is diverse
- is sustainable
- is attractive.

Source 3 An Aboriginal boy fishing in Manbalbirrilarri billabong at Djukalajarrang, Arnhem Land. This is a very special place for the Ganalbingu clan because of important rock art, burial caves and secret and sacred sites. The Ganalbingu clan feel spiritually connected to this place.

Check your learning 3.1

Remember and understand

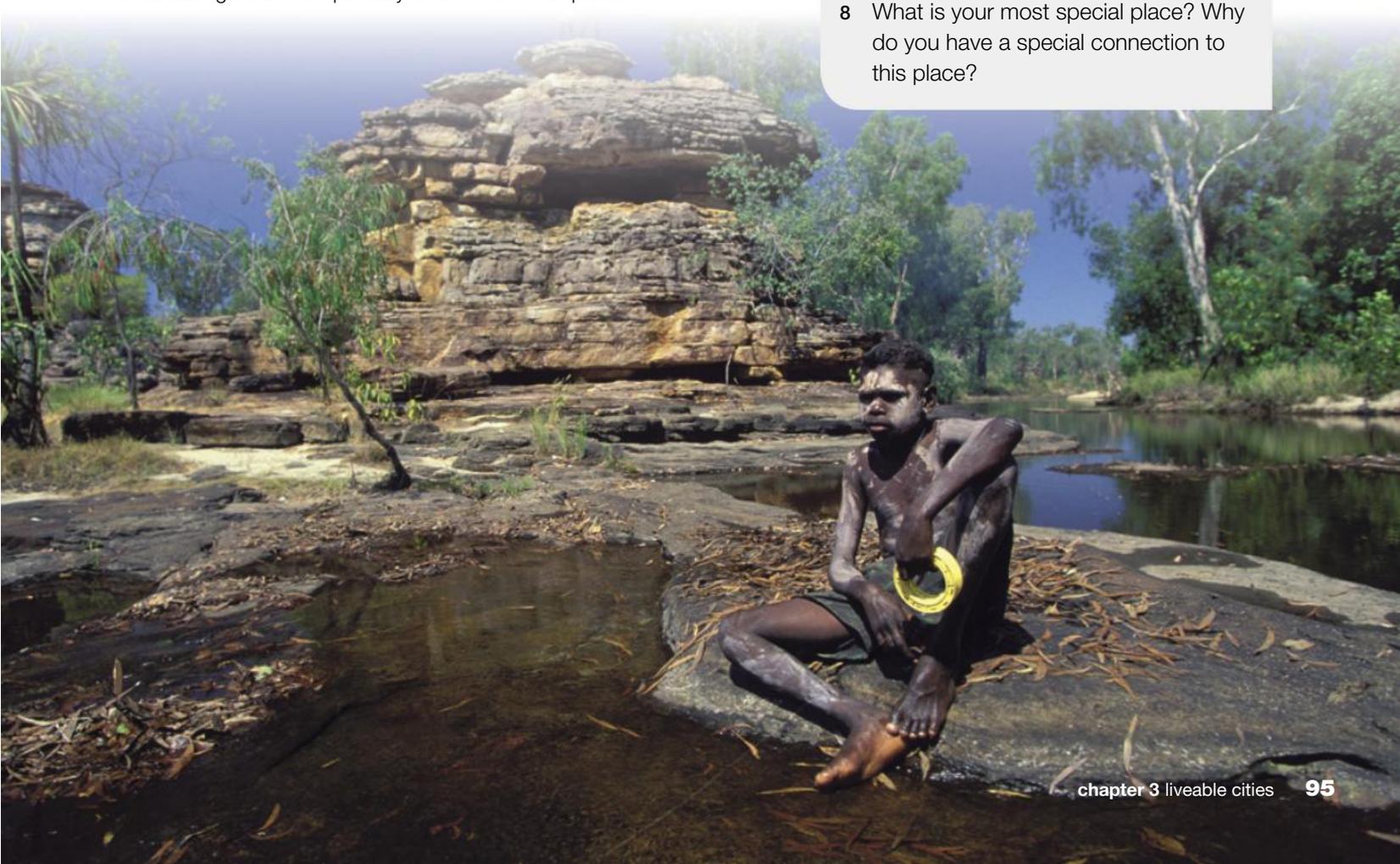
- 1 What is meant by the word liveability?
- 2 What characteristics of a place attract us?
- 3 What do you like to do? Where would be a good place to live to enable you to do this?
- 4 Where do you like to go? Where would be a good place to live to enable you to do this?

Apply and analyse

- 5 Imagine that you could live anywhere. Where would you live and why?
- 6 What are the important aspects of liveability that don't need a lot of money?
- 7 Give an example of how a person of your age and a much older person might have different ideas about the liveability of a place.

Evaluate and create

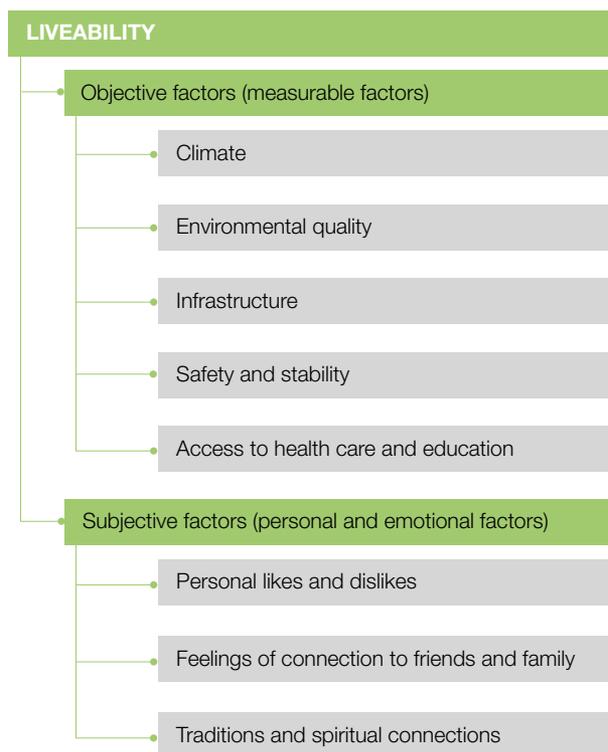
- 8 What is your most special place? Why do you have a special connection to this place?



3.2 Measuring liveability

The liveability of a place is generally measured by a number of different factors relating to quality of life. People's views about the liveability of a place can vary depending on their age, income, cultural background, lifestyle choices, values and beliefs.

The factors that influence people's ideas on liveability can be measured in two ways: by objective factors and subjective factors. Objective factors are things that can be measured and expressed as numbers, such as the cost of housing, the climate, the number of hospitals and schools, the availability of public transport, and the level of crime. Subjective factors are things that are personal, emotional and spiritual, and that cannot be easily measured or expressed as numbers. Examples of these factors are people's spiritual connections and sentimental attachments to a place (see Source 1).



Source 1 Liveability can be measured by objective and subjective factors.

Each year, a number of different companies review the liveability of cities around the world in terms of their objective factors, ranking them from the most to the least liveable. The most well-known of these surveys is conducted by an organisation called the Economist Intelligence Unit (EIU), which publishes an annual list of rankings. It ranks cities based on a set of criteria using objective factors. Other organisations, such as Mercer and the Organisation for Economic Cooperation and Development (OECD), also produce regular reports, with the OECD also incorporating more subjective factors into its surveys.

Objective factors

There are many different objective factors that affect liveability. The most important are introduced briefly below, then covered in more detail later in this section of the chapter.

Climate

Climate is one of the most important factors affecting the liveability of a place. Although different people like different types of weather, most people agree that a mild climate without extremes of heat or cold is ideal. Places with mild (temperate) climates often score highly in terms of liveability. The amount of rainfall is also key when it comes to climate. Too little or too much rain has a negative effect on the liveability of a place. For instance, Antarctica is a difficult place for humans to survive because it is so cold and there is not much fresh water available for drinking.

Environmental quality

The environment is another key factor that determines how liveable a place is. Environmental quality can refer to a number of characteristics relating to the natural or built environment, such as clean water and clean air. It can also be a measure of other things such as the level of pollution, rubbish or noise in an environment.

Infrastructure

The availability of services and facilities (such as roads, public transport, emergency services, post offices, water, sewage treatment plants, airports, housing, sporting and entertainment facilities, electricity and communications) helps make a place more or less liveable. Together these services and facilities are referred to as **infrastructure**.

Safety and stability

Safety and stability are two of the most important factors linked to the liveability of a place. More than most other things, people value feeling safe and stable in their homes. Australian cities are regarded as some of the most liveable places in the world for this reason. Safety and stability are measured by taking into account crime statistics and other information collected by the government. Many of the world's least liveable cities are found in war-torn countries such as Iraq and Afghanistan, where crime rates are very high and there are very few police to enforce the law. For this reason, many **refugees** flee to countries such as Australia in search of safety and stability.

Access to health care and education

In general, people living in the world's most liveable cities have access to good health care services, including doctors, public and private hospitals, specialist clinics and over-the-counter medication. They also have access to a range of schools and other education facilities, such as training centres and universities. In many of these cities, including those in Australia, a school education is not only compulsory but is also free. Cities in Canada, the USA, Australia and Western Europe generally rank highly in both



Source 2 A young schoolgirl looks through a hole in the damaged wall of her school in Gaza City following Israeli bombings in 2012. Feeling safe is a key factor that affects the liveability of places.

health care and education. African cities are the lowest ranked in the world in terms of these services.

Subjective factors

Unlike objective factors, subjective factors cannot be easily measured and compared. They are linked to personal likes and dislikes, and feelings of connection to family, friends and cultural groups. They are also linked to beliefs, traditions and spiritual connections to places. Organisations such as the OECD are now conducting life-satisfaction surveys in order to take some of these subjective factors into account when rating the liveability of different places. These surveys try to take into account how happy or sad people feel, and look for the factors in their lives and environments that cause these feelings. This information is then taken into account alongside more objective measures in order to give a more complete picture of liveability.

Check your learning 3.2

Remember and understand

- 1 How do companies measure the liveability of places around the world?
- 2 What are the objective measures of liveability for countries? Why are these important?
- 3 What are subjective measures of liveability and how are they measured?

Apply and analyse

- 4 Safety is a key liveability measure in all communities.
 - a What do you think are the most important safety issues for people living in large Australian cities?
 - b What do you think are the most important safety issues for people living in Gaza City (see Source 2).
 - c What safety issues are similar and which are different?

3.3 Climate

The **climate** of a place has an important impact on its liveability. Different climates suit different people, but it is generally agreed that mild temperatures without extremes of heat or cold help to make a place

more liveable. Reliable rainfall, low humidity and little likelihood of weather-related disasters, such as cyclones and floods, are also seen as being desirable. These factors increase the liveability of a place.

skilldrill

Comparing climate graphs

Climate graphs show the maximum and minimum temperatures as **line graphs** using the scale on the left-hand vertical axis, and rainfall as a **bar graph** using the scale on the right-hand vertical axis. The months are shown on the horizontal axis. By comparing climate graphs, geographers can better understand climate differences and the reasons for them.

Step 1 Compare climate graphs for two locations.

Step 2 Describe the climate of one of these locations. Include the following elements of climate:

- The rainfall pattern: Mention whether rainfall is consistent throughout the year or whether there are clear wet and dry seasons. In particular, mention the highest rainfall month and any periods with little or no rainfall.
- The temperature pattern: Mention periods of warmer and colder temperatures, if these occur. State whether there is a more even temperature throughout the year. Use temperature figures in your description of the pattern.

Step 3 Describe the climate of the other location that you have chosen using the same method.

Step 4 Point out the obvious differences in the climates of the two locations.

Step 5 Try to explain these differences. Some of the most likely explanations are given below:

- Places nearer to the Equator are warmer than places closer to the poles. They also tend to be wetter with rainfall occurring throughout the year.
- Places near or beside oceans have milder climates with fewer extremes than places in the centre of large land masses.
- Places at high altitude are colder than places at sea level. They are often wetter as well.

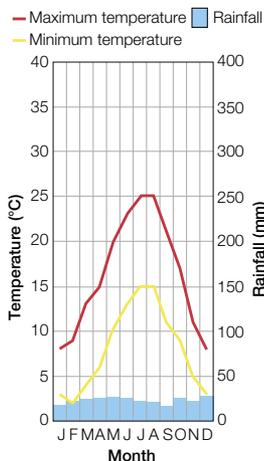
Step 6 Point out any similarities between the two locations.

Apply the skill

- 1 Using the steps outlined above, compare the climate of two cities shown in Source 1.

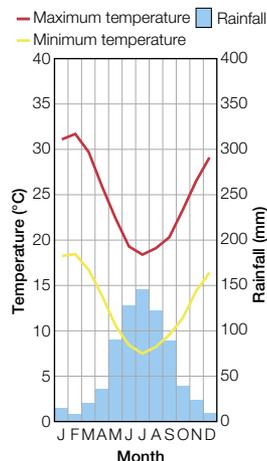
1 Acceptable humidity and temperature:

Paris



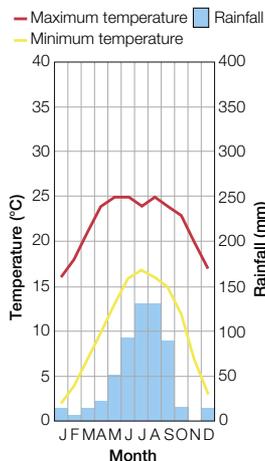
2 Tolerable humidity and temperature:

Perth



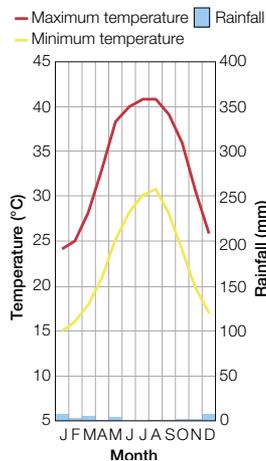
3 Uncomfortable humidity and temperature:

Kathmandu



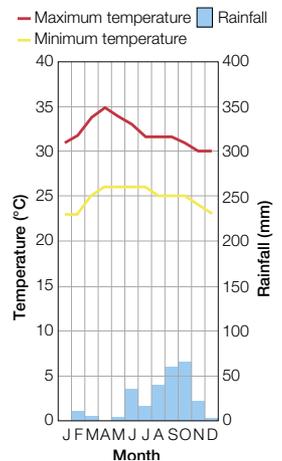
4 Undesirable humidity and temperature:

Dubai



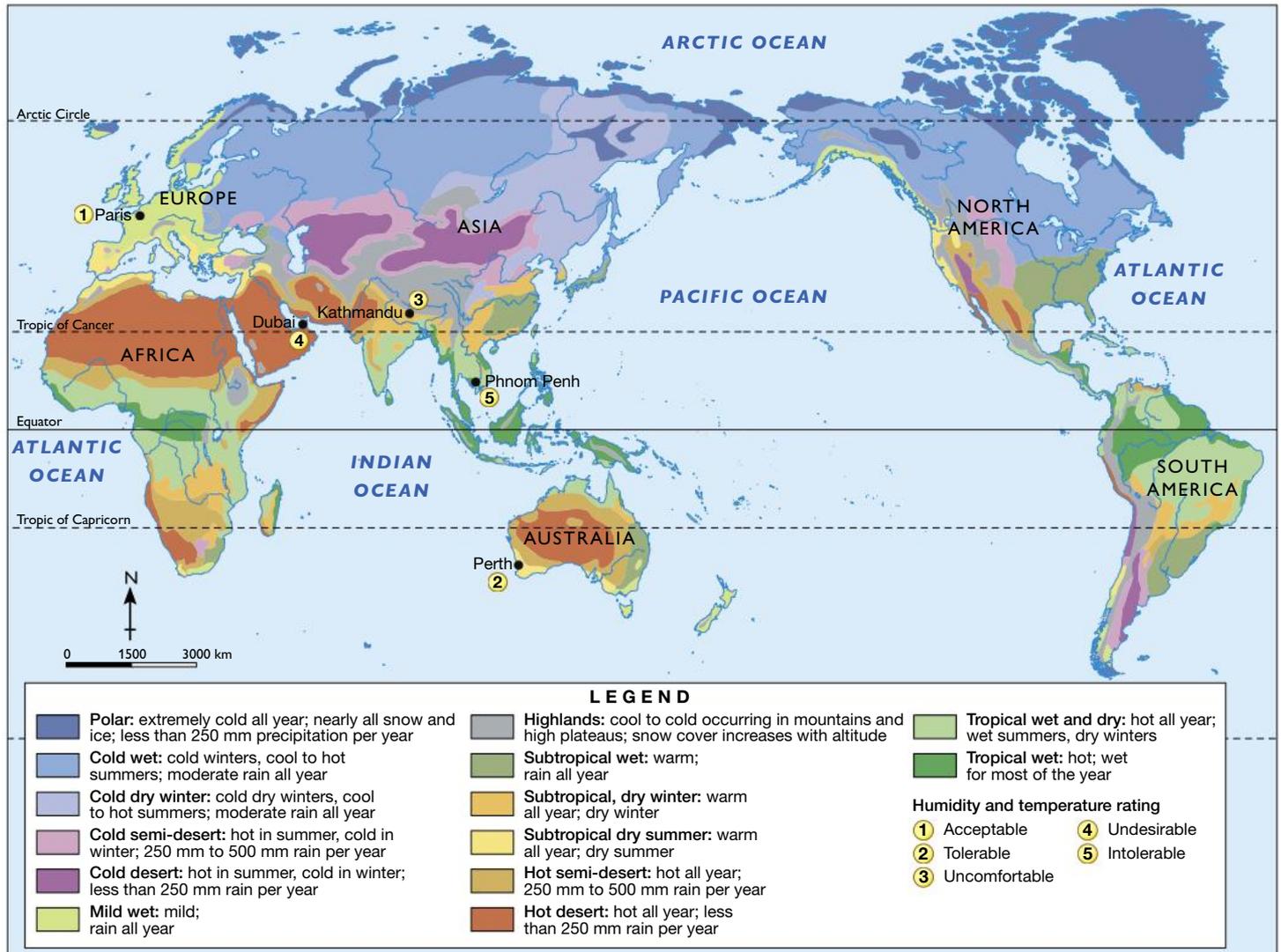
5 Intolerable humidity and temperature:

Phnom Penh



Source 1 Climate graphs for locations with different climates

WORLD: CLIMATE ZONES



Source 2

Source: Oxford University Press

Check your learning 3.3

Remember and understand

- 1 Name the city that is described as having acceptable temperature and humidity.
- 2 What is the connection between climate and liveability?

Apply and analyse

- 3 Why do you think Kathmandu's climate has been described as uncomfortable?
- 4 Which city has tolerable rather than acceptable weather?

- 5 Look carefully at Sources 1 and 2.

- a Which city has intolerable humidity and temperature?
- b What type of climate does this city experience?
- c What types of climate do cities with acceptable levels of humidity and temperature have?

Evaluate and create

- 6 How do people adapt to living in places with undesirable climates?
- 7 What features of the natural environment other than climate may affect a city's liveability?

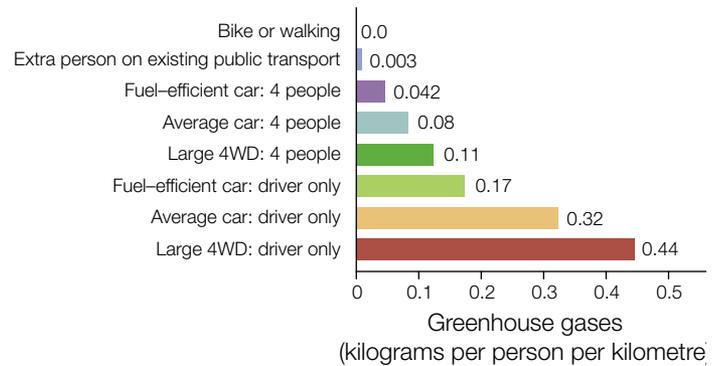
3.4 Environmental quality

The quality of air, water and parklands in cities is an important part of liveability for both health and aesthetic reasons. Air quality, in particular, can have a big impact on health.

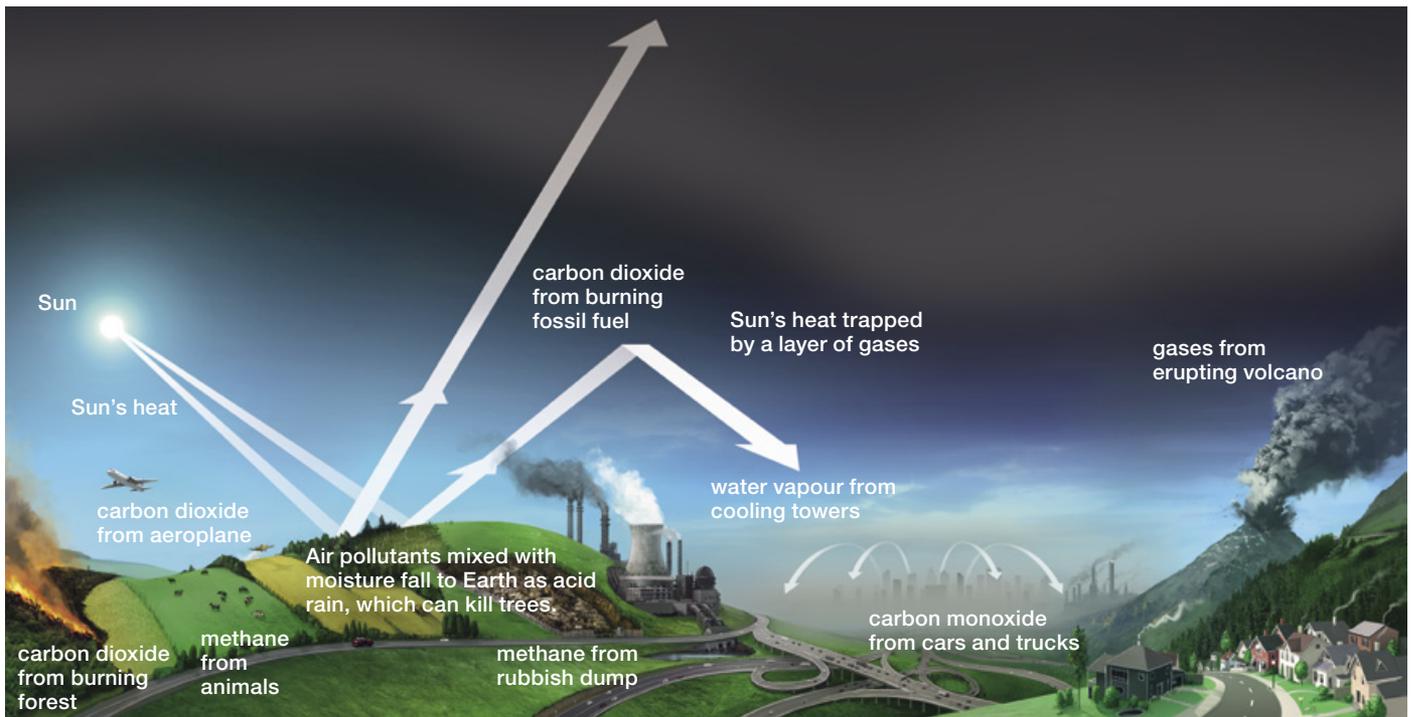
Air pollution tends to be worse in large cities where factories, power stations and motor vehicles spew harmful gases into the air. The polluted air can sometimes be trapped close to the Earth's surface as smog, or thrown high into the atmosphere where it may contribute to a layer of gases responsible for global warming.

Increasing numbers of people and cars on our roads mean we need to take action to improve the quality of the air we breathe. Air quality in Australian cities is good by world standards, but can vary. In Sydney, Melbourne and Brisbane, the number of days per year where pollution exceeds the National Environment Protection Measures standard is generally less than 10. Some years it can be much higher, however, particularly when air quality is negatively affected by other events such as bushfires.

Australian governments have now introduced laws to deal with air and noise pollution, however urban air pollution still accounts for 2.3 per cent of all deaths in Australia. Motor vehicles are the main source of air pollution. Although unleaded petrol and hybrid cars that run partly on electricity are helping to reduce pollution from motor vehicles, these have been offset by the ever increasing numbers of cars on the road. Walking, riding a bike or using public transport remain the most environmentally friendly ways to get around.

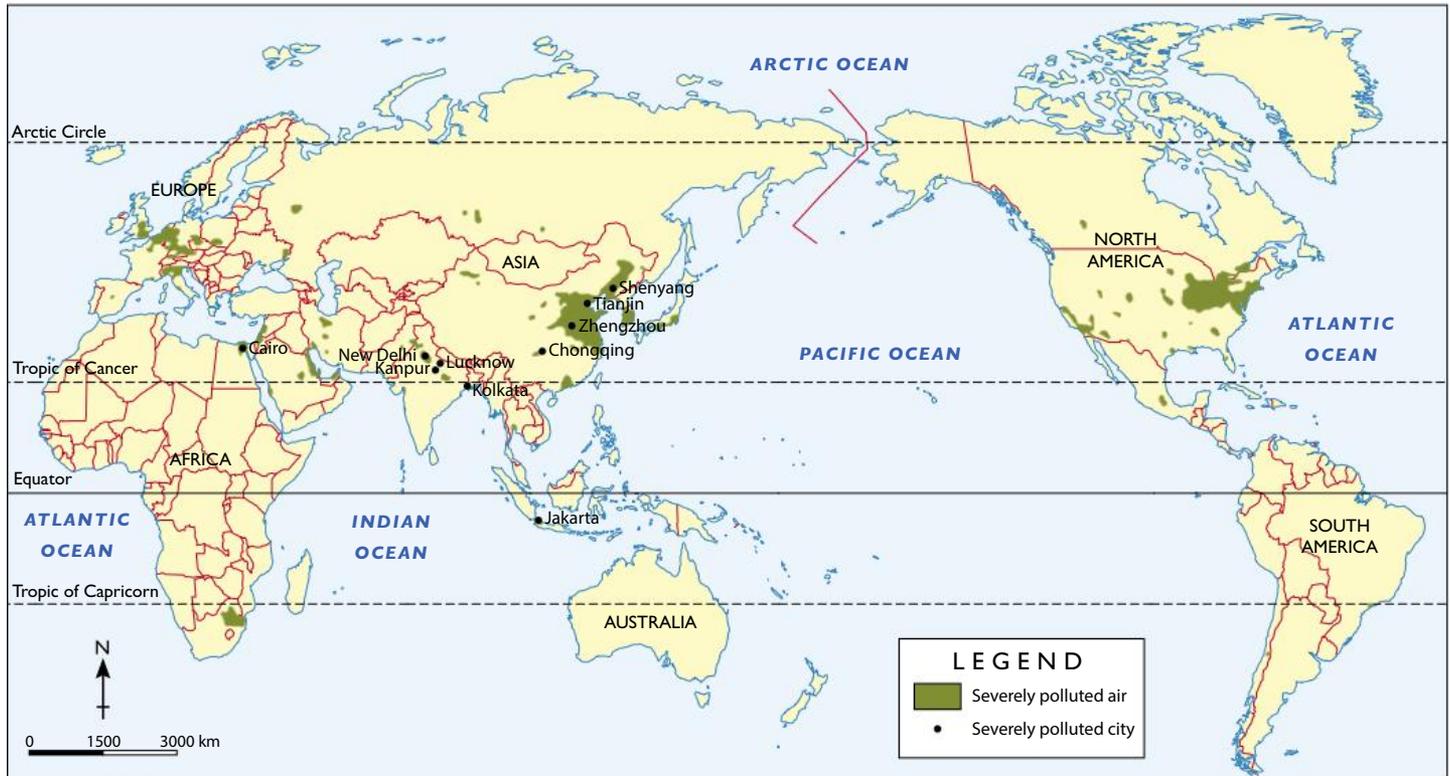


Source 2 Greenhouse gas emissions from different forms of transport



Source 1 Sources of air pollution

WORLD: MOST POLLUTED CITIES



Source 3

Source: Oxford University Press

Case study: Hong Kong

The city of Hong Kong in China is home to 7 million people. The liveability of Hong Kong is under threat from crippling pollution, three times the safe level set by the World Health Organization. Roadside pollution levels in Hong Kong are responsible for 90 000 hospital admissions and 2800 deaths each year.

In 2013, a strategy for decreasing pollution in Hong Kong was announced by electric vehicle maker BYD. The plan involves replacing Hong Kong's fleet of diesel buses and LPG taxis with fully electric vehicles that produce no exhaust fumes. Experts suggest that this strategy will reduce pollution from Hong Kong's vehicles by around 56 per cent. Replacing the 18 000 LPG taxis and 12 000 diesel buses with electric taxis and buses would lead to a reduction in emissions equivalent to more than 800 000 private cars. The plan will reduce costs, lower vehicle emissions and improve air quality.

Check your learning 3.4

Remember and understand

- Look carefully at Source 1.
 - List the causes of pollution in cities.
 - List the causes of pollution in rural areas.
 - Why do cities such as Sydney, Los Angeles and Mexico City suffer from smog?
- Look at Source 3.
 - On which continent are most of the top 10 polluted cities located?
 - Why do you think pollution is such an issue in these cities?

Apply and analyse

- Study Source 2.
 - What is the difference in the amount of greenhouse gases released per person between one person driving a 4WD and four people travelling together in a 4WD?
 - What could governments do to encourage more people to share their cars as a way of reducing air pollution?
 - List the ways in which car sharing could potentially improve the liveability of a city.

3.5 Infrastructure

Services and facilities (such as roads, public transport, emergency services, post offices, water, sewerage, airports, housing, electricity and communications) help make a place more or less liveable. Together these services and facilities are referred to as infrastructure.

The world's best infrastructure: Singapore

Singapore is considered to have some of the best infrastructure in the world. Singapore has been recognised for its excellent roads, and for producing one of the world's busiest and most efficient ports. A first-class airport acts as a central Asian hub for tens of millions of travellers every year. Most Singaporeans live in high-rise apartment blocks in a form of public housing available to the majority of the population. These buildings are clean, modern and well serviced.

With its reliable electricity supply, Singapore has developed as a centre for advancement in technology and now boasts one of the best communication networks, with fast mobile and wireless Internet and communication services available everywhere.

Singapore also has a ready supply of fresh drinking water, a good sewerage system and, thanks to the Restroom Association of Singapore, the cleanest public toilets. Singapore can be particularly proud of its public transport with buses, taxis and two train networks covering the whole country. The use of public transport is encouraged – over 50 per cent of workers in Singapore travel to work on public transport.



Source 1 Singapore's public transport system is considered one of the best in the world. It is clean, safe and efficient.



Source 2 The road network in Singapore allows commuters to move around the city easily.

The world's worst infrastructure: Dhaka

The capital of Bangladesh, Dhaka, is considered to have some of the worst infrastructure in the world. It rates poorly in the quality of its telecommunications, water and housing, but even worse in terms of transport. Both its road network and public transport are considered to be intolerable. This is due to a number of factors. Dhaka is a city of 16 million people and is growing at a rate of 4.2 per cent a year. This adds about 670 000 people to the city a year. By world standards, this represents rapid growth. Unlike other cities in Asia, the reason for Dhaka's growth is increased poverty not increased prosperity. Poor rural migrants flood into the city, placing the existing infrastructure under great strain. For many of the rural poor who move to Dhaka, pulling a rickshaw is their first job (see Source 4).

Only about one-quarter of Dhaka's population is connected to the sewerage system. The rest use open toilets in the street or slums where they live. Only two-thirds are connected to a reliable water supply. Dhaka has the highest **population density** of any of the world's **megacities** with about 20 000 people, on average, crammed into every square kilometre of land. This leaves little room for roads, rail lines, car parks, bus terminals and other elements of an effective transport system. There are very few forms of public transport and these are largely inefficient and poorly organised. People moving around Dhaka rely on a limited bus service and bicycle rickshaws. There is no train service within Dhaka, only trains between Dhaka and other centres in Bangladesh (see Source 3).



Source 3 The rail system in Bangladesh is run-down and chaotic.



Source 4 More than 80 per cent of households in Dhaka do not own a car or motorbike and instead rely on rickshaws for moving around the city.

Check your learning 3.5

Remember and understand

- 1 What is meant by the word infrastructure?
- 2 How does an efficient and reliable infrastructure add to a city's liveability?

Apply and analyse

- 3 Compare the photographs of the road systems in Singapore and Dhaka (Source 2 and 4). What are some of the differences and some of the similarities?
- 4 What are some of the factors that have resulted in such poor infrastructure in Dhaka?
- 5 Why do you think the infrastructure in Singapore is so reliable?
- 6 Make a list of all the forms of infrastructure mentioned in this spread. Rank these forms of infrastructure from the one you consider to be the most important to the one you consider to be the least important.
- 7 Compare the infrastructure of the city or town closest to you with the infrastructure in Singapore. What are the differences and similarities?
- 8 Is it possible to live in a city and not rely on or use any of its infrastructure?

3.6 Safety and stability

People all around the world want to feel safe. Even though it is tempting to believe everything that is presented in the media, if you did, you could think that Australian cities are in the grip of a crime wave and have become unsafe. While it is true that many crimes are committed in Australia, by world standards it is considered one of the safest places to live. Crime statistics even show that rates of some crimes, such as thefts, have actually declined in recent years. Compared to the crime statistics and violence in other countries, it is no wonder so many people would like to live in Australia.



Source 1 Tokyo – the capital of Japan, and the world’s safest city in 2015.

DRUGS SEIZED BY POLICE

A VARIETY of chemicals used in the production of the drug methamphetamine were seized from an Emerald residence early yesterday morning. The search also located a rifle in the manhole of the Yamala St property.

BOMB FEAR DRAMA IN SEBASTOPOL

THE Victoria Police bomb squad defused a suspected explosive device at a home in Sebastopol on Saturday night during an incident which lasted more than five hours.

GOONDIWINDI CRIME JUMPS 10 PER CENT

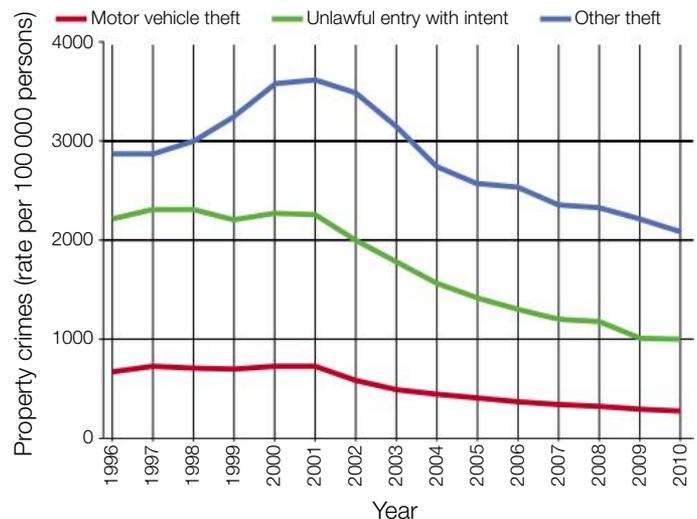
ASSAULTS in Goondiwindi have jumped more than 30 per cent in 12 months.

Source 2 Local news headlines in Australia can sometimes give the impression that Australia is a dangerous place.

The world’s safest and most dangerous cities

In the 2015 liveability survey carried out by the Economist Intelligence Unit (EIU), 140 world cities were compared. Each city received a ranking for a range of different factors like infrastructure, health care, safety and stability. The world’s safest and most stable city was found to be Tokyo in Japan. The world’s most dangerous and unstable city was found to be Damascus in Syria.

Unlike Tokyo – which has a low crime rate, high rates of health and excellent infrastructure – Damascus has been at the centre of a violent civil war in Syria since 2011. As a result of the war, Damascus has very little infrastructure left.

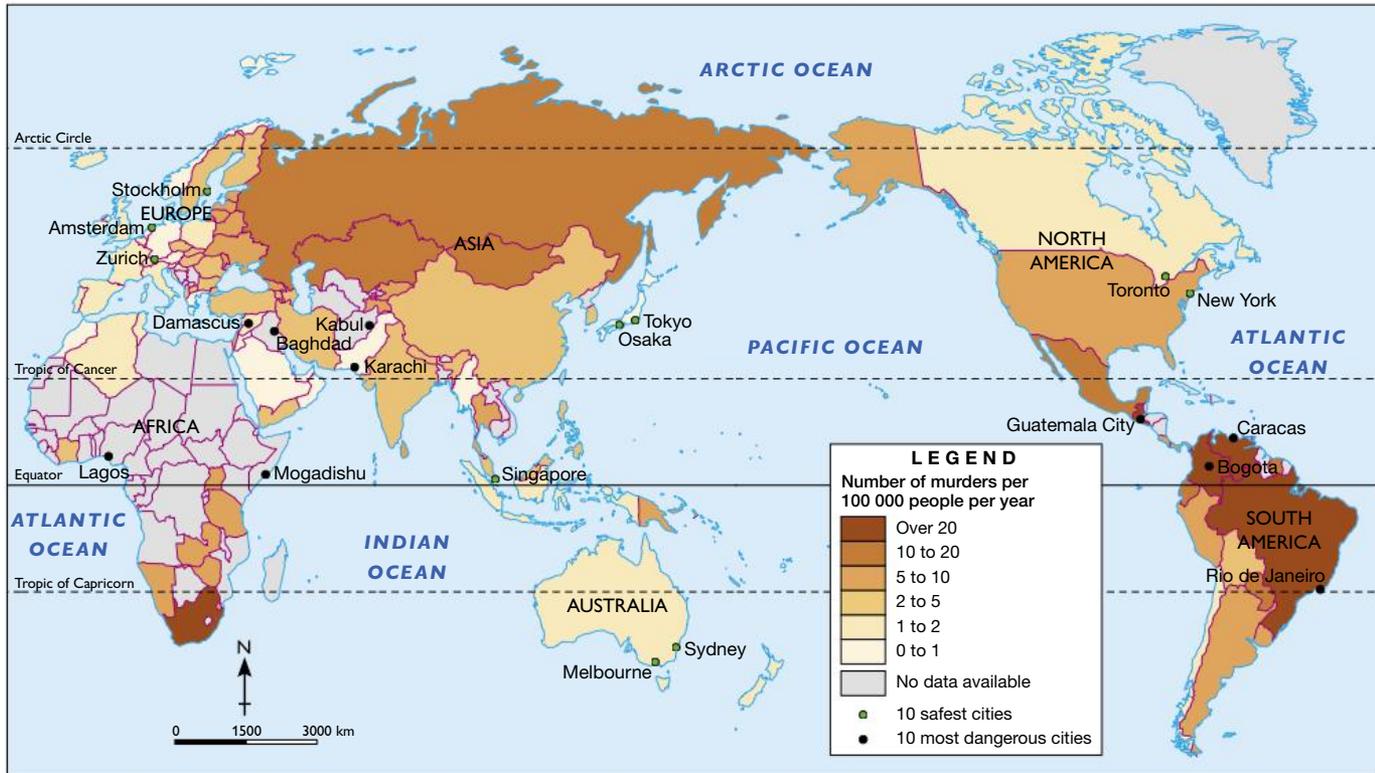


Source 3 Property crimes in Australia, 1996–2010



Source 4 Damascus – the world’s most dangerous city

WORLD: SAFEST AND MOST DANGEROUS CITIES (INCLUDING MURDER RATES)



Source 5

Source: The Safe Cities Index; Economist Intelligence Unit, 2015

Many hospitals, schools and shops have been bombed and many innocent people have been killed in the fighting. It is estimated that 11 million people have been killed or forced to leave Syria as refugees to escape the fighting.

As shown in Source 5, many of the most dangerous cities are located in war-torn countries, such as Syria, Afghanistan and Somalia. In the capital cities of these countries – Damascus, Kabul and Mogadishu – the level of personal safety is classified as intolerable.

Check your learning 3.6

Remember and understand

- 1 Why are safety and stability important factors in determining a city's liveability?
- 2 Rank the following factors in order of what makes a place most liveable for you: safe, easy to get around, good health care, good work and education opportunities, affordable, diverse, sustainable, attractive.
- 3 In which regions of the world are the safest cities?
- 4 In which regions are the world's least safe cities?
- 5 What makes some cities safer than others?

Apply and analyse

- 6 Collect reports of crime from your local newspaper. What impression do these reports give of safety in your community?
- 7 Visit the website of the Crime Statistics Agency (link available via your obook). Enter your postcode to learn more about the different crimes reported in your area.
 - a Are the rates of the following increasing or decreasing in your area?
 - robbery
 - property damage
 - assault
 - drug dealing and trafficking
 - b Do you think the media reports of crime rates you collected in Question 6 match the statistics? If not, why do you think they might differ?

3.7 Access to health care and education

People who live in the world's most liveable cities often have access to good health care services, including doctors, public and private hospitals, specialist clinics and over-the-counter drugs. They also have access to a range of schools and other education facilities, such as training centres and universities. In many liveable cities, including those in Australia, school education is not only compulsory, it is free.

Often cities in Canada, the USA, Australia and Western Europe rank highly for health care and education, while African cities are the lowest ranked in the world for these services.

The situation in the developing world

When examining access to health and education in developing countries it is easy to think that nothing can be done to improve the situation. Yet there have been some significant improvements in recent years.

The number of mothers who die while giving birth each year, for example, has almost halved since 1990. The main reasons are thought to be: improved care in hospitals and birth clinics; better education of girls and women; and better access to health care professionals, such as maternal nurses and doctors. Though the current rate still means that 800 women a day die while giving birth, the improvements in the last two decades give hope that this rate will decline even further.

Worldwide, 89 per cent of all primary school-aged children now attend school. Although 67 million children worldwide are not at school, this is a vast improvement on 1999 when the number of children not enrolled in primary school was 106 million. The countries that have made the greatest improvements in this area are the poorest countries of sub-Saharan Africa. In many of these countries, such as Rwanda and Mali, it is believed that abolishing school fees has been the main factor behind this improvement.

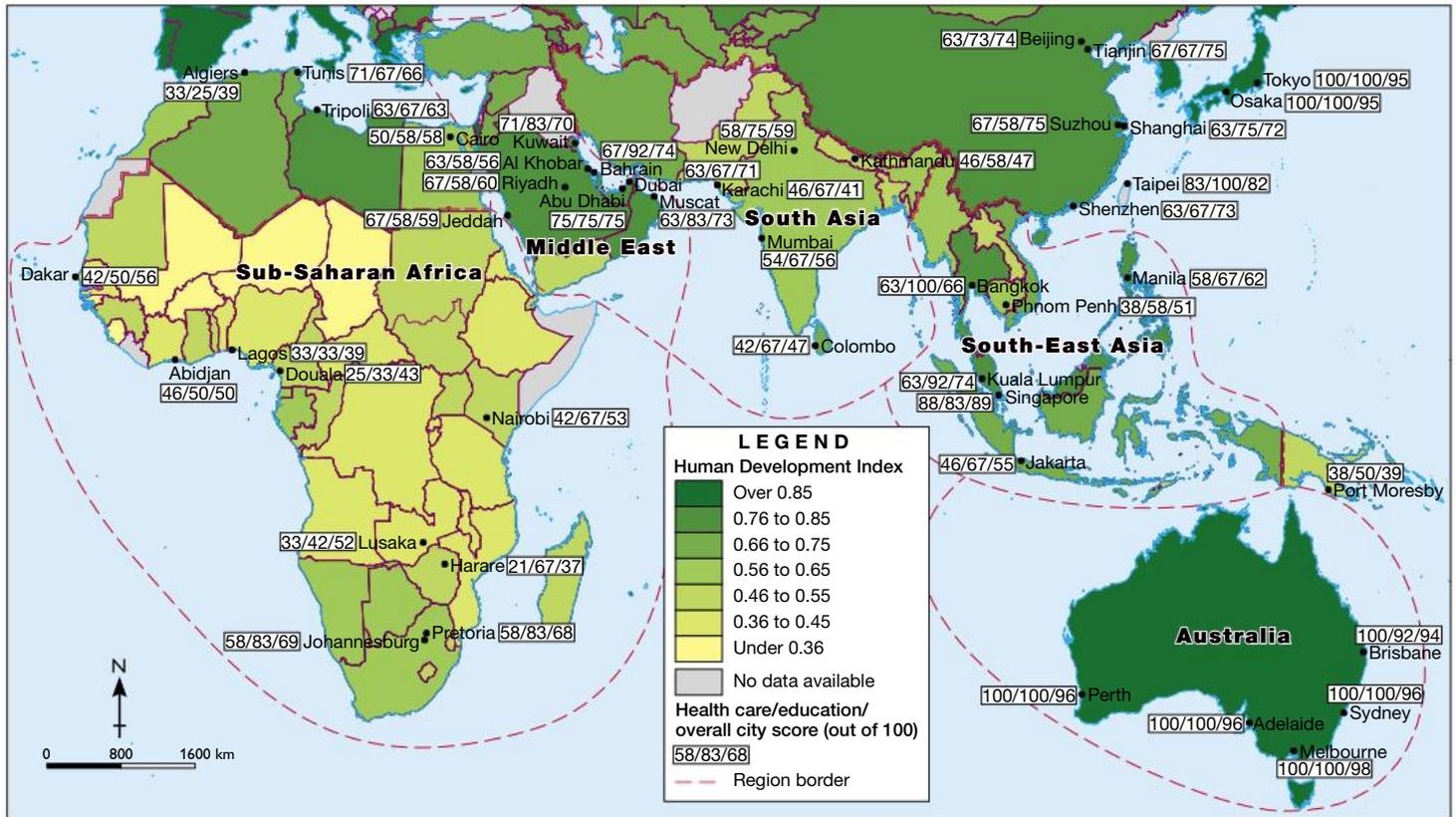


Source 1 A modern operating theatre at a hospital



Source 2 These children in Brazzaville, Democratic Republic of Congo, are enjoying the benefits of a free education.

AFRICA, SOUTH AND SOUTH-EAST ASIA AND AUSTRALIA: HUMAN DEVELOPMENT INDEX



Source 3

Source: Oxford University Press



Check your learning 3.7

Remember and understand

- 1 What improvements have been made in health care and education in developing countries?
- 2 What changes have led to these improvements?

Apply and analyse

- 3 Why do you think educating girls is a key part of lowering the maternal death rate?
- 4 Examine Source 3. The map shows health care and education scores in selected cities in Africa, Asia and Australia. The map also shows each country shaded according to the **Human Development Index (HDI)**. This uses measures of life expectancy, literacy and **gross domestic product (GDP)** to show the living standards in each country.
 - a In which region is HDI the lowest?
 - b How do cities in this region score for health care and education?
 - c In which region is HDI the highest?
 - d How do cities in this region score for health care and education?
 - e Write a short paragraph describing the connection between living standards (as shown in the HDI), health care and education in the cities of the regions shown on the map.

3A rich task

Mawson Station

Australia maintains three scientific research stations in Antarctica. The oldest of these stations is Mawson Station. It is located on Horseshoe Bay in one of the few places in Antarctica that stays relatively free from ice. The small community of scientists at Mawson Station face many challenges in one of the least liveable locations on Earth.

Because of its isolation from other places, it can be challenging to provide a liveable environment at Mawson Station. Electricity comes from a diesel generator and two wind turbines. Much of the electricity generated is used to provide heating, mainly to melt ice for water and to heat the water and buildings. Sewage is treated on site and scientists who are away from the station return carrying all solid human waste with them to the station, where it is incinerated.

Vegetables are grown in a special heated **hydroponics** room in which they can grow without soil. The station has a small operating theatre and a dentist's suite to treat most medical conditions. There is a range

of ways for people in the Mawson Station community to communicate with friends, family and colleagues in other places. Orbiting satellites provide a reliable Internet connection as well as radio and telephone connections to the ANARESAT dome.

The community lives in the Domestic Building (also known as the 'Red Shed'). When blizzard days stop fieldwork, the Red Shed provides many opportunities for expeditioners to pass the time. It has indoor climbing, a home theatre, a photographic darkroom, a library and several communal sitting areas. There is a small gym, as well as sports equipment for volleyball and badminton and a range of cross-country ski equipment. A spa and sauna are also available.

skilldrill

Analysing a map

Understanding the information provided by maps is a key skill for every geographer. Here are some basic steps to follow each time you begin to analyse a new map:

- Step 1** Read the title carefully as this will tell you exactly what the map is showing.
- Step 2** Look carefully at the legend and map labels to identify individual features on the map.
- Step 3** Use the orientation arrow to work out in which direction the map is facing. Once you have established where north is, you will be able to work out the remaining cardinal points.



Source 1 Oblique aerial view of Mawson Station, Antarctica

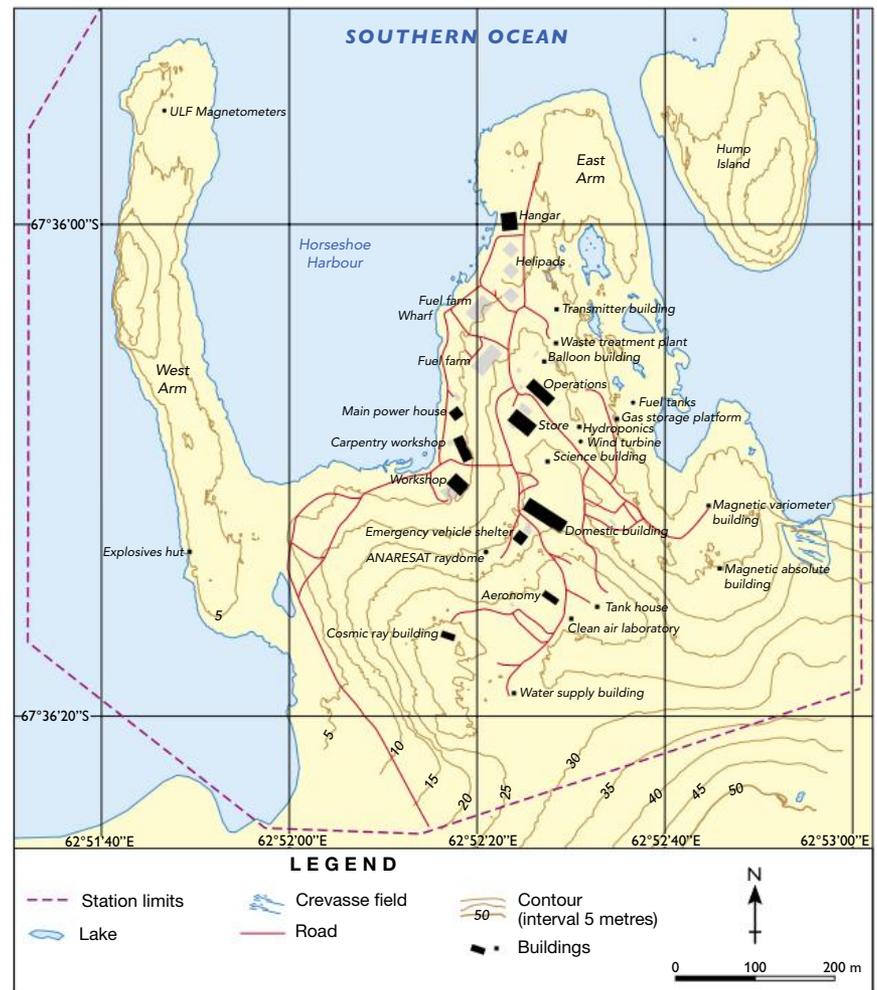
Step 4 Look carefully at the map scale. This will help you estimate how far distances shown on the map are on the ground. You can then use this scale to estimate distances between places on the map.

Step 5 If the map you are using shows a small area (i.e. a large-scale map), it may be helpful to look at another map showing a larger area (i.e. a small-scale map). This will help you locate the area shown. For more information about map scales, refer to page 11 of 'The geography toolkit'.

Apply the skill

- Examine the map of Mawson Station in Source 2.
 - Which buildings are clustered together? Why do you think they are clustered in this way?
 - Two buildings are located away from other buildings. For each of these, estimate the distance to the nearest other building and explain why you think it is located where it is:
 - explosives hut
 - hangar (used to store aircraft).
 - What are the two main types of transport used to bring supplies to the station?
- Examine the oblique aerial image of the station. Do you think this photograph was taken in summer or winter? Give two reasons for your answer.
- Compare the map with the photograph (Source 1).
 - In which direction was the photographer facing when this image was taken?
 - What is the round building on the right of the photograph?
 - What colour is each of these buildings: domestic building, store and operations? Why do you think the buildings are different colours?
 - What do you think is stored in the tanks with the word 'Mawson' written on them? Why do you think they are located next to the wharf?

MAWSON STATION



Source 2

Source: Oxford University Press

Extend your understanding

- Use the Internet to gather information about the climate at Mawson Station. Select the best description of the climate at Mawson Station when referring to its liveability: acceptable, tolerable, uncomfortable, undesirable, intolerable. Justify your response.
- Mawson Station is essentially a scientific community. Why do you think plumbers, electricians, builders and diesel mechanics are also needed?
- Rank the following factors in order of what makes Mawson Station most liveable: safety, easy to get around, good health care, good work and education opportunities, affordability, diversity, sustainability, attractiveness.
- What are some challenges faced by people who live at Mawson Station? How do they overcome these challenges?
- How liveable would Mawson Station be for you? What would be the advantages and disadvantages of living in this place? Discuss your answer with a classmate.

3.8 The world's most liveable cities

It is difficult to compare one city to another as people who live in one city tend to favour their own city. This can make it difficult for others who are considering moving to a new location to find out what it is really like to live there. In response to this problem, a number of companies research the world's biggest cities and rank them from the most liveable to the least liveable. These companies vary in what they study and measure, and so their liveability rankings differ. For example, one company may emphasise personal safety in its study, while another may put a greater emphasis on the climate of a place. This means their scores and rankings will differ.

These liveability rankings are useful for geographers as they give us the opportunity to compare places and to consider what makes one place more liveable than another. Importantly, they also allow us to make better decisions about improving the liveability of cities around the world. The following map uses the scores from the annual survey by the Economist Intelligence Unit (EIU) of 140 of the world's cities. In its survey the EIU gives each city a score based on its: stability (such as crime and terrorism threats); health care; culture and environment (such as climate, shopping and religious freedom); education; and infrastructure (such as roads, public transport and water).

WORLD: LIVEABILITY RATING, 2015



Source 1

Source: Oxford University Press

Case study: Vancouver, Canada

The Canadian city of Vancouver is usually near the top of any list of the world's most liveable cities. In fact, in 2015 it was ranked third-most liveable city in the world, after Melbourne and Vienna. In the 2015 survey it was the only city in the top 10 to receive a perfect score in the culture and environment category. The culture and environment category included climate, levels of corruption and censorship, religious freedom, sporting and cultural facilities, and shopping. The city also received a perfect score for its health care and education.

Because cities are given new scores every year, their rankings in liveability surveys can change, often without any perceivable change to living conditions in that city. Vancouver, for example, has slipped from the most liveable city to the third-most liveable. This is largely because its infrastructure score fell as a result of increased traffic congestion in the city. On the other hand, Perth is now ranked in the top 10 most liveable cities in the world.



Source 2 Residential housing and a marina in downtown Vancouver

Check your learning 3.8

Remember and understand

- 1 Why can it be difficult to compare the liveability in different cities?
- 2 Why is Vancouver considered to have become less liveable in recent years?

Apply and analyse

- 3 Examine Source 1 carefully.
 - a Compare the liveability of the cities shown in Africa with those shown in Western Europe.
 - b Describe three patterns that you observe on this map.
 - c Select one of these patterns and give an explanation for it.

- 4 Of the top 10 most liveable cities virtually all had perfect scores in education and health care but only one, Vancouver, had a perfect 'culture and environment' score. Why do you think only a few cities would score perfectly for their culture and environment?

Evaluate and create

- 5 Some people are critical of comparing cities in this way and believe that it is unfair to the people who live there. Why do you think people would feel this way?
- 6 As well as companies looking to move employees to a new city and geographers, who else would find liveability rankings of the world's cities useful?

3.9 Vienna: a liveable city

Vienna, the capital of Austria, usually scores highly in any survey of the world's most liveable cities. In 2015, it was rated by the Economist Intelligence Unit as the second-most liveable city, and by another organisation as the city with the highest quality of living in the world. It has topped this second list for three years in a row.

Infrastructure and safety

Vienna has excellent infrastructure, which has been designed to meet the changing needs of the city while ensuring sustainability. Vienna scores strongly in terms of its public transport and public housing. The city provides affordable public transport and has invested in an extensive bicycle network to keep traffic congestion in the streets low. Vienna has a large public housing system that provides high-quality housing for the majority of the Viennese population. This has kept housing affordable for everyone.

One of the features of Vienna that makes it liveable is the number of parks and other green spaces for people to enjoy. More than half the **metropolitan** area of Vienna is made up of these green spaces. This gives each resident of the city, on average, about 120 square metres of open space in which to socialise and exercise. (The World Health Organization suggests that at least 9 square metres of open space should be available to every city dweller.) Serious crime is rare and employment levels are high, creating a safe and stable environment for the city's residents.

Health care and education

Vienna has a wide range of hospitals offering different types of treatment and a high level of hospital care, and every worker in Vienna has health insurance. Education through the school system is provided to every child free of charge.

Source 1 Vienna is known for its shopping and safe public spaces.



keyconcept: Sustainability

Sustainability and liveability in Vienna

Vienna is leading the world in the reduction of the **greenhouse gases** that are changing the global climate. In 1999 the city began a program that encouraged companies to change the way they used energy and water and also the ways in which they disposed of their waste. The aim was to reduce gases by 2.6 million tonnes a year by 2010. The program was so successful that the target was achieved four years early and new targets have been set for 2010–20. More than 9000 individual projects have been put into place to reduce greenhouse gases since 1999. These have resulted in some impressive reductions: more than 100000 fewer tonnes of solid waste, 42000 fewer tonnes of greenhouse gases and more than 1 million fewer cubic metres of drinking water used. This has resulted in less water and air pollution in Vienna, making it even more liveable than before.

For more information on the key concept of sustainability, refer to page 9 of 'The geography toolkit'.



Source 2 In this Viennese building, solid waste is incinerated to produce heat and electricity, which is used to power a nearby hospital.



Source 3 Vienna has a well-developed public transport network that includes buses, trains and trams.



Source 4 An amusement park in Prater Park near the centre of Vienna

Check your learning 3.9

Remember and understand

- 1 What are some of the features of Vienna that make it very liveable?
- 2 How is Vienna becoming more liveable?

Apply and analyse

- 3 The exterior of the waste incinerator in Source 2 was designed by an artist.
 - a What does this tell you about the people of Vienna?
 - b What do you think of the exterior of this building?

- 4 In what ways do open spaces make cities more liveable?

- 5 How is open space used in your community?

Evaluate and create

- 6 Imagine that you are designing a brochure advertising Vienna as the city with the world's best quality of life.
 - a Which of the photographs of Vienna would you use in the brochure and why?
 - b Which ones would you not use? Why not?

3.10 The world's least liveable cities

While cities in Europe, Canada and Australia dominate the top ranks of the world's most liveable cities, Asian and African cities tend to dominate the bottom ranks. Remember, however, that most liveability surveys are paid for and conducted by companies in wealthy countries so they can provide their workers with a guide to life in cities around the world. The lists therefore tend to measure aspects that these companies think will be of most interest and relevance to their workers rather than the experiences of the people who live there.

In 2015, the Economist Intelligence Unit published its annual list of 140 cities ranked from most liveable to least liveable. Source 1 shows the 10 least liveable cities. These cities rate poorly in terms of health care, infrastructure and access to education. They also rate poorly in terms of safety and stability, which is a measure of crime, terror and conflict. Although many of these cities have been ranked low for many years, there was a new entry in 2013: the Syrian capital city of Damascus, now ranked the world's least liveable city due to a violent civil war in Syria.



Source 2 Housing area near the Port Moresby harbour

| Rank | Country | City | Overall rating (100 = ideal; 0 = intolerable) | Stability | Health care | Culture and environment | Education | Infrastructure |
|------|------------------|--------------|---|-----------|-------------|-------------------------|-----------|----------------|
| 131 | Cameroon | Douala | 44.0 | 60.0 | 25.0 | 48.4 | 33.3 | 42.9 |
| 132 | Ukraine | Kiev | 43.4 | 20.0 | 54.2 | 45.8 | 75.0 | 42.9 |
| 133 | Zimbabwe | Harare | 42.6 | 40.0 | 20.8 | 58.6 | 66.7 | 35.7 |
| 134 | Algeria | Algiers | 40.9 | 40.0 | 45.8 | 42.6 | 50.0 | 30.4 |
| 135 | Pakistan | Karachi | 40.9 | 20.0 | 45.8 | 38.7 | 66.7 | 51.8 |
| 136 | Libya | Tripoli | 40.0 | 30.0 | 41.7 | 38.2 | 50.0 | 48.2 |
| 137 | Nigeria | Lagos | 39.7 | 25.0 | 37.5 | 53.5 | 33.3 | 46.4 |
| 138 | Papua New Guinea | Port Moresby | 38.9 | 30.0 | 37.5 | 44.2 | 50.0 | 39.3 |
| 139 | Bangladesh | Dhaka | 38.7 | 50.0 | 29.2 | 43.3 | 41.7 | 26.8 |
| 140 | Syria | Damascus | 29.3 | 10.0 | 29.2 | 44.7 | 33.3 | 32.1 |

Source 1 Liveability scores for the 10 least liveable cities in 2015

Source: The Economist Intelligence Unit

Case study: Port Moresby, Papua New Guinea

Port Moresby, the capital of Papua New Guinea, is often ranked as one of the world's least liveable cities. This is largely due to high crime rates and a lack of safety experienced by many residents and visitors.

In many developing countries, such as Papua New Guinea, large numbers of people move from rural areas to the cities hoping for a better life. They are attracted by the possibility of a steady job or the chance for their children to attend high school. This puts a strain on the city's infrastructure and services such as hospitals, schools and the police force.

In Port Moresby, many of the young men who have arrived in the city have not been able to find jobs. They join crime gangs to survive, to earn money to buy food and to gain a sense of belonging. The most notorious of these gangs is the Raskols (from the English word rascals). Other gangs have names such as Mafia or Ook (Devils). These gangs are responsible for much of the violent crime in Port Moresby, such as robberies, carjackings, beatings, murders and rape.

Armed battles between the Raskols and the police are common, creating a dangerous environment. Many wealthier people in Port Moresby have responded to the dangers by building fences of razor wire and hiring armed security guards. The poorer people, having no access to these defences, have instead armed themselves with clubs and machetes.



Source 3 A Raskol gang member guards a stockpile of food and fuel.

Check your learning 3.10

Remember and understand

- 1 Why do people move to cities such as Port Moresby?
- 2 How can this movement affect a city's liveability?

Apply and analyse

- 3 Examine Source 1 showing the rankings and scores of the world's 10 least liveable cities.
 - a Why do cities move up or down this list over time?
 - b Which city is the least stable? Suggest a reason for this.
 - c Of these cities, Kiev has by far the best education score. In what area does it perform particularly poorly?
- 4 Refer back to Source 1 on page 110. Locate each of the 10 least liveable cities on this map. Investigate which of these 10 cities is not in Asia or Africa.

Evaluate and create

- 5 Draw a geographic sketch of Source 2. Add these labels to your sketch: central business district, poor housing standards, lack of sewerage, lack of electricity, houses built on stilts over the water, better quality housing.
- 6 What do Sources 2 and 3 tell you about inequalities in wealth in Port Moresby?

3.11 Harare: a least liveable city

Harare, the capital of Zimbabwe, was ranked at 133 out of 140 cities in terms of liveability in 2015. Harare is a city of great contrasts. Many people live prosperous, healthy lives there. They have good jobs, access to good health care and their children attend some of Africa's best schools. But this is not the reality for most Harare residents, many of whom live in extreme poverty.

Infrastructure and safety

Only 40 per cent of Harare residents have access to safe drinking water; most of the remaining 60 per cent collect their water from Lake Chivero, Harare's main water source. The lake is also the place where the city's untreated sewage is dumped as the treatment plant is unable to cope with the rapid expansion of the city's population.

Perhaps one of the greatest struggles facing many people in Harare is the struggle to find a secure home. In 2005, the country's president, Robert Mugabe, ordered the destruction of **slums** throughout the city.

He claimed it was to restore order in the city but many others believe that it was done to intimidate his political opponents. It is estimated that about 700 000 people were made homeless or lost their jobs. As well as homes, the slum clearance program destroyed schools, shops, workplaces and pharmacies. Many people are reluctant to rebuild their homes in case this happens again.

A recent report that measured the liveability of 140 of the world's cities described Harare's level of petty crime, its threat of **civil unrest** or conflict, its public health care and its quality of public transport as intolerable. It also rated very poorly in other important areas, such as the amount of violent crime, the threat of military conflict and the provision of electricity and water.

For most of Harare's 3 million residents, daily life is a series of struggles. They struggle to find enough clean water to drink and with which to wash and they struggle to find enough food. They struggle to find work to earn money and they struggle to give their children a quality education.

Source 1 These boys are collecting water from a puddle in a Harare street.



Health care and education

Harare ranked the lowest for health care of all the cities surveyed. Many struggle with disease and illness. Fourteen in every 100 adult Zimbabweans have **HIV/AIDS**, the fifth highest rate in the world. Poor **sanitation** and unsafe water supplies have led to outbreaks of cholera and typhoid in Harare, which have further strained the health services in the city and affected the ability of people to work.

A lack of government funding has made it difficult for hospitals and doctors to provide care for sick patients. The public health care system has collapsed and many common medical services are no longer available – patients cannot get prescriptions or drugs, hospitals have run out of medical supplies, and equipment has become unusable. The hospitals have had to stop performing operations and the wards are empty because the hospitals are unable to care for patients or even provide them with meals.

The only health care still available is in private clinics which only the rich can afford. Poor patients are left without care and are dying as a result.



Source 2 Untreated sewage flows into a Harare street from an overflowing pipe.



Source 3 This cholera victim is being taken to a clinic in Harare.

Check your learning 3.11

Remember and understand

- 1 Why is Harare considered to be one of the least liveable cities?
- 2 Explain the link between Source 2 and Source 3.

Apply and analyse

- 3 The boys in Source 1 are collecting water from the street. Discuss with a partner some problems that these boys may face every day and use your discussion to describe a day in their lives.

Evaluate and create

- 4 Make a list of the problems faced by many Harare residents. Rank them from the one that is the easiest to solve to the one that is hardest. Write a few sentences explaining why you have ranked them in this way.
- 5 For the problem you considered the easiest to solve, describe a possible solution. Why do you think this problem has not been solved in Harare?

3.12 Australia's liveable cities

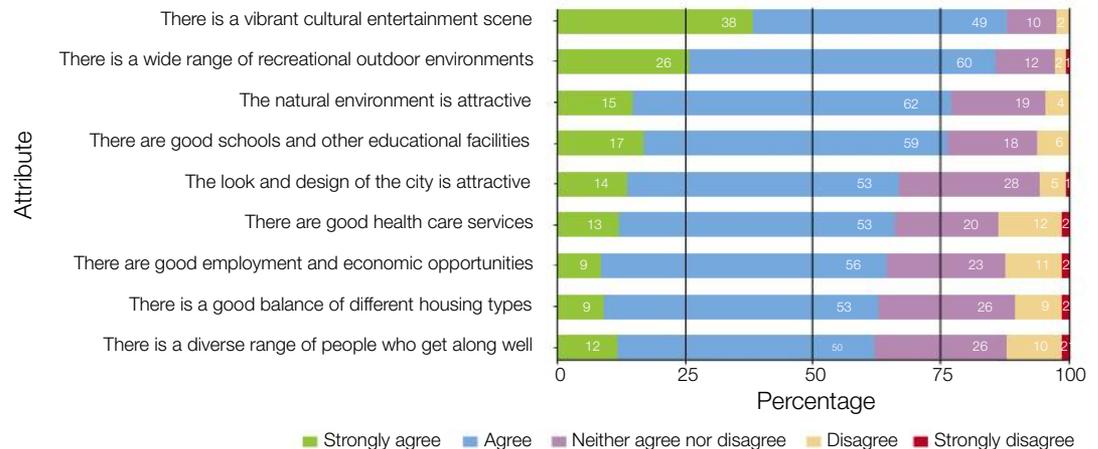
In the 2015 Global Liveability Survey, Melbourne was rated as the world's most liveable city. Adelaide (5), Sydney (7) and Perth (8) were also ranked in the top 10. Australian cities usually score well in liveability studies because they generally have open spaces for recreation, relatively low crime rates, low population densities and good education and health care. Large cities in a wealthy country, such as Australia, also have a wide range of goods and services available to the people who live there. The infrastructure in large Australian cities includes: schools and universities; efficient transport networks; clean water delivered to homes and businesses through a vast network of dams, treatment plants and pipes; and electricity supplied through a system of overhead and underground wires and cables.

How do Australians view their liveable cities?

In a different survey, Melbourne residents were asked about the liveability of their city. The results are shown in Source 2. While the city performed poorly in affordability, public transport and road network, it scored well among residents for culture, environment and education.

Source 1 The suburb of South Yarra near the Melbourne CBD is one of the most liveable suburbs in the world

Source 2 Results of a survey of Melburnians of the liveability of Melbourne, 2012: best performing attributes



Check your learning 3.12

Remember and understand

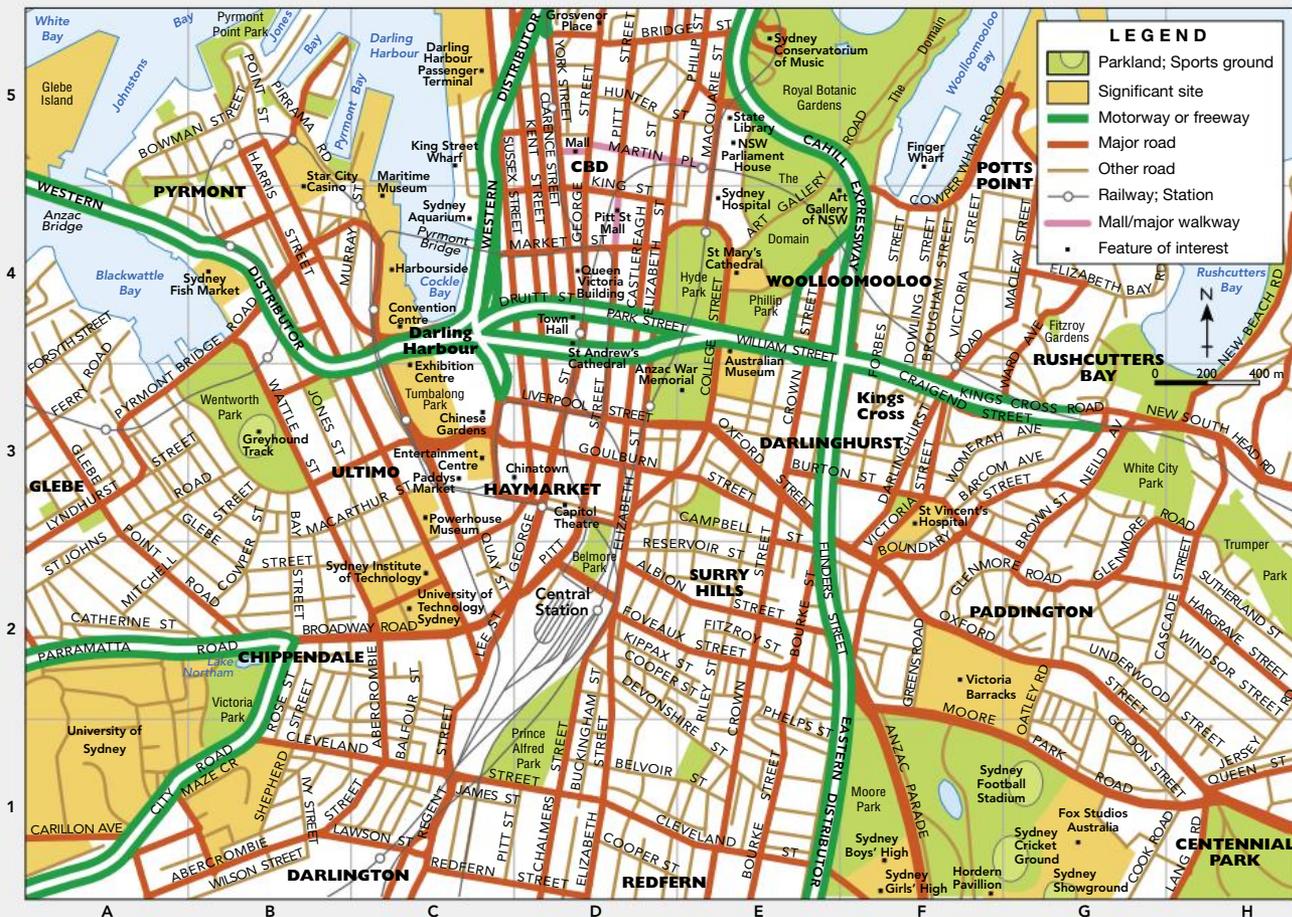
- 1 What Australian cities featured in the top 10 most liveable cities in 2015?
- 2 Why do Australian cities feature highly in these surveys?
- 3 What features of their city do Melburnians like the best? How do these features help to make the city more liveable?
- 4 What features of their city do Melburnians not like?

Apply and analyse

- 5 Look at the oblique aerial view of Melbourne (Source 1). What features shown in this photograph might suggest that Melbourne is a liveable city?
- 6 Examine the map of central Sydney (Source 3). Then copy and complete the following table. Try to add more than one example to each category.

| Liveability category | Examples from Sydney | Grid reference |
|---|-------------------------|----------------|
| Availability of public health care | St Vincent's Hospital | F3 |
| Recreation: sports | Sydney Football Stadium | |
| Recreation: culture | | E4 |
| Availability of consumer goods and services | Paddys Market | |
| Religious freedom | | E4 |
| Availability of schools | | |
| Availability of higher education | University of Sydney | |
| Quality of road network | | |
| Quality of public transport | | |

SYDNEY: CBD AND INNER SUBURBS



Source 3

Source: Oxford University Press

3.13 Liveable suburbs

In a 2015 study, each of Melbourne’s 321 suburbs was rated in terms of its liveability. The study used available data, much of it from the census, to score each suburb on 14 key indicators. These included factors such as the access to shops, schools, restaurants and public transport as well as crime rates, open space and traffic congestion. The study found the inner-city suburb of East Melbourne to be the most liveable suburb in the most liveable city in the world.

East Melbourne scored highly because of its closeness to the city centre as well as its good public transport and shopping. Unlike many other suburbs close to city centres, it also has a large amount of open spaces. Living in East Melbourne, however, has its drawbacks. The study found that residents of East Melbourne have to tolerate terrible traffic jams and poor telecommunications coverage.

The suburb of Skye, in Melbourne’s outskirts, was rated as the least liveable. A number of different factors contributed to this outcome. Skye rated poorly in terms of access to shops and open public spaces such as parks and playgrounds. Lack of good access to public transport and comparatively high crime rates were some of the other factors that resulted in a low rating. However, as Skye is a focus of state government funding to improve infrastructure (such as access to public transport), it may soon be rated higher.

MELBOURNE: KEY MAP SHOWING GEOGRAPHICAL FEATURES



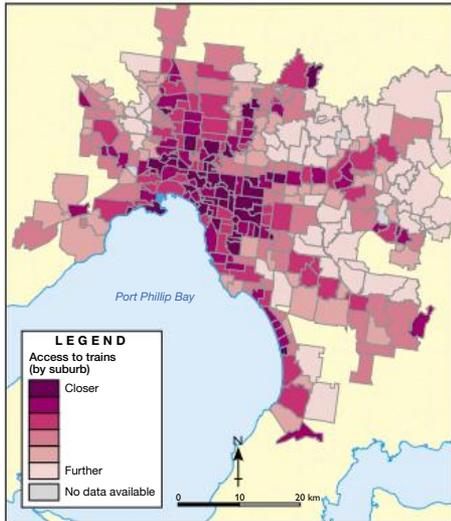
Source 2

Source: Oxford University Press



Source 1 Skye – Melbourne’s least liveable suburb.

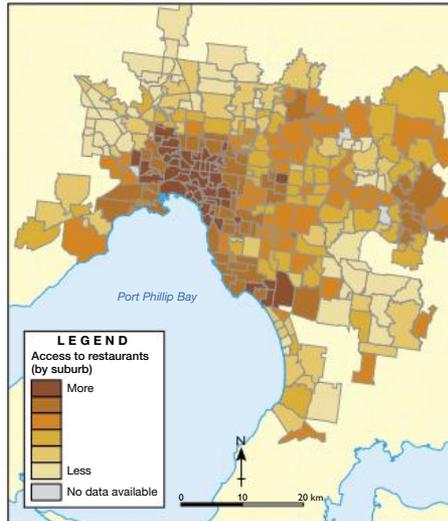
MELBOURNE: CHOROPLETH MAP SHOWING ACCESS TO TRAINS



Source 3

Source: Oxford University Press

MELBOURNE: CHOROPLETH MAP SHOWING ACCESS TO RESTAURANTS



Source 4

Source: Oxford University Press

Check your learning 3.13

Remember and understand

- 1 What pattern do you notice on the map showing access to trains (Source 3)? Describe this pattern using the names of specific places.
- 2 What feature on the key map (Source 2) helps to explain this pattern?

Apply and analyse

- 3 Examine Source 2.
 - a How has Port Phillip Bay affected the shape of Melbourne?
 - b What influence have major roads had on the shape of the outer suburbs?
- 4 These maps of Melbourne show that liveability is not the same for everyone in a city. Who would find these maps useful?

skilldrill

Explaining patterns on maps

Geographers look for patterns on maps such as Sources 3–5 and then try to explain the patterns they see. By following these steps you will move from describing features of a map to explaining them.

Step 1 Look for an obvious pattern in the map you are exploring. This may be a cluster of similar features in a small region or a line of features. In the map showing the liveability of Melbourne's suburbs (Source 5), lighter colours (less liveable) tend to be near the fringes of the city whereas darker colours (more liveable) are nearer the centre.

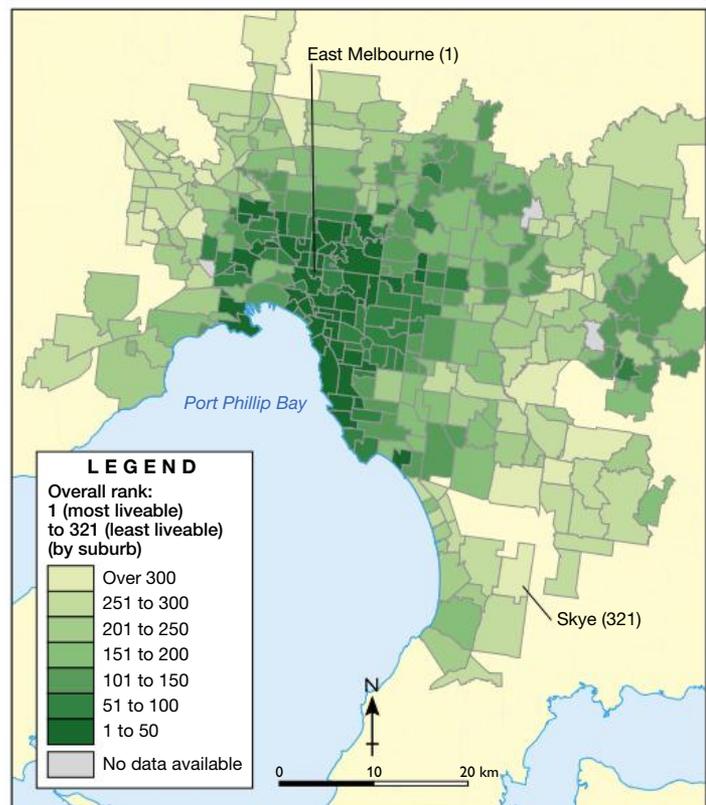
Step 2 Describe the pattern using names of specific places in your description.

Step 3 Look for clues that explain the pattern you have described. There may be clues in other maps or in the way the map has been drawn. In the case of the liveability map, the explanation for higher liveability in inner suburbs may be that there tend to be many restaurants, shops and train stations there. These factors were all taken into account in determining the liveability of each suburb.

Apply the skill

- 1 Explain the pattern in Source 4 showing access to restaurants in Melbourne's suburbs.

MELBOURNE: CHOROPLETH MAP SCORING EACH OF THE 321 SUBURBS ON ITS LIVEABILITY



Source 5

Source: Oxford University Press

3B rich task

The liveability of your local area

Liveability applies not only to countries and cities but also to smaller local areas. Some areas are more liveable than others because of the infrastructure that is available or because of their culture and environment.

skilldrill

Completing a map survey

There are several pieces of information that you can collect to assess the liveability of your local area. The first of these is a map survey.

To complete a map survey of your local area, follow these steps:

Step 1 Locate a map of your local area. This could be from a street directory or from a website, such as Google Maps. Decide on the limits of your local area. This could be a suburb if you live in a large city or the whole town if you live in a smaller rural town. In this example, the student lives in inner Perth and has chosen an area 1.5 kilometres from where she lives.

skilldrill

Completing a street survey

Another useful way to collect information about the liveability of your local area is to undertake a street survey as part of some fieldwork. In a street survey you are assessing the quality of the housing and other features of a street or several streets.

To complete a street survey in your local area, follow these steps:

Step 1 Choose a street with at least 30 properties and a length of at least 100 metres.

Step 2 Use a street survey form like the one shown in Source 1 to score your chosen street on a scale of 0 to 3 in a range of categories.

Apply the skill

- Using the steps outlined above, complete a street survey in your local area.
- In what parts of the survey did the street score well? In what areas did it score poorly?
- What could be done to improve this street?

| Street name: _____ Suburb: _____ | | SCALE | | | | |
|---|--|-------|---|---|---|--|
| | | 3 | 2 | 1 | 0 | |
| Traffic | Free of parked vehicles Low volume of traffic Safe for children | | | | | Cluttered with parked vehicles High volume of traffic Dangerous for children |
| Gardens | Variety of plants Neatly maintained | | | | | No plants Overgrown |
| Houses | Well maintained Variety of housing styles Variety of building styles | | | | | Run-down All houses the same style All houses built from the same material |
| Vegetation | Trees shade half of road | | | | | No trees |
| Street furniture (signs, electricity poles, seats etc.) | Inconspicuous Improve the area | | | | | Conspicuous Detract from the area |
| Street lighting | Well lit | | | | | Poorly lit |
| Litter, vandalism and graffiti | No litter, vandalism or graffiti | | | | | Much litter, vandalism and graffiti |
| Access to facilities | Shops within walking distance Parks within walking distance Primary school within walking distance | | | | | Shops not within walking distance Parks not within walking distance Primary school not within walking distance |
| Footpaths, roads and kerbing | Clearly defined Good condition Maintained nature strips | | | | | Undefined Poor condition No nature strips |
| Other land uses | No offensive land uses | | | | | Offensive land uses |
| Column score | | | | | | |
| Total score | | | | | | |

Source 1 Street survey form

Extend your understanding

Step 2 Mark the limit of your local area on your map.

Step 3 Examine this area closely and count each of the following pieces of infrastructure within it:

- police stations
- hospitals
- chemists
- doctors
- churches
- sporting grounds
- parks
- post offices
- schools.

Apply the skill

- 1 Using the steps outlined above, complete a map survey of your local area.
- 2 Describe the infrastructure of this area in a carefully worded paragraph.

- 1 What health care facilities are available to residents of East Perth?
- 2 What education facilities are available to residents of East Perth?
- 3 As an inner-city area, East Perth is well served with public transport. What evidence can you find for this?
- 4 Comment on the availability of roads in this area.
- 5 Perth did not score as highly as Melbourne or Sydney in a recent survey of liveable cities. In what measures of liveability do you think it scored lower than these other cities?

PERTH: CBD AND INNER SUBURBS



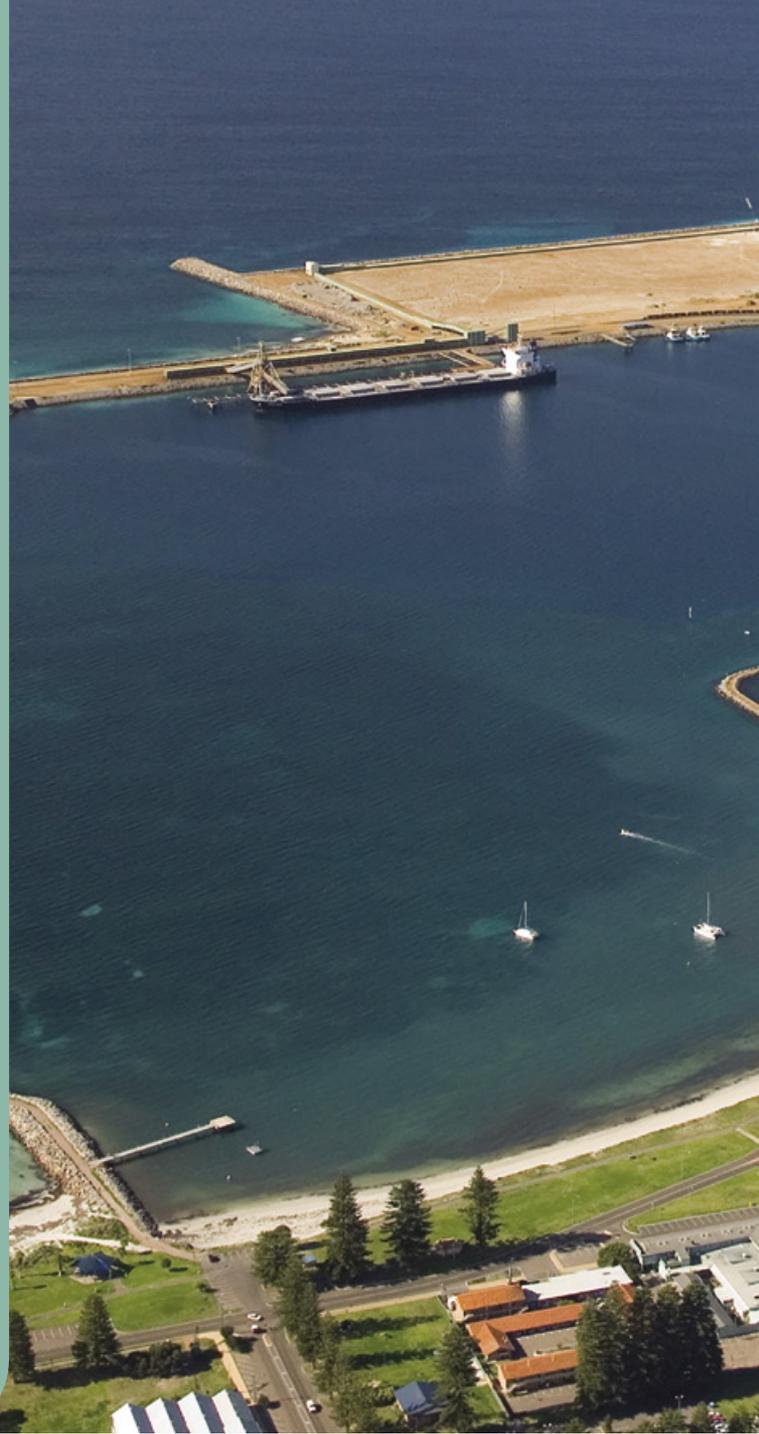
Source 2

Source: Oxford University Press

Place and liveability

Living in Australia

Both Indigenous Australians and early European settlers to Australia made decisions about where to live based on the available resources needed to survive – water, food and shelter. The factors that influence the **liveability** of places today are more varied and include access to services, environmental quality and safety. Connections to family, friends and places also influence where we live. Where we live can also change over time due to a range of factors, such as work and property prices. In retirement, many people opt for a sea change or tree change to enjoy a more relaxed lifestyle.



4A

Where do Australians live and why?

- 1 What features shown in Source 1 tell you that many people live in Esperance?
- 2 Why do you think people choose to live in Esperance?

4B

How can we make places more liveable?

- 1 Some parts of Western Australia are rated much higher in terms of liveability than others. Why do you think this is the case?
- 2 Think of a town you know well; what services and facilities could make this town more liveable?



Source 1 An aerial photograph of Esperance in southern Western Australia

Source: Stockimages WA

4.1 Where early Indigenous Australians lived

It is impossible to work out exactly when the first people arrived in Australia, but many historians estimate it was between 40 000 and 50 000 years ago. At that time, sea levels were lower than they are today. The islands of Indonesia were part of the Asian mainland, and over time people walked and undertook short sea voyages to reach what is now northern Australia. Over thousands of years these people gradually moved south, eventually reaching the south-western and south-eastern corners of Australia. As sea levels rose, Australia became an island and the cultures and traditions of Indigenous Australians developed in isolation.

Factors that influenced where Indigenous Australians lived

Upon reaching the Australian continent, early Indigenous Australians looked for the most liveable places – those that supplied the resources they needed to survive and prosper. Many Aboriginal peoples settled

along the northern, eastern and southern coasts as well as along what we now know as the Murray River. In these places they found the resources they needed to survive, particularly fresh water and abundant food.

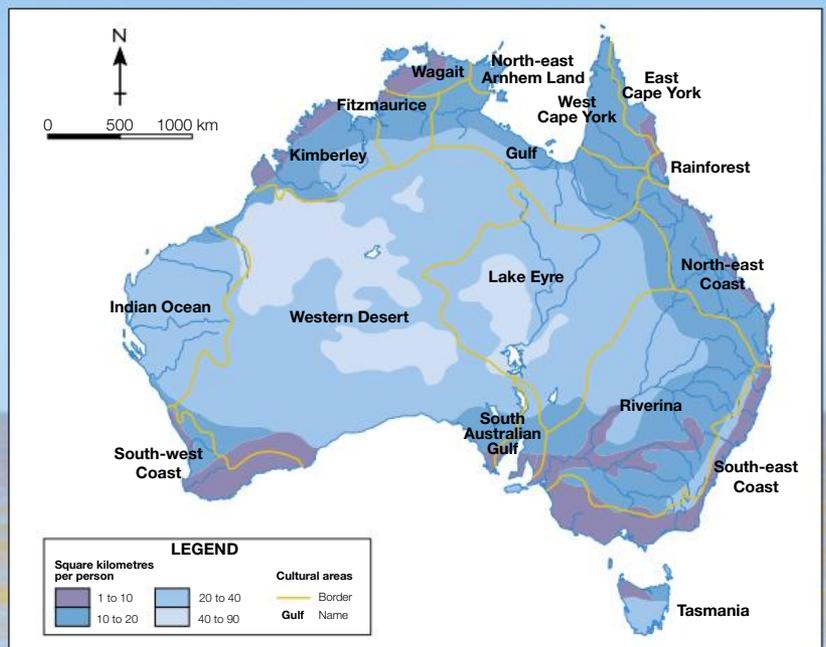
Indigenous Australians developed a way of life that took advantage of the natural resources available. Trees provided many important resources, including bark to make shelters, canoes and shields, and wood to make fires and spears.

They fished the rivers, in some places building elaborate stone traps to catch eels and fish, and hunted larger game such as kangaroo and wallaby. Birds and lizards living in the trees also supplied much of their food. Early tribes used virtually every part of the natural environment to support their way of life – shells, stones, plant fibres, coloured clay and bones all had their uses, however a reliable supply of fresh water, usually a river or stream, was perhaps the most important resource.

Source 1 An Aboriginal man in Western Australia demonstrates traditional spear fishing techniques.



AUSTRALIA: LOCATION AND DISTRIBUTION OF INDIGENOUS AUSTRALIANS IN 1788



Source 2

Source: Oxford University Press



Source 3 In the Western Desert, Aboriginal peoples use fire to expose the hiding places of goanna.

Further inland, resources were much scarcer. Aboriginal communities living here developed a different way of life suited to the limited resources. Throughout much of Australia, fresh water is hard to find and there are few large animals to supply food. In these desert regions, Aboriginal people lived a more cyclical way of life than the coastal and river peoples. Liveable places changed according to the season, so for most of the year they kept on the move, following natural cycles of monsoonal rains, the movement of animals or the fruiting of plants. They became superb trackers and hunters and were able to survive in some of the harshest environments on Earth. They found water in the most unlikely places, even in the roots of desert plants and the bodies of dormant (hibernating) frogs. Much of their food came from animals such as insects, grubs and reptiles, as well as from plants such as the bush tomato.

A spiritual connection to the land

Aboriginal peoples developed a deep connection with the land that supported them. The land formed the core of their beliefs and spirituality and an integral part of their view of themselves. They do not see themselves as separate from the natural environment but as part of it. Rather than owning land or living off the land, they believe that they live *with* the land and are responsible for looking after it. Their perception of liveability was based on the principle that the land was much more than just a resource to be used. Aboriginal Australians refer to their land, and their connection to it, as Country.

Part of the reason that Country is such an important concept to Aboriginal Australians is that their Dreaming stories, their way of life and their ancestors are all part of their homelands. When an Aboriginal Australian is in their Country, their spirits and their ancestors keep living through them.

In fact, they see the Country as a living individual. Many Aboriginal Australians choose to live in their traditional homelands or dream of doing so. Just as other Australians might long to see a favourite relative or return to a family home, Aboriginal Australians get their sense of belonging from their Country.

Check your learning 4.1

Remember and understand

- 1 How did Indigenous Australians first reach Australia?
- 2 Why did most Aboriginal people live near the coast or along rivers?

Apply and analyse

- 3 Compare the ways of life of inland desert Aboriginal people and those who lived near rivers in south-eastern Australia. What were some of the similarities and some of the differences?
- 4 Examine Source 1. What resources from the natural environment is this Aboriginal hunter using?
- 5 What factors influenced the liveability of places for early Indigenous Australians? Are these factors the same as those that influence your ideas on what makes a place liveable? Why or why not?

Evaluate and create

- 6 What do you think Indigenous Australians may have used each of these resources for: shells, stones, plant fibres, coloured clay and bones?
- 7 When Europeans arrived in Australia they had a different view of land ownership and use than Indigenous Australians. Why did these differences cause tensions and conflicts between these two groups of people?

Source 4 Many modern Indigenous Australians are moving back to their traditional homelands to reconnect with their ancestors and their beliefs.



4.2 Indigenous communities

Indigenous Australian communities share an ethnic background, have strong family ties, and centuries of shared history and beliefs. These factors make them an example of a community of the past. Indigenous Australian communities are found throughout Australia and tend to have strong spiritual connections to the land. These factors also make them an example of a community of place.

There are two distinct groups of Indigenous Australians. The largest group are Aboriginal peoples from mainland Australia and Tasmania. The second group are native to the Torres Strait Islands, the islands between Australia and Papua New Guinea. Although they are more closely linked (in terms of ethnic origins) to the Melanesian people of Papua New Guinea than with Aboriginal Australians, Torres Strait Islanders are Australian citizens. The border between Australia and Papua New Guinea means that Thursday Island (along with many other islands in the Torres Strait) is considered part of Queensland, not part of Papua New Guinea.

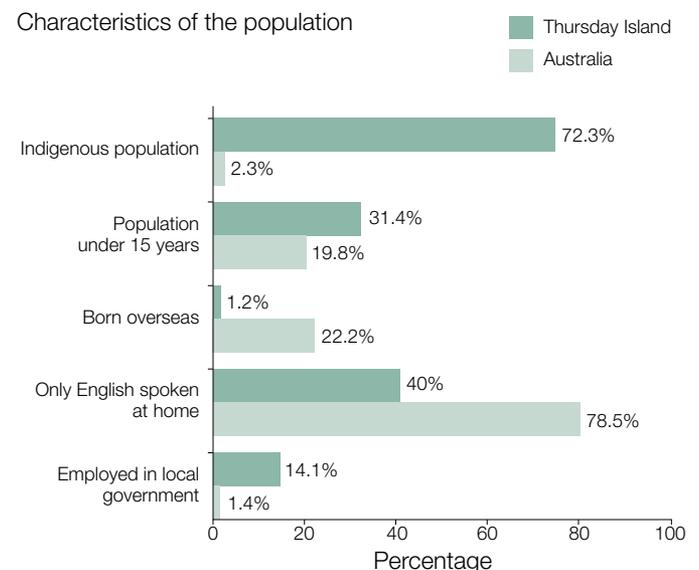
Case study: Thursday Island communities

Thursday Island lies in a cluster of Islands in the Torres Strait just off Cape York, the northernmost tip of Australia. Thursday Island has the largest population of all the Torres Strait Islands, and is where most of the local government functions for the islands are located. As the administrative centre, Thursday Island's 2500 people have access to excellent facilities, including several schools, a TAFE college, a hospital, a childcare centre, a library, a sports stadium with a swimming pool, parks and gardens. There is little fresh water on the island so a pipeline brings water from nearby Horn Island. Daily flights from Cairns to Horn Island and then a short ferry ride to Thursday Island reduce the isolation of life on the island.

With year-round warm temperatures and easy access to tropical reefs, the beach is the main focus of most leisure activities for children on Thursday Island. The islanders are keen fishers and the warm waters support a great variety of marine life. Many islanders are also passionate about sports, with NRL player Sam Thaiday and basketballer Patrick Mills, both of Torres Strait Islander descent, being particular favourites.

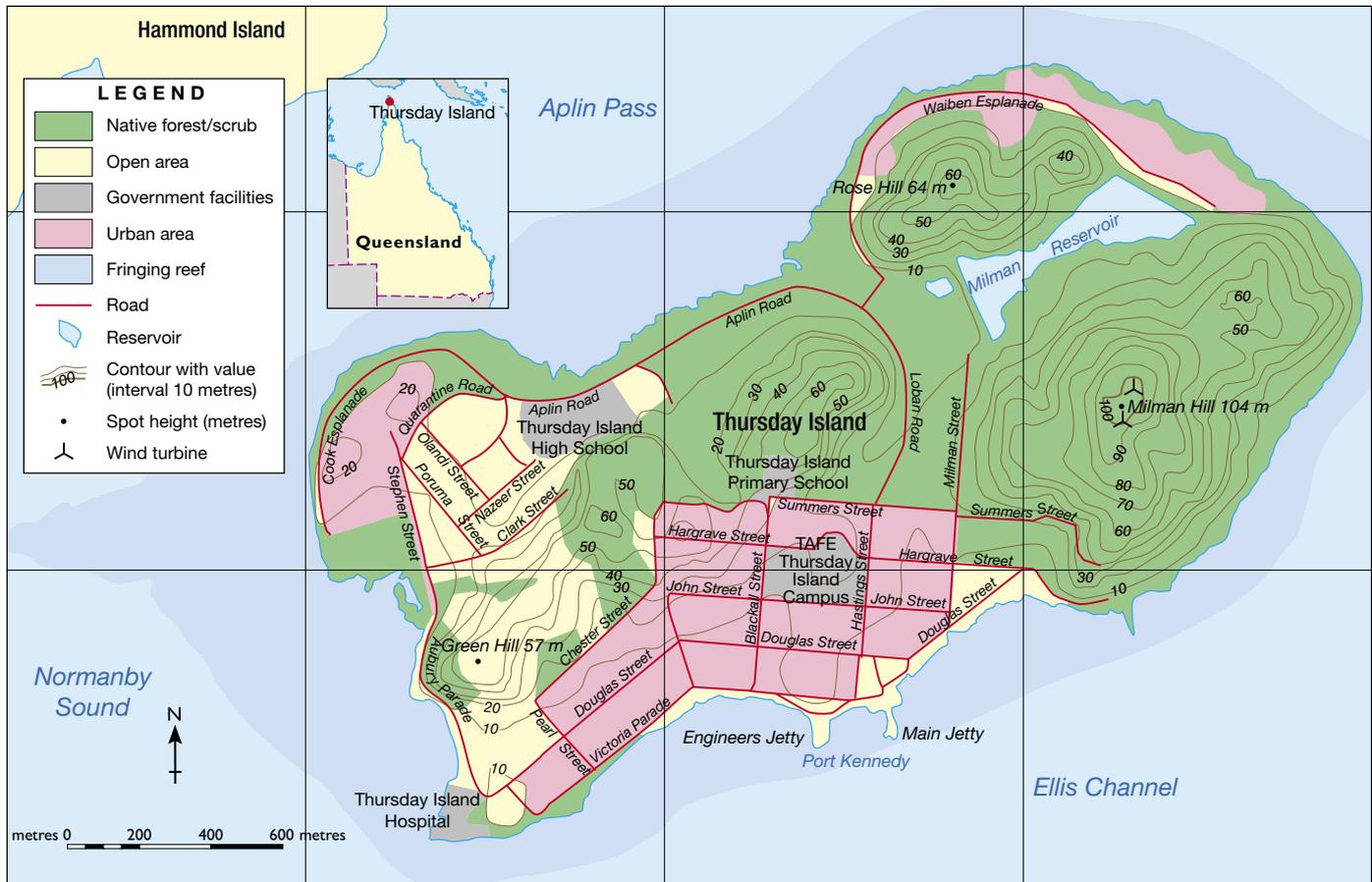


Source 1 Thursday Island children play on the beach of their island home.



Source 2 A bar graph comparing some key population statistics on Thursday Island with mainland Australia

THURSDAY ISLAND: TOPOGRAPHICAL MAP



Source 3

Source: Oxford University Press



Source 4 An oblique aerial photograph of Thursday Island showing the Thursday Island Hospital in the foreground (left) and Hammond Island in the background.

Check your learning 4.2

Remember and understand

- 1 Explain why Torres Strait Islanders have strong connections to Papua New Guinea even though they are Australian.
- 2 What community services are located on Thursday Island?

Apply and analyse

- 3 Examine Source 2.
 - a Which of these statistics do you find most surprising? Why?
 - b Explain why so many Thursday Islanders work in local government.
 - c Write a 50-word paragraph comparing key characteristics of the population on Thursday Island with the wider Australian population.
- 4 Examine Source 3.
 - a What are the advantages of the location of the main urban area on Thursday Island? What are the disadvantages?
 - b Where would you have chosen to build the urban centre?
 - c What is the name of the highest point on Thursday Island? How many metres above sea level is it?

4.3 Where modern Australians live

In much the same way as the early Indigenous Australians did, modern Australians also make choices about where they live based on how liveable they perceive a place to be. Today, however, many things have changed. In the distant past, people chose where to live based on whether the place gave them access to the basics necessary for survival, such as water and food. Today, modern technology and **infrastructure** make food and water available right across Australia, even in parts of the country, such as the desert, that would have previously been uninhabitable. As a result, the factors that influence where modern Australians live have changed. Today, many Australians make decisions about where to live based on a series of lifestyle factors.

Factors that influence where modern Australians live

A person's perceptions of liveability often depend on his or her needs, wants or preferences. These needs and wants are changing all the time and are often dependent on what stage of life a person is at. Age has a big influence on what a person wants from where they live. Young adults, for example, often want access to educational opportunities and jobs, while retired people will not be so concerned about these things. The type of household a person is a part of is also significant, as families have different needs to single people.

Despite these differences, many of the factors that people take into consideration when deciding where to live remain constant. A range of these are discussed below.

Housing

Suitable housing is a key consideration for people. On a basic level, people make decisions about where they live depending on what they can afford, and the size of house they need. Personal choice also has a big influence, whether, for example, someone wants



Source 1 Local shopping centres are an attractive feature to many people.

a modern home or a traditional home, a large garden or a low-maintenance apartment.

Access to services

People generally like to live within easy reach of the services they need. Public transport and well-maintained roads help people to get around with ease. Access to health care is also important, but even more so for people who need specialist care. Families with children often want access to good schools, childcare and playgrounds. Local shopping centres providing access to shops, banking and other professional services, as well as cafes and restaurants, also play an important role in where people settle.

Access to jobs

People often move to a place because it offers them the best opportunities for employment, and generally the bigger the place, the more jobs there are. Many young people who have grown up in small country towns end up moving to cities to find employment. Big cities, however, are not the only places to find employment. In recent years, isolated mining towns with very few facilities and services have grown rapidly because of the high-paying jobs on offer there.



The climate and environment

Most people in Australia live along the east coast, where the climate is more moderate than in other parts of the country. Personal preferences, especially when it comes to climate, are a key factor in determining where people settle. For example, many older people follow the sun, sea and a warmer climate in their retirement by moving to the Gold Coast. Coastal places are very popular with young and old people alike, but on the other hand, someone who enjoys snow-skiing might prefer to live near the mountains.

Cultural connections

Many people choose to live near their family and friends, and for this reason may stay in the same town or city suburb for the whole of their lives. Those moving to a new place, particularly from another country, may be attracted to a neighbourhood where others from the same cultural and language backgrounds live. This can offer a sense of security and familiarity, with local shops selling products from home, and local services offered in their native language.

Entertainment

People also make choices about where they live based on their leisure activities; for example, whether they want easy access to the outdoors or to museums and theatres found in city centres. People of different ages often want different entertainment options. Many younger people are drawn to the variety of entertainment offered in big cities such as music venues, nightclubs, concerts, theatres, shops and big sporting arenas, whereas these facilities may be of little use to older people.

Source 2 A mild climate and attractive natural features like beaches can play a key role in determining where people live.



Source 3 Large entertainment events attract big crowds of young people and play a role in where they choose to live.

Check your learning 4.3

Remember and understand

- 1 What are some of the factors that modern Australians take into consideration when deciding where to live?
- 2 How important are climate and environment in influencing where people in Australia live?

Apply and analyse

- 3 For each of the following groups, identify some of the liveability factors that would be most likely to influence where they want to live:
 - a a family with school-age children
 - b a retired couple
 - c a surfer in his 20s.
- 4 Consider the local area in which you live.
 - a What are its key liveability factors?
 - b What types/groups of people commonly live in your local area?

4.4 Living in large cities

Most Australians choose to live in large capital cities. The greatest growth in capital cities usually takes place around the outer edges of metropolitan areas. New suburbs appear on what was once farmland along the **rural–urban fringe**. As new housing estates are built on the farmland or bushland adjoining the suburbs, other services are attracted to these new suburbs to service the growing population. Schools, shopping centres, medical centres and sporting facilities become established to meet the needs of the residents. Industries are also attracted to the cheaper land and rents of the outer suburbs.

The spread of these new suburbs is often determined by physical features of the landscape such as mountains and rivers. In the Perth metropolitan area new suburbs tend to spread along the Indian Ocean coastline north and south of Perth. This means that settlements that were once small coastal towns have become part of the metropolitan area.

Case study: Joondalup

The city of Joondalup lies in the fast-growing northern suburbs of Perth and is home to over 164 000 people. As is the case with many suburbs on the edges of Australia's cities, many families with young children live in the area: almost 20% of the population is under the age of 15.

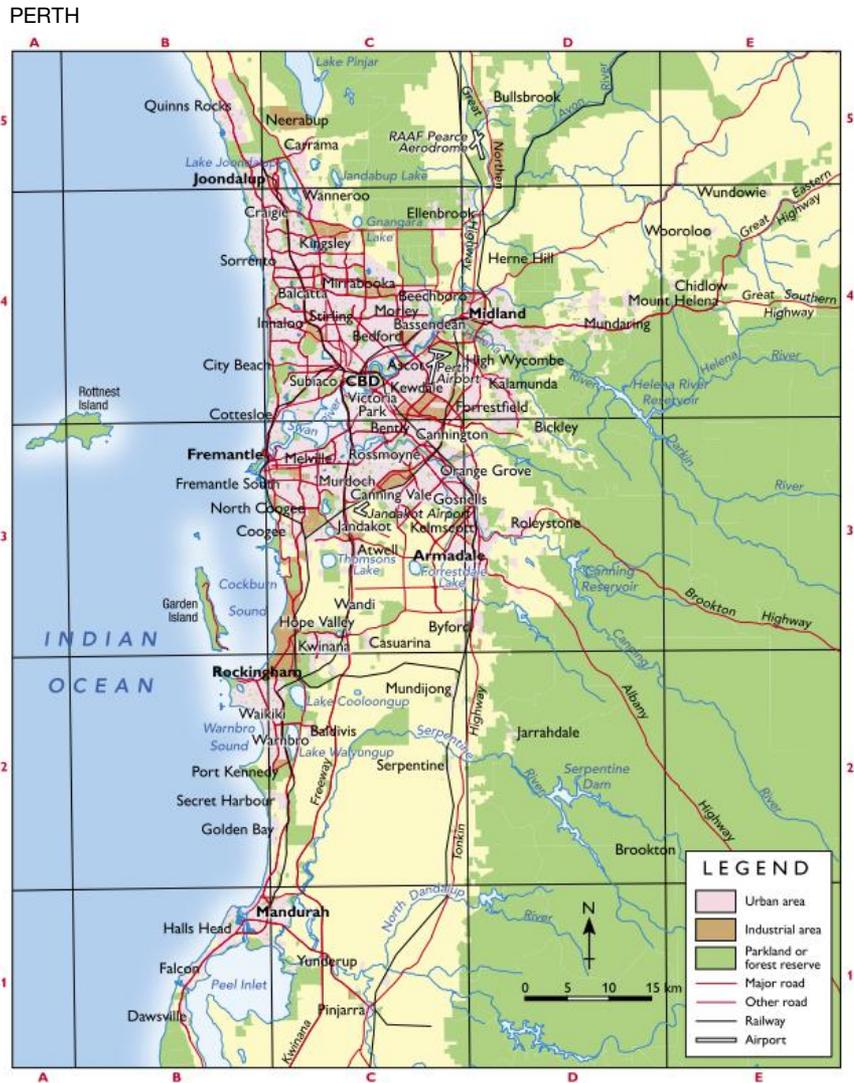
There are a number of schools in the region along with other amenities, such as public pools, libraries and a university. Joondalup also has numerous shopping areas, including large shopping centres, shopping strips along major roads and its own central business district (CBD). Joondalup is linked to other parts of Perth, including its CBD, by a road and rail network. In common with other regions of Australia with a rapidly growing population, Joondalup struggles at times to meet the demands of all its residents.



Source 1 An oblique aerial photograph of Perth's northern suburbs

Many residents of the northern suburbs work closer to the centre of the city and use private vehicles to travel to and from work. This puts hundreds of thousands of cars on the road during the morning and afternoon peak periods, causing traffic delays. The Mitchell Freeway is being extended and other major roads widened to help deal with the increased traffic flows in the area.

Metropolitan Perth is one of Australia's fastest growing cities and is forecast to be home to an additional 1.5 million people by 2050. The state government has developed a plan to deal with this growth (known as Directions 2031) and this outlines where more than 800000 new homes will be built. While the plan includes some new homes in the central city there will also be extra demands placed on the outer regions, including the city of Joondalup.



Source 3 Map of Perth showing location of Joondalup
Source: Oxford University Press

Source 2 Lakeside Joondalup Shopping City is Perth's largest shopping centre with over 300 individual retailers.

Source: Stockimages WA

Check your learning 4.4

Remember and understand

- 1 Where does the greatest growth in capital cities generally occur?
- 2 Why are some industries and some families attracted to the outer suburban areas?

Apply and analyse

- 3 Describe the location of Joondalup in the following ways:
 - a Using compass directions and distance
 - b Using the names of physical features.

- 4 Using the map and further research if needed explain why the Perth metropolitan area has spread along the coast rather than inland.
- 5 What are some of the challenges faced by city planners in the Joondalup area?

Evaluate and create

- 6 Construct a sketch of the aerial photograph of Perth's northern suburbs. On your sketch, locate and label the main transport links and key physical features, and shade the area covered by urban areas.

4.5 Living in rural areas

Many parts of Australia are used to raise animals and grow crops for food. The type of farming carried out in different areas is generally determined by climate and the availability of water. Farms vary from small properties used to grow crops, such as grapes or vegetables, to huge stations the size of European countries where cattle are raised.

Living on a farm can be very different from living in a city. It can be more difficult to access services, such as schools, shops and doctors. The population of many rural areas is declining as people move to cities for better job opportunities and a wider range of education options. There are also many advantages to living on a farm. Farms are often family-run businesses and this gives farmers the opportunity to be their own boss. There is also less air pollution, noise and traffic in rural areas. In recent years, advances in information and communication technology have reduced the disadvantages of living in a rural place.

Case study: living on a dairy farm

Western Australia's dairy industry is centred on the town of Harvey in the far south-west of the state. There are about 160 dairy farms in the state producing about 350 million litres of milk each year. Most of this milk is consumed by people throughout Western Australia as fresh milk.



Source 1 A dairy herd in Western Australia.

The life of a dairy farmer is based on the twice daily milking of their herd of cows. Early in the morning the herd comes to the milking shed to be milked. The farmer cleans their udders and attaches suction cups that draw out the milk which is then stored in a large refrigerated tank. A truck collects the milk every day and transports it to a dairy factory where it is stored, treated, packaged and sent to shops.

Once the herd has been milked in the morning the farmer is kept busy with many other important jobs like feeding cows, fertilising paddocks, fencing and dealing with calves and sick animals. The daily routine ends with another round of milking in the late afternoon.

Near the small town of Benger, in the south-western district of Western Australia, lies the dairy farm of Sam and Kristy Cheetham. In common with many farms in Australia, this dairy farm is a family-run business.

The farm has grown over the years as the family has bought more land. Several workers are employed to help milk the cows twice a day and carry out other farm jobs, such as mending fences and looking after the grazing paddocks. These workers and their families also live on the Cheethams' farm.

The Cheethams' farm is located close to several small towns and some distance from larger towns and cities. The town of Benger has no shops other than a small service station and the closest supermarket is in Harvey, 12 kilometres away, as is the closest bank.

The closest regional city is the coastal city of Bunbury, one of Australia's fastest growing cities. The city has a wide range of shops and other services, such as hospitals and secondary schools. The Cheethams' oldest daughter, Charlotte, attends Edith Cowan University in Bunbury and is considering moving to the city to avoid the daily 30-minute commute. The Cheethams need only visit Western Australia's capital city a few times a year for major services, such as an international airport or specialised health care. They also travel to Perth for sport and entertainment as most large events of this type are not held in regional areas.

Towns and cities in rural areas tend to be located a certain distance apart. This is determined by the size of the population and the services available in that town or city. Large towns (such as Bunbury, Mandurah and Busselton) offer a large range of goods and services and are spaced well apart. They need to draw in people from a bigger distance to support services they offer. Small towns, such as Harvey, only have a few shops and services to support the local community. If these small towns grow too quickly this can put a strain on the services provided.



Source 2 Uduc Road, the main shopping street in Harvey



Source 3 Bunbury's town centre

Check your learning 4.5

Remember and understand

- 1 How does living in a rural area differ from living in a city?
- 2 What different jobs are done on the Cheetham farm?

Apply and analyse

- 3 Where would the Cheetham family go to buy each of the following?
 - a A loaf of bread
 - b A packet of breakfast cereal
 - c A pair of jeans
 - d A new car
- 4 Look at Source 2. What services and supplies do you think might be available in Harvey?
- 5 Explain why Charlotte is considering a move to Bunbury. What will happen to small rural towns such as Harvey if many young people such as Charlotte moved to large settlements?

Evaluate and create

- 6 Work in a small group to list some of the features of rural areas that make them more liveable than urban areas. Rank these from the one you consider most important to the one you consider least important.
- 7 Repeat this exercise for those features that you think make rural areas less liveable.
- 8 Write a paragraph explaining your rankings.

4.6 Living in coastal areas

Eighty-five per cent of all Australians live within 50 kilometres of the coast. As a result, nine of our 10 largest cities sit on the coast. As well as huge cities such as Sydney and Melbourne, there are hundreds of smaller communities dotted along our coastline. Outside the capital cities, these coastal communities tend to be the fastest growing regions in each state. In Queensland, it is the Gold Coast and the Sunshine Coast, and in Western Australia, it is Busselton.

Coastal towns and cities are growing in size and population across Australia due to a range of factors. Many people decide to move to the coast because they want a more relaxed lifestyle near natural features such as beaches, bays and other landforms. Geographers refer to this trend as a ‘sea change’.

Case study: Margaret River, Western Australia

The town of Margaret River lies about 270 kilometres south of Perth and was established to support local farming, particularly dairy farming. It has developed into a popular tourism destination and is particularly well known for its beautiful beaches, surfing and wineries.

The population of the town is about 7000 people (2015 estimate) but like many coastal towns in Australia, this number is growing. By 2031 the population is expected to reach 10200. By looking closely at the census data collected by the Australian Bureau of Statistics it becomes clear that the greatest growth is by people over the age of 65, particularly married couples.

As with any change, there are both benefits and costs to this population increase. Many of the hundred or so new homes built every year are built on the edge of the town on land that was once natural bushland and forest. The new residents also put demands on the existing facilities in the town such as transport, including public transport and existing roads, water supply, waste-water treatment, gas supply, electricity, internet broadband and care for elderly people.

WESTERN AUSTRALIA: MARGARET RIVER REGION



Source 1

Source: Oxford University Press



Source 2 About 100 new homes a year are being built in the town of Margaret River.



Source 3 Many businesses in Margaret River rely on trade from tourists and from new residents.

This creates both challenges and opportunities for individuals and organisations. Builders in the town are experiencing an increased demand for their services as are real estate agents and many other local businesses. The local council also receives more money and this gives them the opportunity to build more services or improve existing ones.

As more Australians reach retirement age, it is expected that the demand for new homes and services such as health care and roads will increase dramatically in sea change towns like Margaret River.

Check your learning 4.6

Remember and understand

- 1 How does living in a coastal area differ from living in a city?
- 2 What is a sea change?
- 3 What is Margaret River's population expected to be in 2030? How many extra people is this from the 2015 estimated population?
- 4 As more people retire in the next few decades it is expected that Margaret River's population will increase. Why is this the case?

Apply and analyse

- 5 In a small group, brainstorm the individuals and organisations that will benefit from the growth of the population. Share your ideas with the rest of the class.

- 6 Can you think of some people who would not welcome this population change?
- 7 Some people are worried that the growth of this town may lead to an increased risk of bushfires. Why do think this is the case?

Evaluate and create

- 8 Using the example of Margaret River or another coastal town you know well, write a newspaper report (including two pictures) on the challenges facing town planners in expanding coastal towns.

4.7 Living in remote places

Most Australians live in large cities on the coast, with very few people living in the centre of the continent. Much of the interior of Australia is **desert** or semi-desert, with large distances between towns and settlements. Geographers refer to these areas as remote because people living in these areas have difficulty accessing some goods and services. Providing basic services (such as roads, food, water, telephone and Internet access) to remote communities can be difficult and expensive.

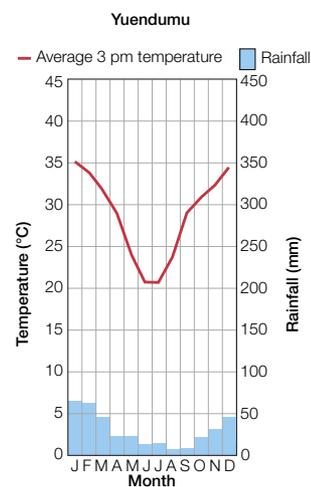
A high proportion of Indigenous Australians live in regional and remote areas – almost half of the Indigenous population compared with just 13 per cent of the total population. For many Indigenous Australians this decision is based on a deep connection to the land that began thousands of years ago.

Living in the desert

Australia is the second-driest continent in the world, after Antarctica. Seventy per cent of our continent receives less than 500 millimetres of rainfall each year. This low rainfall has produced large deserts across much of inland Australia. Deserts are some of the harshest places on Earth. The people who live in desert communities must overcome many challenges.



Source 1 The Yuendumu Pool opened in 2008. Children can only swim here if they regularly go to school.



Source 2 Yuendumu climate graph

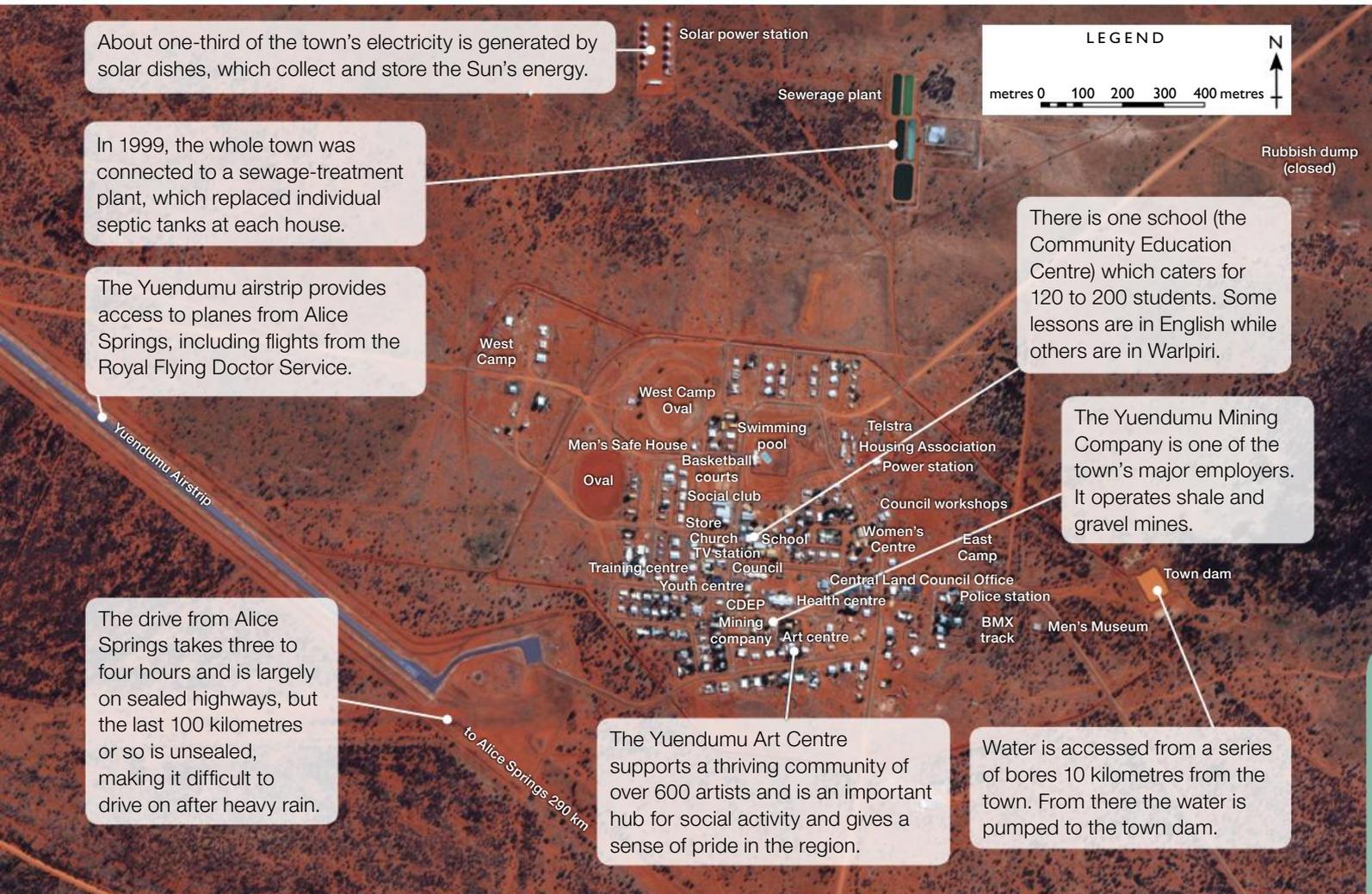
Case study: Yuendumu

One desert community is based in the town of Yuendumu, located 290 kilometres from Alice Springs in the Northern Territory. Not only is it located in the Tanami Desert, it is also one of the most remote places in the world. It is so remote that few locals have ever seen the sea.

The Warlpiri people

The Warlpiri people of Yuendumu do not see land as something to be owned. Instead, they believe that they belong to the land. This deep sense of connection to a particular place can be very difficult for non-Indigenous Australians to understand. In the same way, Warlpiri people find a system of land ownership difficult to understand.

The Warlpiri system of family and relationships is complex. A crucial part of any Warlpiri child's education is to learn about this system. It helps them to understand the natural and social world and a person's place within it. This system binds the Warlpiri people to each other and to the land.



Source 3 Yuendumu satellite image

Problems and challenges

Living in Yuendumu presents many challenges. The isolation from other places is the most obvious of these, however in recent years sealed roads, the airstrip, telephones, television and the Internet have helped to connect Yuendumu to the outside world. Many older people in the community, however, worry that better transport and communication will break down the customs of the Warlpiri people.

As with other remote Aboriginal communities, health problems, such as eye diseases, are common. Substance abuse among young people, particularly petrol-sniffing, was once a serious problem but a strong community response has largely brought an end to this practice. This involved providing young people with a better range of activities and making substance abuse unacceptable.



Source 4 The solar power station provides 50 per cent of daytime electricity needs to Yuendumu and enables significant reduction in the diesel fuel used in power generation in the community.

Living in the Pilbara

Australia is a mineral-rich country. We have the world's largest deposits of brown coal, mineral sands, nickel, uranium, zinc and lead. We also rank in the top six in the world for reserves of other minerals, such as bauxite, black coal, diamonds, copper, gold and iron ore. Iron ore is used to produce steel, which is an important part of many industries around the world. Some of the world's largest and richest iron ore deposits are in an area of Western Australia known as the Pilbara.

Some mining workers live in towns in the Pilbara close to the mines where they work, such as Tom Price, Newman and Paraburdoo. These towns can be hard places in which to live as they tend to be very isolated. Their remote location means that some goods and services can be difficult to access. The perception of these towns as less liveable than other centres in Australia means that workers are offered very attractive salaries and conditions to come and work in the remote Pilbara region. Many miners prefer to live a FIFO ('fly-in, fly-out') lifestyle. This means that they live in large cities, such as Perth, for two weeks and then fly to the mines to work for two weeks. While this type of routine may suit single workers, married workers generally find that this places a strain on their families.

Case study: Tom Price, Western Australia

In many ways Tom Price is a typical mining town. It is home to about 2700 people, almost all of whom are involved, directly or indirectly, in the mining industry. Of the workers in the town over the age of 15, almost 50 per cent work in the mines. Half of these workers categorise their jobs as machinery operators or drivers.

The children who attend one of the three local schools almost all have at least one parent employed at the mine. The local high school works in partnership with the international mining company that owns and operates the mine, Rio Tinto, to educate students about jobs in mining. The supermarket, milk bars, service stations, vets, chemists, doctors, hardware store and carpet cleaner all rely on the income from miners to keep their businesses running. While this is great for the town when the demand for iron ore is high, it can cause problems when demand falls. Industries and places that rely on selling one resource, such as a particular mineral, are sometimes referred to as being in a 'boom or bust' cycle.

Another problem facing the residents of Tom Price is a shortage of homes. During boom times, new workers and people looking for work at the nearby mine arrive regularly and need accommodation. This demand for housing means that house prices go up quickly, making it difficult for young adults in the town to buy a house. In the Pilbara mining town of Newman, for example, houses tripled in price between 2004 and 2008.

AUSTRALIA: MINERAL, URANIUM AND COAL RESOURCES



Source 5

Source: Oxford University Press

skilldrill

Understanding population pyramids

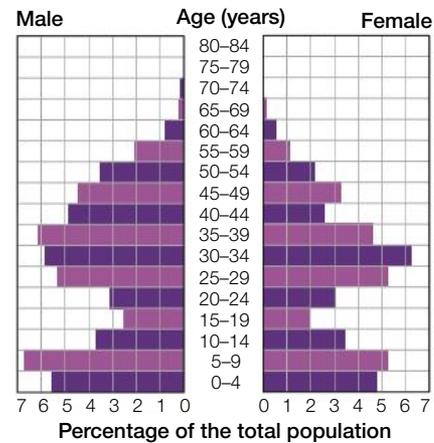
Population pyramids are bar graphs that show the percentage of males and females of different ages in a population. They help geographers compare different groups within a population and also allow them to identify trends and patterns of change (for example, in a city or country). Follow these steps in order to understand population pyramids:

- Step 1** Be sure to read the title of the population pyramid carefully. This will tell you exactly what population is being studied. Also look at the labels running along the bottom (percentage or total population) and through the middle of the pyramid (age groups).
- Step 2** Population pyramids are organised so that the younger age groups are at the bottom and the older age groups are at the top. Percentages (or numbers) of men are always shown on the left-hand side and percentages (or numbers) of females are shown on the right-hand side.
- Step 3** To compare the percentage of males and females in the same age groups, read across the rows. The scale on the male side begins at zero and increases from right to left. The scale on the female side begins at zero and increases from left to right.
- Step 4** To compare the percentage of only males or females, look up and down the columns.

Apply the skill

- Using Source 7, complete the following tasks:
 - What percentage of the population in Tom Price is girls aged 10 to 14?
 - Are there more men or women aged 35 to 39 in Tom Price?
 - Which is the largest single group in Tom Price?
 - Is there a greater percentage of males or females in Tom Price? Why might this be the case?
 - Which group in Tom Price is the smallest? Try to estimate what percentage of the total population is made up by this group.

Source 6 Tom Price iron ore mine in Western Australia



Source 7 Population pyramid for the town of Tom Price, Western Australia

Check your learning 4.7

Remember and understand

- What services are difficult to supply to remote areas?
- Why don't many people live in the centre of Australia?
- Why don't the local Warlpiri people just move to a different area with more services?
- How many people live in the town of Tom Price and what work do they do?
- Why do some people choose FIFO?

Apply and analyse

- Use the information provided in Source 3 to create a table listing all of the services available in Yuendumu. List each of the services under the following headings: water and sanitation; transport; power; industry; education; and recreation.
- How does the land tie the people of Tom Price and Yuendumu to their remote locations?

4A rich task

Living on Macquarie Island

Macquarie Island is one of the most remote places on Earth. It is located in the Southern Ocean, approximately halfway between Australia and Antarctica. Macquarie Island is an Australian territory and is home to about 40 scientists in summer and about 20 in winter. They live and work in the research station on the northern tip of the island. At the station there are facilities such as buildings in which to sleep and eat, a diesel power station, a greenhouse for growing vegetables, helicopter pads and even a brewery. From here the scientists explore the island and try to find out more about the island itself and the animals and birds that live there.



skilldrill

Preparing fieldwork sketches

Fieldwork sketching helps geographers record and label important aspects of the landscapes they are investigating. It is a skill that you will need to practise before taking part in any field trips.

Apply the skill

Imagine you are on a field trip to Macquarie Island and that the scene in Source 1 is in front of you. Follow these steps to create a field sketch of the scene and use the map to help you label the key features.

Step 1 Boundaries and border: Establish the boundaries of your landscape and draw a border of the correct shape.

Step 2 Sketch outlines: With a graphite pencil, lightly sketch the main landscape lines. If there is a horizon in the scene put this about one-third from the top of the frame.

Step 3 Details: Keeping in mind the features on which you want to focus, add detail to your sketch. Label those parts of the scene that you consider to be most important.

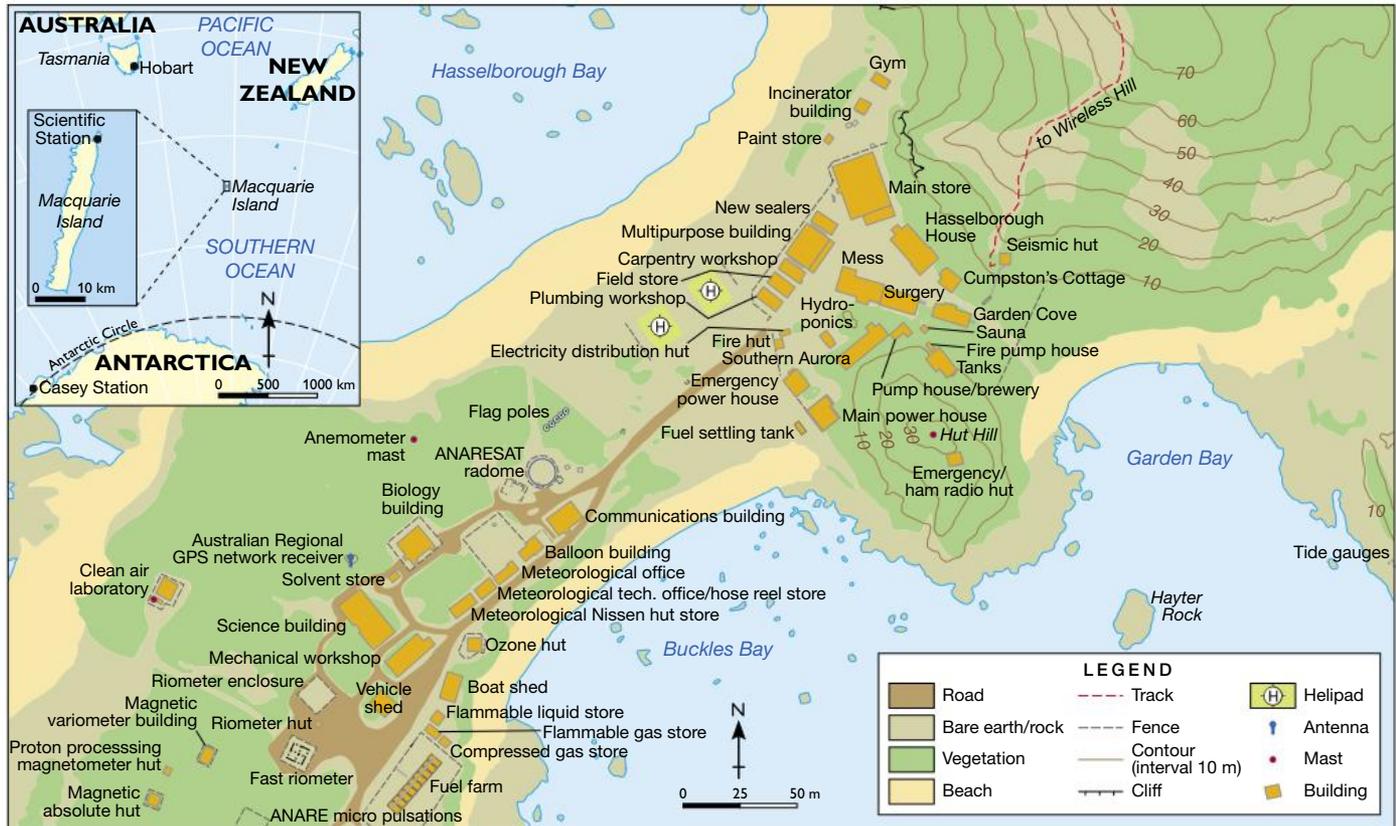
Step 4 Shade: Add shading, which helps to establish depth in your sketch and to show the shape of objects.

Step 5 Colour: Add some colour if you wish. Do not try to copy every subtle colour of nature; just give a hint of the right colour.

Step 6 Finishing touches: Label your sketch with the location and date.

Source 1 Oblique aerial view of the scientific base on Macquarie Island

MACQUARIE ISLAND SCIENTIFIC STATION (INSET: MACQUARIE ISLAND'S LOCATION)



Source 2

Source: Oxford University Press

Extend your understanding

- Why is Macquarie Island considered remote?
- Use the scale on Source 2 (inset) to estimate the distance from Hobart to Macquarie Island.
- Consider the challenges faced by those living in remote places.
 - What challenges do you think the scientists on Macquarie Island would face?
 - In what ways are these challenges similar to those faced by people living in a remote region on the Australian mainland? In what ways are they different?
- How do you think people on Macquarie Island access supplies?
- How do you think modern communication technology, such as satellites and the Internet, help to overcome some of the challenges faced by scientists on Macquarie Island?
- What difficulties might the scientists experience travelling to their work sites?
- Macquarie Station is used for scientific research but is also a home to a team of scientists and researchers.
 - Find three features of the station that show that this is a place where people live.
 - Make a list of the buildings that are used for science and research.
 - What do the names of these buildings tell you about the type of research that is undertaken on the island?
- Compare the oblique aerial photograph of the station (Source 1) with the map (Source 2).
 - What is the large circular object in the centre of the photograph?
 - What colour is the hydroponics building? What is hydroponics and why is it important in this place?
 - In which direction was the photographer facing?

4.8 Strategies for improving liveability

Over time, cities change and grow and the needs of people living in cities also change. To maintain and improve the liveability of a city, the services and facilities provided by governments and councils need to be regularly reviewed. Experts within government, universities, private business and community organisations, including geographers, are needed to identify problems in our cities and offer solutions.

In developing strategies to improve the liveability of our cities, planners must first identify the problems and their underlying causes, identify the impact on liveability, and then come up with strategies to try to overcome the problems. Source 1 shows some of the liveability issues currently facing people in Australian cities along with some of the strategies that have been suggested to cope with them.

| The problem and underlying cause | The impacts on liveability | Some strategies for solving the problem |
|---|---|---|
| <p>Traffic congestion</p> <p>As cities grow, people need to travel further to work and school. Higher rates of car ownership see more cars on the road, leaving the road network struggling to cope.</p> | <p>Traffic congestion results in people spending less time at home and more time in their cars; increases levels of air and noise pollution; increases levels of stress and frustration for drivers leading to increased incidents of road rage.</p> | <p>Strategies include building new roads which take road-users around rather than through the city; increasing public transport options to encourage people to leave their cars at home; encouraging alternative modes of transport, for example, building bike paths for cyclists.</p>  |
| <p>Social inequalities</p> <p>As cities grow, some people within the community are left without work and are unable to access services such as schools, health care and housing.</p> | <p>Social inequalities can result in homelessness, unemployment and poverty; leave some people with a sense of alienation from the community; can have a particularly negative impact on young people.</p>  | <p>Strategies include ensuring access to opportunities through good education facilities and public transport; assessing needs and providing support through community services; providing facilities for young people where they can get together and receive the help they need.</p> |

| The problem and underlying cause | The impacts on liveability | Some strategies for solving the problem |
|--|--|---|
| <p>Environmental issues</p> <p>As cities grow, they have a greater impact on the environment. Water resources are used up, pollution increases and more and more energy is required to service the greater population.</p> | <p>Environmental issues include air pollution from increased energy usage, land contamination from landfill, water shortages and damaged waterways.</p> | <p>Strategies for sustainable use of the environment include recycling rubbish materials; restricting water use; developing buildings and cars to be more energy-efficient; and using renewable energy sources.</p> |
| <p>Urban sprawl</p> <p>As cities grow, more and more housing is required at an affordable price. Housing estates on the outskirts of cities offer cheaper housing options, but they also push further and further outwards.</p> | <p>Urban sprawl reduces the amounts of productive farmland near cities; threatens the habitats of native plant and animal species; creates greater dependency on cars, which in turn increases levels of air pollution and traffic congestion. New housing developments can suffer from a lack of community services providing poor liveability for their residents.</p> | <p>Strategies include increasing the density of housing in established suburbs closer to the CBD with more multistorey dwellings; protecting native habitats with bushland corridors and by planting more native trees in urban areas; ensuring public transport services are provided to all new developments and establishing satellite business centres outside the CBD to encourage local employment and services for those living on city fringes.</p> |



Source 1 Some issues faced by modern city dwellers and some strategies for improving liveability

Check your learning 4.8

Remember and understand

- 1 How does traffic congestion reduce the liveability of a city?
- 2 What is urban sprawl and what causes it?
- 3 What is an alternative to urban sprawl when a city needs to increase its housing supply?
- 4 Name three environmental issues that have a negative impact on liveability.

Apply and analyse

- 5 Which urban issues described here affect people in the city in which you live (or in a city you know well)?
- 6 What would you describe as the biggest issue faced by people in that city?
- 7 Select one of the problems described in Source 1 and come up with a list of strategies of your own that you think could be used to reduce the problem and improve liveability.

4.9 Improving transportation

Australians are among the most car-addicted people in the world. About 90 per cent of all journeys made in Australia are made by car, with trains, trams, buses and bicycles accounting for the remaining 10 per cent. As the number of people in cities grows, so too does the number of cars. Many urban roads are struggling to cope. Road congestion, particularly during morning and evening peak times, is threatening the liveability of many of our large cities.

Former federal Infrastructure Minister Anthony Albanese described the problem like this: 'Urban congestion contributes to traffic delays, increased greenhouse gas emissions, higher vehicle running costs and more accidents. It is a tragedy that many parents spend more time travelling to and from work, than at home with their kids. Relieve urban congestion and we improve our quality of life.' He estimated that traffic congestion will cost Australian cities \$20 billion a year by 2020 unless the problem is addressed.

Strategies for improving transportation

Here are some solutions that planners around the world are experimenting with to improve traffic flows:

- **Change the roads**
 - Build more ring roads and bypasses that take traffic around the city centre and other busy places.
 - Change the traffic flow in the inner city by introducing a one-way system for most of the roads.
 - Make the main roads smarter by installing: overhead signs advising of variable speed limits; signs that use GPS satellites to provide drivers with traffic information; traffic lights on entry ramps; monitoring systems in the road surface to detect traffic incidents and congestion; overhead closed circuit television monitors; and traffic signals that give priority to public transport.

- **Get people off the roads**
 - Introduce a 'park and ride' system where drivers park their cars on the edge of the central business district (CBD) and then travel to the CBD by bus or train.
 - Ban cars from the CBD.
 - Charge car drivers a toll when they enter the city centre.
 - Develop a better public transport system that encourages people to get out of their cars into trams, trains, buses and ferries. The world's best public transport systems involve all these modes working together on a single ticket and with an integrated timetable rather than as individual pieces of different puzzles.
 - Encourage people to walk or cycle by building more footpaths and bike lanes and promoting the health benefits of walking and cycling.
- **Keep doing what we're doing**
 - Build more multistorey car parks in the city centre.
 - Build more roads to carry the increased traffic.
 - Increase motoring taxes to pay for new roads through increases in petrol prices.
 - Encourage private companies to build toll roads.



Source 1 Traffic on Perth's Kwinana Freeway during peak hour



Source 2 Graphic representation of the paths taken by 380 taxis in a single day in London. Bright splashes of light show paths taken by many taxis while darker areas have seen few, if any, taxis.

Check your learning 4.9

Remember and understand

- 1 What does the graphic representation of London taxis (Source 2) reveal about transport flows in large cities?
- 2 What are the causes of traffic congestion?
- 3 What problems does traffic congestion cause for people and cities?

Apply and analyse

- 4 Here we have described many possible solutions to traffic congestion.
 - a Which do you believe are the three solutions most likely to relieve congestion? Explain your response.
 - b Which solutions do you think are most likely to make congestion worse rather than better? Explain your response.

Evaluate and create

- 5 As the planner responsible for traffic congestion in your city, you have chosen one of these solutions to put into place. Design an advertising campaign that explains this solution to drivers and the general public. Remember to explain it clearly and simply and to point out the benefits of this solution for drivers and for all the residents in the city. You may choose to create a poster, brochure, bumper sticker or short TV or radio ad explaining your campaign.

4.10 Improving liveability for young people

When trying to improve the liveability of a town or city, planners need to take into account the varying needs of people of different ages. The needs of children and young people are obviously very different from the needs of older retired people. Each of these groups, however, benefit from having special attention paid to their particular needs. Here we will look specifically at strategies for improving the liveability of places for children and young people.

Strategies for young people

The views of young people need to be taken into account when planning for more liveable cities. Some of the key liveability factors relevant to a younger population are:

- **Public transport**

Young people are the community group most likely to be dependent on public transport services. Public transport needs to be safe and reliable to encourage young people to use it. Public transport routes also need to be designed to meet the needs of young people with services regularly going past local schools, shops, entertainment and sports facilities.

- **An attractive and healthy natural environment**

When cities experience environmental issues such as air pollution, those often the worst affected are children, and negative impacts to their health can last a lifetime. With housing density increasing, the need for green spaces is increasing. Access to public parks and playgrounds provides healthy natural environments for children who are living in housing without gardens. These playgrounds also provide opportunities for children to develop their coordination and physical strength while enabling them to make friends and socialise.

- **Good schools and other educational facilities**

Schools need to have teaching spaces that offer the flexibility for group work and individual work and also provide good outdoor spaces. As students



Source 1 Venues designed for young people can increase youth participation in the community.

use more technology in the classroom, schools need to adapt to meet the needs of this new technology by providing fast Internet and wi-fi.

- **A wide range of recreational environments for young people**

One of the keys to improving liveability for young people is providing good public spaces. Public spaces should be designed to cater for their specific needs and interests. These include sportsgrounds and facilities such as skate parks and skating rinks, and entertainment facilities including cafes, cinemas and music venues. Community festivals and events can also be organised to include activities specifically designed to interest young people.

- **Services for young people at risk**

Vulnerable young people who are at risk from abusive family members, homelessness or substance abuse need special attention to ensure that they are not disadvantaged by their circumstances and can reach their potential. Community services can provide support through counselling and mentoring, or by helping to arrange alternative accommodation.

Case study: 'Our Youth – Our Future', Western Australia

In 2012, the Western Australian government released a set of goals designed to improve the lives of young people. Western Australia has Australia's fastest growing youth population. People aged between 12 and 25 years living in Western Australia make up about 20 per cent of the state's total population.

The Western Australian Government is working with communities and consulting with young people to improve liveability in the areas that matter most to them. Through policies, services and community programs they aim to:

- increase young people's participation in community life through sport and recreation, culture and arts, and volunteering
- provide opportunities for young people to learn life skills and prepare for their working future
- create environments that appeal to young people and encourage healthy lifestyles.

The Esplanade Youth Plaza

One example of a community space created specifically to appeal to young people and improve liveability is the plan for a youth plaza on Fremantle's Esplanade Reserve. The local council and the contractor, Convic Skateparks, provided information

on the various options available and collected feedback from the community through workshops and online surveys. The new youth plaza has an area designed for skateboarders and BMX riders. Other features being considered are a basketball half-court, table tennis tables, a stage area for youth concerts and children's play areas.

Check your learning 4.10

Remember and understand

- 1 What are three liveability issues that affect young people?
- 2 How does a skate park provide a more liveable community for some young people?
- 3 What facility or service would you like to see in your local community to make it more liveable for you?

Apply and analyse

- 4 Consider the case study from Western Australia on this page.
 - a What vision does the Western Australian government have for young people?
 - b Provide one example of a service or a place that you think would make a local community a more liveable place. What would be the expected outcome from your plan?



Source 2 Skate parks are a great way to make open spaces more appealing to young people.

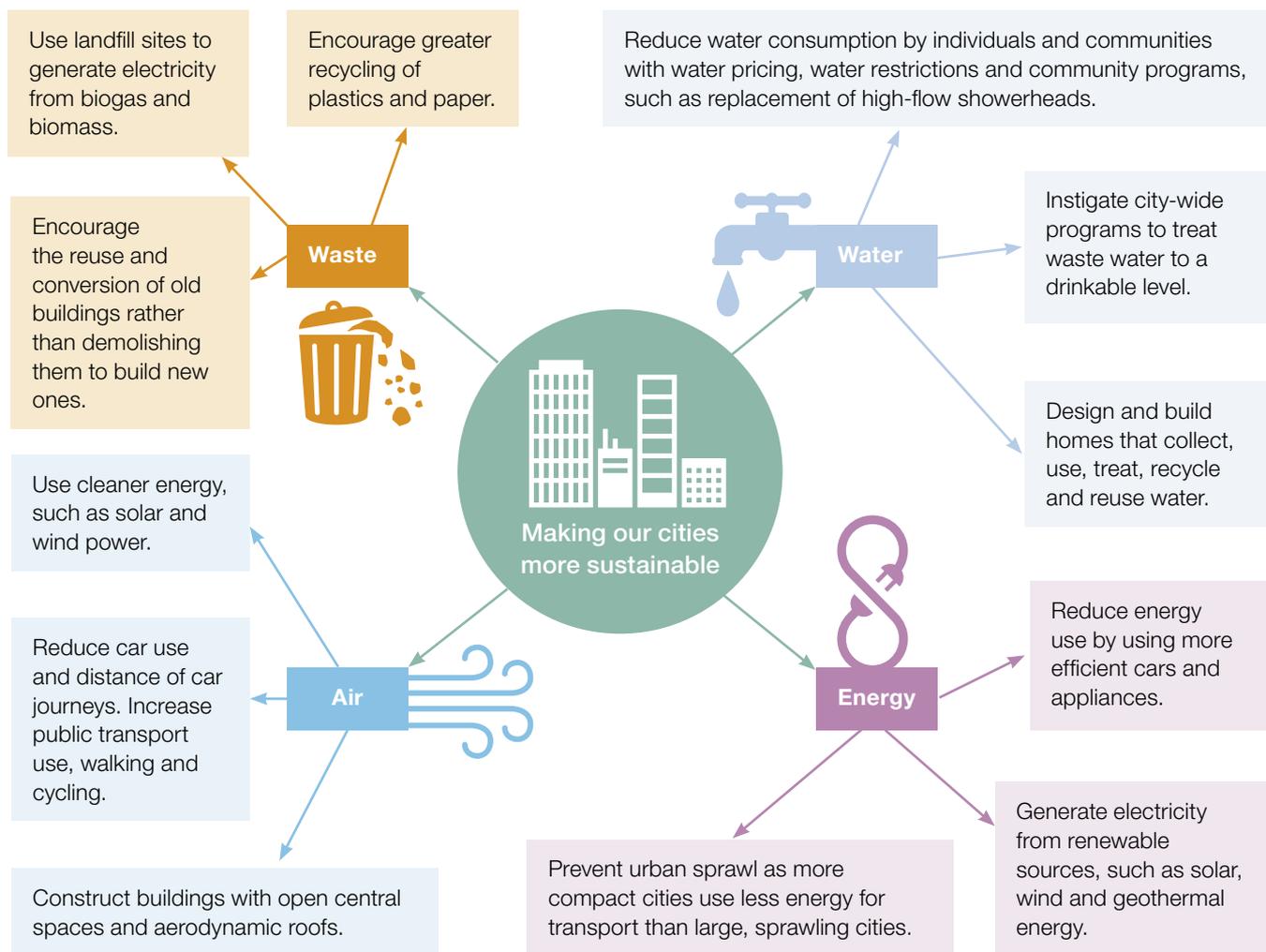
4.11 Improving sustainability

The quality of the environment has a big effect on the liveability of a place. Cities consume large amounts of **natural resources**, such as water and energy. They also produce substances that are harmful to the environment, such as **greenhouse gases**, as well as solid waste, such as sewage and rubbish. Rapidly growing cities in developing countries are struggling to deal with these and other environmental issues.

In the last decade, Australian cities have become more sustainable by reducing their impact on the environment in many significant ways. We now use less energy, produce less rubbish, consume less

water and have cleaner air than was the case at the beginning of this century. This is largely due to new technologies in such things as power stations and the phasing out of old technologies such as less efficient cars that pollute more.

There have also been changes in behaviour that have been encouraged by governments. City dwellers, for example, now take for granted that recyclable material is not waste and should be separated out in the weekly rubbish collection. Local restrictions on the use of water in households have also helped to make our cities more sustainable. But there is still much more that can be done.



Source 1 Concept map showing strategies for a more sustainable city

keyconcept: Sustainability

Clearing the air in Launceston

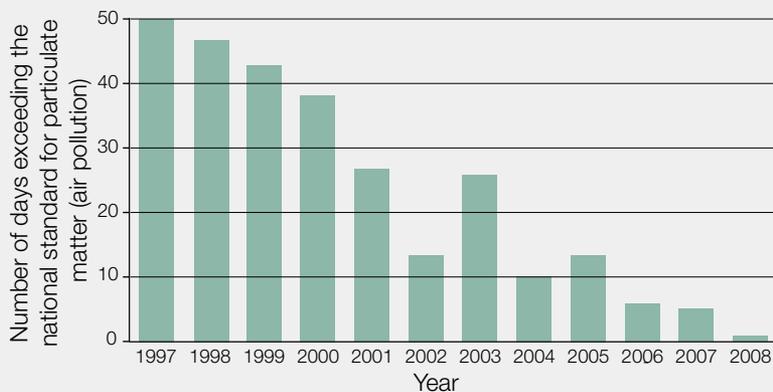
The city of Launceston in northern Tasmania was once one of Australia's most polluted cities. This was due to a combination of natural processes and human activities. About two-thirds of households in the early 1990s used wood fires to heat their homes and this produced large quantities of smoke, particularly during winter. Launceston's location in a valley meant that the smoke was trapped and people's health began to suffer. Researchers linked Launceston's smoke to high rates of asthma and lung disease and likened it to the effects of tobacco smoking.

In 1997 there were 50 days in which Launceston's air exceeded the national standard for the amount of pollution. By 2008, this had fallen to only one day a year. The result on this day was due not to wood heaters but to a nearby bushfire. This dramatic change is largely because of a government scheme where Launceston residents were given \$500 to change their home heating from wood fires to other methods, such as a gas fire or electric heater. More than 2000 residents have so far taken advantage of the scheme and thousands of others have changed their heating methods because of the publicity generated.

For more information on the key concept of sustainability, refer to page 9 in 'The geography toolkit'.



Source 2 The hills that surround Launceston trapped wood smoke, making it one of the world's most polluted cities.



Source 3 Air pollution in Launceston, 1997–2008

Check your learning 4.11

Remember and understand

- 1 Why did Launceston have such poor air quality?
- 2 How did the people of Launceston improve their air quality?

Apply and analyse

- 3 Solutions to some of the environmental problems faced by city dwellers can be easy to find but hard to put into place. Give some examples of solutions that have been difficult to put into place.
- 4 Select one of the four environmental issues shown in Source 1.
 - a Explain why this is an issue in cities.
 - b Which of the three solutions given do you think has the best chance of helping to address the issue?
 - c Can you think of two more solutions? Share these with your classmates and use the discussion to describe how cities can be made more sustainable.
- 5 Examine Source 3.
 - a Describe the change in air pollution in Launceston from 1997 to 2008.
 - b Give a possible reason for the sudden increase in pollution in 2003.

Evaluate and create

- 6 Cities are one of the main causes of global climate change as much of the gas that traps heat comes from burning **fossil fuels** in cities. In a small group discuss how cities can lead the way in reducing the emission of these gases.

4.12 Improving spaces for wildlife

When planning to improve the liveability of places for people, it is important to also consider the impacts this has on the habitats of native wildlife. Koalas are one of Australia's most loved native animals, but despite this their future in many parts of Australia is very uncertain. As bushland on the edges of our towns and cities is cleared for farms and houses, koalas are losing their habitats. Improving the liveability of these places for people is having negative effects on the liveability of the same places for koalas.

Habitats suitable for koalas are made up of trees that serve three main functions:

- food – koalas rely on certain types of native gum trees for the food they eat; these only grow in certain parts of the country
- shelter – as well as providing food, trees provide koalas with protection from the weather and predators, such as domestic dogs
- corridors – these are spaces that link the areas of bushland where koalas live; they allow koalas to move between trees; the more small trees and shrubs there are growing in these corridors, the easier it is for koalas to move about without coming down to ground level where it is dangerous for them.

Over 80 per cent of the total habitat in Australia that was once suitable for koalas has now been cleared. Much of the remaining 20 per cent is also under threat from people. Because it is difficult to get accurate numbers of koala populations at any one time, geographers divide possible koala habitats into areas where populations are most common to least common. This gives them a good idea of where they most need to focus their efforts to conserve koala populations (see Source 3).

As well as losing their habitat, koalas face many dangers due to the expansion of our cities. Each year, many koalas are hit by cars as they move between sections of bushland. Many others are attacked and

killed by domestic dogs. The recorded deaths of koalas in south-eastern Queensland over a 10-year period can be seen in Source 2.

| Year | Dog attacks | Cars | Disease | Other | Total deaths |
|---------------|-------------|--------------|--------------|--------------|---------------|
| 2001 | 114 | 324 | 303 | 488 | 1 229 |
| 2002 | 103 | 342 | 245 | 454 | 1 144 |
| 2003 | 94 | 342 | 180 | 558 | 1 174 |
| 2004 | 68 | 333 | 238 | 529 | 1 168 |
| 2005 | 60 | 234 | 262 | 410 | 966 |
| 2006 | 69 | 280 | 193 | 513 | 1 055 |
| 2007 | 68 | 287 | 179 | 678 | 1 212 |
| 2008 | 58 | 296 | 256 | 532 | 1 142 |
| 2009 | 76 | 248 | 210 | 738 | 1 272 |
| 2010 | 67 | 246 | 131 | 655 | 1 099 |
| Totals | 872 | 3 243 | 2 647 | 5 998 | 12 760 |

Source 2 Recorded deaths of koalas in south-eastern Queensland (including causes)

Source: Queensland Department of Environment and Resource Management, 2011

Strategies to protect koalas

There are a number of strategies that we can implement to protect koalas and their habitat, despite the expansion of urban areas. The first, and most effective, strategy is to protect key koala habitats (and corridors) from future urban development. Conservationists are constantly lobbying councils and governments in order to protect areas like this. In many cases, however, cities and suburbs have already been built over koala habitat.



Source 1 Koalas often return to trees they consider their territory even if the tree is now in somebody's front yard.

In these cases, there are a number of actions that can be taken to protect koala populations in the area:

- preserve and protect existing eucalyptus trees and plant additional trees
- plant trees and shrubs (such as wattles) for koalas to use as shelter
- protect koala corridors and plant smaller trees and shrubs in these areas
- erect koala-friendly fencing that koalas can easily climb over, through or under, allowing them to move around their habitat
- erect road signs warning of koalas, and lower speed limits on roads used by koalas to cross between areas of bushland
- keep domestic dogs separated from koalas by erecting fenced enclosures (called dog runs).



Source 4 A young koala hit by a car is bundled into a blanket by a member of the Moreton Bay Koala Rescue team north of Brisbane.

EASTERN AUSTRALIA: KOALA HABITAT AND POPULATIONS



Source 3

Source: Oxford University Press

Check your learning 4.12

- 1 As new homes and farms are built on the edges of our cities, how are koala habitats affected?
- 2 How much of the koala's original habitat in Australia has been destroyed?
- 3 What are the three ways in which koalas use trees and shrubs in their habitats?
- 4 List three strategies that can be used to help protect koalas and their habitats.

Apply and analyse

- 5 Look carefully at Source 3.
 - a Where do koala habitats and populations tend to be?
 - b What connection is there between the capital cities on the map and koala habitats?
- 6 Using the data provided in Source 2 determine:
 - a the total number of koalas killed by cars in south-eastern Queensland between 2001 and 2010.
 - b What percentage is this of the total number of koalas that died over the same period?
 - c The leading cause of death among koalas is shown as 'Other'. Provide three causes of death you think would be included in this category.

Evaluate and create

- 7 Prepare a media campaign to raise community awareness about the dangers facing koalas in Australia. You may choose to prepare a poster or a multimedia presentation warning people of the dangers facing koalas or provide some key strategies that people can implement to protect koalas living near their homes. Create a catchy slogan for people to remember your campaign.

4.13 Connecting through communities

A community is a group of people who share something in common. It may be the place in which they live, their religion, their interests or hobbies, their **ethnicity**, their school or their language. Every person on Earth is a member of one or more communities, some by choice and some just by being who they are. To make sense of all the world's communities, geographers take into account the features that all members of a community share. One way to classify these features uses the five Ps shown in Source 1.

A group of people who share the same goals and objectives often join together to form communities of purpose. They are able to achieve much more if they work together than if they work as individuals. One of Australia's largest communities of purpose is Surf Life Saving Australia (SLSA), which has over 150 000 members, virtually all of whom are volunteers. The shared vision of SLSA members is 'to save lives, create great Australians and build better communities'.



Source 1 Classifying communities



Source 2 Surf lifesavers making one of the many rescues carried out every year – they are an example of a community of purpose.

Check your learning 4.13

Remember and understand

1 What type of community is a school?

Apply and analyse

- 2 Explain why SLSA can be considered to be a community of purpose.
- 3 Name three other communities of purpose.
- 4 Classify each of these groups under one of the five types of communities:

- a the Labor Party
 - b employees of BHP Billiton
 - c residents of Yamba in New South Wales
 - d a Scout group
 - e your family.
- 5 The surf lifesavers in Source 2 are members of a community of purpose. Why is it likely that they are also members of a community of place?

skilldrill

Drawing a concept map

A **concept map** is a visual tool used to show the links between different ideas or pieces of information. Each idea (or piece of information) is usually represented in a circle or box and the relationship between two ideas is shown by a line or arrow connecting them. Words on the line or arrow explain the relationship between the two ideas. Concept maps can be hand drawn or prepared using computer software.

To draw a concept map, follow these steps:

Step 1 Draw and name the focus, central idea or main problem you are trying to explore. In the example in Source 3, this is 'My communities'.

Step 2 Build the concept map by adding ideas related to the central idea.

Step 3 Add a title to help the reader quickly understand your concept map.

Apply the skill

- 1 Construct your own concept map to show the communities you are connected to. Place your name in the centre box. Add the types of communities to the connecting lines. Choose from the five types of communities shown in Source 1, such as place.



Source 3 An example of a concept map

4.14 Liveability in communities

A community of place refers to a group of people with a common interest or goal. This common interest may be linked to where they live, work or spend a large part of their time. The word community can be used to describe groups like neighbourhoods, towns, workplaces, schools, sports clubs, church groups, or very large groups like members of the same religion or citizens of the same country.

People connect with places where they feel included and safe. They connect through community services (such as schools, hospitals and libraries), job opportunities (such as the type and amount of work available) and entertainment and recreation (such as concerts, sporting events and festivals).

Check your learning 4.14

Remember and understand

- 1 What is a community of place?
- 2 How is the liveability of a community measured?

Apply and analyse

- 3 Use Source 2 to provide a grid reference for:
 - a a recreation facility
 - b a transport hub
 - c a source of employment
 - d an education facility.
- 4 Bunbury is largely populated by families. What evidence can you find using Sources 1 and 2 that the local community is made up of many families?

Community services

We are all part of a broad community based on where we live. This may be a suburb in a city, a town or a small settlement, but it can even be as big as a whole country. Governments and local councils supply a range of services to these communities, such as schools, hospitals, libraries, transport, parks and rubbish removal. Different communities require different services. For example, a community with a younger population might require more schools and facilities such as skate parks. An older community might require greater access to health care and retirement villages.

Job opportunities

Local communities provide employment opportunities or good access to places of work, training and education. Businesses and industries, as well as providing services for the community, also provide jobs. Some examples of businesses found in many local communities include shops, hairdressers, plumbers, banks and solicitors. An industry may be a one-person operation or a large manufacturing business that employs hundreds of people. Industrial areas are usually grouped together. Industries generally require large areas of flat land and access to power, transport and parts.

Entertainment and recreation

Leisure facilities such as basketball courts and skate parks are provided and maintained by local councils. Special areas are also set aside for recreation, such as parklands and sporting fields. These areas allow residents to socialise and exercise outdoors. In addition to these recreation areas, special conservation zones are set up by councils to ensure that native plants and wildlife are protected.



Source 1 Bunbury's centre provides community services, job opportunities, and recreation facilities to residents.

Source: Stockimage WA



Source 2 Street directory map of Bunbury

Source: Oxford University Press

4B rich task

Hamburg – a green city

The city of Hamburg in Germany is one of the most environmentally friendly cities in the world. Green spaces, parks, woodlands and nature reserves make up 16.7 per cent of the urban area and 17 per cent of the city's total power usage comes from renewable sources like wind and solar. Hamburg is one of the 20 most liveable cities in the world and, in 2011, was named European Green Capital.

Hamburg is currently building an inner-city development called HafenCity in the location of the old port warehouses. HafenCity will provide housing for 12 000 residents and jobs for around 45 000 people. It will create 10.5 kilometres of new waterfront and 26 hectares of public parks, squares and promenades.

The HafenCity community will use 30 per cent less power thanks to environmentally friendly design and materials and wind and solar-power technologies. Many rooftops will be covered in greenery to slow stormwater run-off and reduce heat from the development.

skilldrill

Interpreting oblique aerial images

The photograph and illustrated plan provided are both what geographers call oblique aerial images. Oblique aerial images are taken on an angle from a high point. They can be taken looking down from a hill or mountain, or from an aircraft or hot-air balloon. Oblique aerial images are useful for geographers because they can show a much larger area than photographs taken from ground level (known as ground-level images) because the view is not interrupted by trees, houses or mountains. They are also useful because all of the features shown in them are easily recognisable. This is not always the case with images taken from directly above (known as vertical images or 'plan view' images).

When interpreting oblique aerial images, it is important to be aware of the following points:

- Oblique aerial images allow you to see the height and width of features on the ground. As a result it is possible to get an idea of the steepness of the ground or the height of a building.
- A major disadvantage of an oblique aerial image is that scale is inconsistent. This means that distances in the foreground and distances in the background cannot be calculated using the same scale. If you want to make a map or take accurate measurements of distance, you should not use oblique aerial images. Use vertical images instead that show the area in plan view.



Source 1 An oblique aerial photograph of the HafenCity development in Hamburg, Germany. It will be Europe's largest inner-city development project.

Apply the skill

- 1 Examine the photograph of HafenCity shown in Source 1.
 - a Are the buildings in HafenCity (in the foreground) generally lower or higher than those in the background? How can you tell?
 - b Would the width of the channel behind HafenCity be easier to measure on a plan or oblique view?

Extend your understanding

Conduct some research on the Internet to find out more about the HafenCity development in Hamburg.

- 1 In what year was the project first announced?
- 2 When do the developers estimate the project will be completed?

- 3 How many homes will HafenCity contain once the project is complete?
- 4 Find some images of the HafenCity site before it was developed and compare them with Source 2.
 - a In what ways has the HafenCity site changed since development began?
 - b How has the HafenCity development improved the liveability of the city of Hamburg?
 - c HafenCity has been designed to be highly sustainable – using environmentally friendly building materials and wind and solar power. Using Source 1 on page 150, suggest three more ideas that could be introduced to improve the sustainability of HafenCity.



Source 2 A computer-generated plan of HafenCity from an oblique aerial view

part

2



history

Concepts and skills

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Concepts and skills

The history toolkit

History is the study of the past. Historians are interested in all aspects of the past and seek to piece together accurate pictures of what life was like in days gone by.

Historians are time detectives; they follow a process of **historical inquiry** in order to better understand the past. They ask questions, locate and analyse **sources**, and use **evidence** from these sources to develop theories about the past.

Historians are curious. They investigate **artefacts** and want to know more about them.

Despite these investigations, certain facts about many ancient artefacts still remain a mystery. Uncovering the secrets of the past is not always easy and historians do not always agree. These mysteries drive historians to continue their important work.



5A

What are the historical concepts?

5B

What are the historical skills?



Source 1 Many facts about the Great Sphinx at Giza in Egypt remain a mystery.

5.1 Historical concepts

Historians use seven concepts to help them investigate and understand the past. At times you will use several of these concepts at once; at other times you may focus on just one. As you learn to apply each concept, you will begin to think like a historian. The seven key concepts in History are:

- perspectives
- continuity and change
- cause and effect
- evidence
- empathy
- significance
- contestability.

Perspectives

The concept of perspectives is an important part of historical inquiry. Perspective is a point of view – the position from which people see and understand events going on in the world around them. People will have had different points of view (or perspectives) about a particular event, person, **civilisation** or artefact depending on their age, gender, social position and their beliefs and **values**. Just like anyone else, historians have perspectives, which can influence their interpretation of the past and the way in which they write about it. Despite their own perspectives, historians must try to understand the different values and beliefs that shaped and affected the lives of people who lived in the past.

For example, many people today would share the belief that slavery is wrong. They would be shocked and outraged by the fact that about one quarter of the population of ancient Rome were slaves. However, slavery was an accepted part of life in ancient Rome, from the perspectives of slaves themselves and society in general. Today, a logical assumption is that slaves led poor lives just because they were slaves. This was not always the case. Some masters took great care of their good slaves, as replacements could be hard to find – and expensive. A slave who could cook banquets was especially prized because entertaining was very important to Rome's elite families. Those slaves who had few skills were less well looked after because they were easier and cheaper to replace.

It is important to consider aspects of the past from the perspectives of people living at the time. By taking this into account you begin to see that owning slaves was a natural part of life in ancient Rome rather than a terrible abuse of a person's rights and freedoms. By today's standards it could be considered similar to employing a cleaner or a babysitter to help out around the house.



Source 1 This Roman floor mosaic shows a young slave carrying a tray of food for a banquet. It dates back to around the 2nd century CE.

Continuity and change

Historians recognise that over time some things stay the same, while others change. This concept is referred to as continuity and change. Examples of continuity and change can be seen across every civilisation and any given period of time.

Historians refer to aspects of the past that have remained the same over time as continuities. Aspects of the past that do not stay the same are referred to as changes. Change can occur within a certain civilisation or specific time period, but also across different civilisations and time periods.

Many historical continuities influence how we act and live today. For example, look at Source 2. You will instantly be able to tell what this man is doing. Discus throwing is an ancient sport that dates back to the 5th century BCE. The sport originated in ancient Greece, but is now a routine part of every modern track-and-field competition, not to mention a popular event at the Olympic Games. Discus throwing is a good example of a historical continuity.

Now look at Sources 2 and 3 together and try to identify some of the differences between them. Even though both people are shown competing in discus throwing:

- one is a man, the other is a woman
- one is naked, the other is wearing clothes
- the ancient discus is larger than the modern discus.

These differences are historical changes. In ancient Greece only men were allowed to compete, they were required to compete naked, and the technique and equipment (the discuses) they used were not as sophisticated as those used today.



Source 2 This statue created by the Romans in the 2nd century BCE is a reproduction of a famous Greek statue, Myron's *Discobolus*, created around 460–450 BCE. It shows a discus thrower about to release his throw.



Source 3 Dani Samuels of Australia competes in the Women's Discus Throw Final on Day 8 of the London 2012 Olympic Games.

Cause and effect

The concept of cause and effect is used by historians to identify chains of events and developments, both in the short term and in the long term. Cause and effect aims to identify, examine and analyse the reasons why events have occurred and the resulting consequences or outcomes. It helps to think of cause and effect as the 'why' and 'what' of history.

Sometimes the link between cause and effect is very clear. For example, heavy rain over many weeks (cause) leads to flooding and the destruction of crops (effect). However, often this link is not quite so obvious. Generally, there are many causes (reasons) that lead to an event or action. There can also be many effects (outcomes). Sometimes the effects are simple to identify, while in other cases they are more difficult to predict and may not even be observed until long after the event.

One of the strongest defensive structures in the world is the Great Wall of China. It is also a good example for explaining cause and effect. The Great Wall began as a set of separate mudbrick structures that were joined together and extended under the rule of China's first **emperor**, Qin Shi Huang. This work was carried out in order to prevent northern invaders (known as Mongols) from entering and conquering China (cause). The wall was successful in preventing a Mongol invasion (effect); however, over 100 000 Chinese labourers died during the construction of the wall (effect). Today, the Great Wall is China's most popular tourist attraction, drawing around 10 million people each year (effect).



Source 4 The Great Wall of China was built to protect China from invading hordes of Mongols. This was the cause of its construction.



Source 5 Today, thousands of years after its construction, the Great Wall is so popular with tourists that sections of it are in danger of being damaged by overuse. Could Emperor Qin Shi Huang ever have predicted these effects when he ordered the Great Wall to be built?

Evidence

Evidence is the information gathered from historical sources. The concept of evidence is an essential part of historical inquiry. Evidence can come from many different sources; for example, interviews and accounts from people who lived at the time, letters, diaries, films, maps, newspapers, artefacts and objects, buildings, paintings, photographs, song lyrics, nursery rhymes, clothing, photographs and even cartoons. But how do we use these sources to piece together the story of the past? We can make an educated guess (called a **hypothesis**) and then look for evidence to support it.

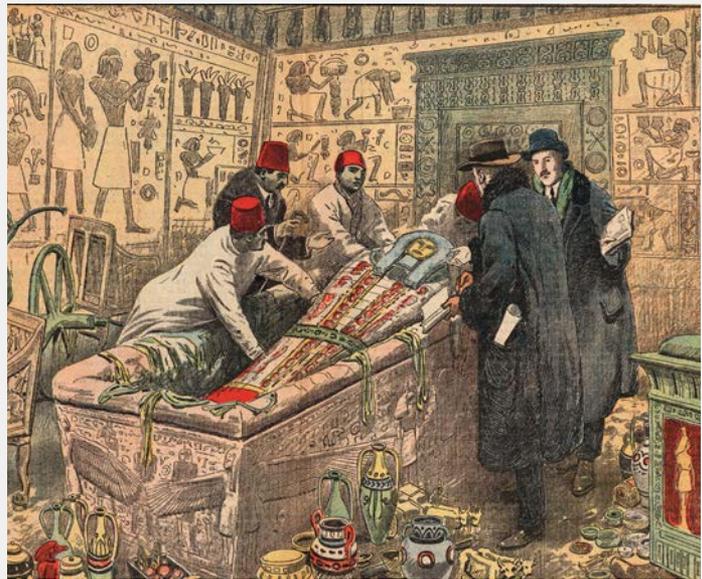
Evidence can be gathered from two types of sources:

- **primary sources** – objects created or written at the time being investigated, for example during an event or very soon after. Examples of primary sources include: official documents, such as laws and treaties; personal documents, such as diaries and letters; photographs or films; and documentaries. These original, firsthand accounts are analysed by historians to answer questions about the past.
- **secondary sources** – accounts about the past that were created after the time being investigated and which often use or refer to primary sources and present a particular interpretation. Examples of secondary sources include writings of historians, encyclopaedia entries, documentaries, history textbooks and websites.

Historians do not always agree on evidence, even when it is gathered from the same source. They often have different opinions or points of view. This is why historians are constantly searching for new sources of evidence. They need to use a range of different sources to help them gain a more complete picture of the past.



Source 6 This photograph taken in 1922 shows British archaeologist Howard Carter leaving the tomb of Tutankhamun. He is holding a box of artefacts made by ancient Egyptians. Both the artefacts shown in the photograph and the photograph itself are primary sources because the artefacts were made during the rule of the ancient Egyptians and the photograph was taken at the time of the discovery of the tomb.



Source 7 This illustration shows Howard Carter inside the tomb of Tutankhamun. The illustration is a secondary source because it was drawn by an artist long after the discovery of the tomb in 1922. It is only a representation of the inside of Tutankhamun's tomb, even though it is based on a photograph taken at the time of its discovery.

Empathy

Empathy helps us to understand the impact of past events on a particular individual or group, including an appreciation of the circumstances they faced and the motivations, values and attitudes behind their actions. Put another way, empathy is the ability to ‘walk in someone else’s shoes’ – to be aware of, and sensitive to, their feelings, thoughts and experiences.

Emphathising brings history to life. It connects us as human beings regardless of how much time has passed. For example, the ancient Chinese custom of foot binding can be better understood by putting yourself in the position of those who did it and had it done to them. Foot binding was designed to improve a woman’s social status and the status of her family. Tiny feet were considered beautiful and improved a woman’s chances of securing a ‘good’ marriage.

Binding the feet prevented them from growing naturally. When a girl was between the ages of four and seven, the bones in her feet were broken and strapped tightly with a long bandage, forcing the four small toes under the sole of the foot (see Source 8). The entire process usually took about two years to complete. After this time, the feet were largely useless. Walking was at best painful and at worst impossible. After this process, the feet needed daily care. If they were not washed and manicured properly, the toenails could cut into the soles of the feet and cause infection. If the bindings were too tight, they could cut off blood flow and cause the flesh to rot.

It is difficult to imagine how much pain these women, and their families, had to go through, but the Chinese saying ‘Every pair of small feet costs a bath of tears’ gives some insight. Why then did people carry out the practice for so long? Even though many lower-class families could not afford to bind their daughters’ feet (because they needed them to work in the fields), they did so anyway in the hope that they would be able to marry into the middle class. In reality, very few women succeeded in this. Instead, these women would end up suffering as they tried to work in the fields on their bound feet. Nevertheless, mothers were

obligated to bind their daughters’ feet because they would never find a husband otherwise. Applying the concept of empathy helps you to put yourself in the position of the girls who had this done to them, as well as their families who were essentially forced to inflict terrible pain on their own children.



Source 8 The practice of foot binding was carried out for around 1000 years. Applying the concept of empathy helps us to understand the pain these women went through, and what motivated their families to do this.



Source 9 These women, photographed in 1998, wear tiny ‘lotus shoes’ on their bound feet. Foot binding was officially outlawed in 1911, but is said to have continued for some time after that.

Significance

The concept of significance relates to the importance assigned to aspects of the past, such as events, developments, discoveries, movements, people and historical sites. History is full of so many important events, significant people and interesting places that we could never study all of them. Instead, we need to make a judgement about which of these is worthy of study. In order to determine if an event, development, discovery, movement, person or site is historically significant, historians may ask the following questions:

- How important was this to people who lived at that time?
- How did this affect people's lives?
- How many people's lives were affected?
- How widespread and long-lasting were the effects?
- Can the effects still be felt today?

Depending on your age, gender, ethnicity, religious beliefs, nationality and family background, different events and people from the past will be significant to a greater or lesser extent. For example, the development and spread of the Roman **Empire** is significant because it affected large areas of the Mediterranean world, its people and their way of life.

Some of the legacies of ancient Rome that are still significant today include:

- **Latin** – the language of ancient Rome forms the basis of many modern languages such as English, French, Italian and German
- **aqueducts** – these structures built to carry fresh water from springs in the country to Roman cities form the basis of our modern plumbing
- **architecture** – ancient Romans invented concrete and other innovative building techniques such as domed roofs.



Source 10 This Roman aqueduct in the south of France was built between 40 and 60 CE. Aqueducts carried a constant flow of fresh water from distant sources into cities and towns, supplying public baths, public toilets, fountains and private households. Aqueducts form the basis of our modern plumbing.



Source 11 Domed roofs, like the one shown here at Flinders Street Station in Melbourne, would not be possible had it not been for the ancient Romans.

Contestability

The concept of contestability relates to explanations or interpretations of past events that are open to debate. Historians around the world often have access to very different sources. Artefacts, such as cave paintings or artworks, may have been damaged or incomplete. Written records may contain errors, or have been changed or falsified after they were written. Some artefacts may even have been destroyed forever. This can lead historians to different conclusions about what they are seeing. Even historians studying the same sources can sometimes come to widely different conclusions about what the evidence is telling them. This is one of the exciting things about history – it is open to debate. There is often no right answer, and historians are always seeking a more complete understanding of the past.

The discovery of Tutankhamun's tomb in 1922 was a highly significant historical event. It helped historians uncover many important details about life in ancient Egypt, but also ignited fierce debate. An examination of the **pharaoh's** mummified body led historians and archaeologists to argue for many decades about the cause of Tutankhamun's death. Many believed that the boy king had been murdered. Others believed his death was accidental. It was not until modern scientific methods allowed for a proper examination of the corpse that it was decided that Tutankhamun had died as a result of an infection from a broken leg. DNA analysis conducted in 2010 also showed the presence of malaria in his system. It is believed that these two conditions combined led to his death. To this day, some historians still contest the accepted explanation.





Source 12 Egyptian archaeologists supervise the removal of Tutankhamun's **mummy** from the stone sarcophagus in his underground tomb in the **Valley of the Kings** in Luxor, Egypt. The exact cause of Tutankhamun's death has been contested by historians since the discovery of his tomb in 1922.



Source 13 The use of modern CT scans and DNA analysis in 2010 have finally put an end to decades of debate. These tests have allowed historians to say with some certainty how Tutankhamun died.

Check your learning 5.1

Remember and understand

- 1 Name the two different sources from which historians may gather evidence.
- 2 Discuss throwing is still an important event in the modern Olympic Games. What historical concept would this be an example of?
- 3 A study of the past always involves looking at why an event took place and what happened as a result. What is the name of this historical concept?
- 4 Five different people saw a fight in the schoolyard. Why might their accounts of what happened be quite different? What historical concept would this be an example of?

Apply and analyse

- 5 Look again at the questions that help historians decide which events from the past are worthy of study (see page 169 of 'The history toolkit'). Working in pairs or small groups, use those questions to decide if the following events are historically significant.
 - Your family moved to a new house last week.
 - A new shopping centre was built in your local area.
 - The prime minister of Australia gave a speech declaring Australia will allow China to build a military base in Sydney.
 - The Olympic Games were held in London.
 - News reports confirmed that over half the world's population is connected to the Internet.

Report your findings to the class. Did each group reach the same conclusions? Why or why not?

- 6 Historians are constantly trying to understand what motivated people from the past to act the way they did. This relates to the historical concept of empathy. Look at the example of foot binding in ancient China. Imagine you are the parent of a four-year-old girl. List three reasons why you believe you must bind your daughter's feet. Beside each reason, write how this would make you feel.
- 7 Why did Egyptian archaeologists use scientific methods to examine the mummy of Tutankhamun? Do you think all historians would accept these findings? Why or why not?

Evaluate and create

- 8 You are planning a museum exhibit about your own life. Choose three artefacts you will include in the display. Explain how each of these artefacts has played a significant part in your life.
- 9 Look again at the Great Sphinx (Source 1 on pages 162–163). Conduct your own research and formulate your own hypothesis (theory) about why it was built. Support your hypothesis with one primary and one secondary source.
- 10 Choose one of the key concepts discussed in this section. Design a poster for your History classroom to help you and your classmates remember what this concept is and to help you apply it as you study History this year.

5.2 Historical skills

History has been described as ‘who we are and why we are the way we are’. Historians examine the past and try to explain what they find. Like detectives at the scene of a crime, they follow a process of historical inquiry.

As shown in Source 1, there are four stages in any historical inquiry. They are:

- 1 Questioning and researching
- 2 Analysing
- 3 Evaluating
- 4 Communicating and reflecting

To conduct a historical inquiry, historians need a range of skills. By studying history you will gradually master each of these skills. Some of them you will find easy to master, others may take a little longer. As you develop each new skill you will have gained another important tool for understanding and explaining events and people that have shaped our world.

Each of the skills you will learn over the course of this year is explained below. Each one represents a stage in the process of historical inquiry. These skills are organised into five stages. Each stage has a number of specific skills that you will be learning. It might help you to think of each of these skills as individual tools in your toolkit. For some historical inquiries, you may only need to use one tool; for others, you may need to use many.



Source 1 There are four stages in any historical inquiry. At each stage, historians use a number of different skills. Each of these skills is like a tool in a toolkit.

5.3 Questioning and researching

Identifying a range of questions about the past to inform a historical inquiry

Historians begin any historical inquiry by asking big questions. From these big questions, historians develop a hypothesis (a theory) about who, what, where and why certain events took place. These questions then help to frame the process of inquiry and act as a guide for the collection of evidence.



What is the Great Sphinx made of?
What is the Great Sphinx doing here?
How long has the Great Sphinx been here?
What is the Great Sphinx supposed to be?
Why is the Great Sphinx important?
Who built the Great Sphinx?

Source 1 Developing historical questions is an important part of a historical inquiry.

skilldrill

Generating questions to inform a historical inquiry

Look closely at Source 1. This visitor to the Great Sphinx at Giza in Egypt is asking some important historical inquiry questions. You can learn to do this too by starting your questions with the words 'what', 'where', 'how', 'when' and 'why' before beginning your inquiry.

For example, big questions such as the following help to guide the steps in the research process:

- What is the Great Sphinx?
- Who built it?
- When was it built?

The very best questions open up an exciting area for you to explore. For example, the visitor might ask a simple question, such as 'What does the Sphinx look like?' This is a question with a relatively simple answer. A better historical question for the visitor to ask might be 'What is the Sphinx meant to represent?' This question opens up a whole new area for exploration.

Apply the skill

- 1 Based on what you have read and seen, generate four big questions of your own that will help guide your investigation into the Great Sphinx.
- 2 Once you have generated your inquiry questions, identify the information you will need to answer these questions and where you might be able to locate it.
- 3 The mystery of the Great Sphinx has puzzled historians for many years. Are there any questions for which you have not been able to find reliable evidence or answers? What reasons might there be for this?

Identifying and locating relevant sources, using ICT and other methods

Sources provide information for historians. They can take many different forms, from historical artefacts to written records in books or online. Some examples of sources include human remains, coins, cave paintings, textbooks, journals, online databases, newspapers, letters, cartoons and diaries.

Locating a range of relevant sources is a valuable skill, which usually involves a number of different search methods, such as:

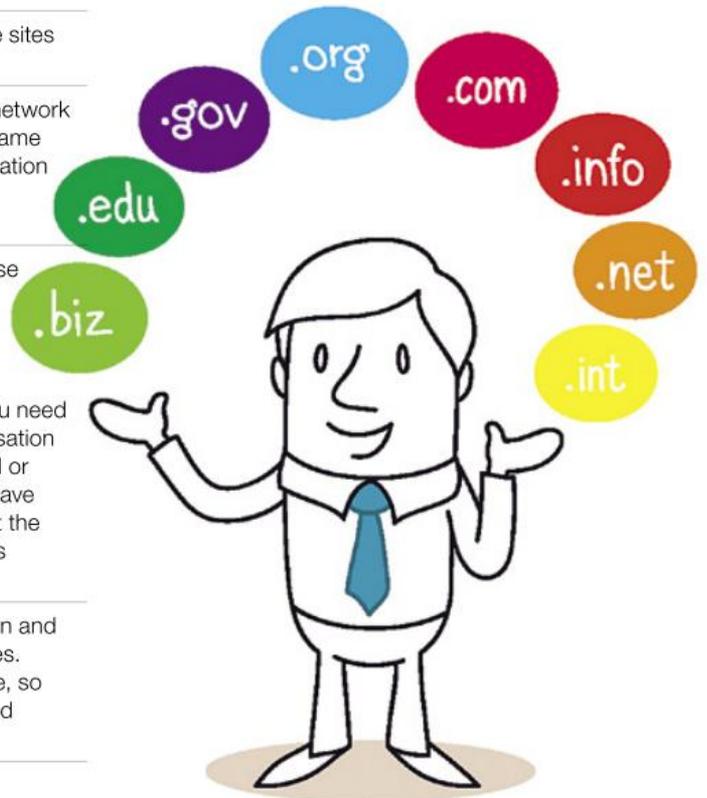
- checking catalogues at your school and local library
- using online search engines such as Google, Yahoo! and Bing
- visiting museum and government websites
- looking at newspaper and magazine archives
- contacting local historical societies
- interviewing older family members about the past, and examining family antiques and keepsakes.

Using ICT to locate relevant sources

Although printed books and newspapers are valuable sources of information, most research today is conducted online. In order to ensure that sources gathered online are accurate, reliable and relevant, a number of guidelines should be followed:

- Search engines such as Google are useful research tools, but much of the material on these sites is not reliable and may contain inaccuracies, false and misleading information or material that is out of date. When using search engines like Google or Yahoo!, be sure to define your search using keywords. Your librarian is a good person to ask for help and information. Most schools will also have a website devoted to providing information about developing good research skills.

| Domain name | Description |
|-------------|---|
| .edu | The site is linked to an educational institution such as a university or school. These sites are generally very reliable. |
| .gov | The site is linked to a government institution. These sites are generally very reliable. |
| .net | This site is linked to a commercial organisation or network provider. Anyone is able to purchase this domain name and generally there is no one to regulate the information posted on the site. As a result, these sites may be unreliable. |
| .org | This site is linked to an organisation. Generally, these organisations are not for profit (e.g. Greenpeace, World Vision International, British Museum). If the organisation is reputable and can be contacted, it generally means that the information provided has been checked and verified by that organisation. You need to be aware of any special interests that the organisation may represent (e.g. particular religious, commercial or political interests) as this may influence what they have to say on a particular issue. If you are unsure about the reliability of information found on a website with this domain name, check with your teacher or librarian. |
| .com | This site is linked to a commercially based operation and is likely to be promoting certain products or services. These domain names can be purchased by anyone, so the content should be carefully checked and verified using another, more reliable source. |



Source 2 Some domain names and their characteristics

- A reliable way of searching for sources is to use sites linked to educational institutions, government departments, reputable companies, museums, universities and educational institutions. A quick way of telling if a site is reputable is to look at the domain name in the URL (Internet address). Some of the most common domain names are listed in Source 2 along with some information about their reliability.
- Avoid blogs posted by unknown individuals. If you happen to find information relevant to your investigation on a blog or social media site, always verify it by using a more reliable source.
- Never cut and paste information from the Internet straight into your own work. Taking someone else's work, ideas or words and using them as if they were your own is called plagiarism and can result in very serious consequences.

Recording relevant sources

As you identify and locate relevant sources, it is essential that you record details to include in your list of references or bibliography.

When citing (mentioning) a book in a bibliography, include the following, in this order, if available:

- 1 author surname(s) and initial(s)
- 2 year of publication
- 3 title of book (in italics)
- 4 edition (if relevant)
- 5 publisher
- 6 place of publication
- 7 page number(s).

Example:

Easton, M. & Saldais, M., 2016, *Oxford Big Ideas Humanities and Social Sciences 7 Western Australian Curriculum*, Oxford University Press, Melbourne, pp. 18–19.

When citing an online source in a bibliography include the following information, if available:

- 1 author surname(s) and initial(s) or organisation name
- 2 year of publication or date of web page (last update)
- 3 title of document (article) enclosed in quotation marks
- 4 date of posting
- 5 organisation name (if different from above)
- 6 date you accessed the site
- 7 URL or web address enclosed in angle brackets <...>.

Examples:

British Museum, 'Papyrus from the Book of the Dead of Ani', accessed 6 September 2012, <www.britishmuseum.org/explore/highlights/highlight_objects/aes/p/book_of_the_dead_of_ani.aspx>.

Williams, A.R., 2005, 'King Tut Revealed: Modern forensics and high-tech imaging offer new insights into his life – and death', June, National Geographic, accessed 17 July 2012, <<http://ngm.nationalgeographic.com/2005/06/king-tut/williams-text>>.

Identifying the origin and purpose of primary and secondary sources

As explained earlier (see page 167), historians use two types of sources to gather evidence about the past:

- primary sources – objects created or written at the time being investigated; for example, during an event or very soon after
- secondary sources – accounts about the past that were created after the time being investigated and which often use or refer to primary sources and present a particular interpretation.

Understanding the origin and purpose of primary and secondary sources

Both primary and secondary sources are useful, but it is important to understand where they came from (origin) and why they were created (purpose) because they will almost always reflect the perspective of the person who made them, as well as the attitudes and beliefs of that time. All sources are affected by the author's own point of view, and in some cases the author may have been paid or forced to write in a particular way or ignore certain facts. This is referred to as **bias** and is often aimed at persuading the reader to agree with the author's point of view. This is why historians must carefully analyse and evaluate sources.

Analysing sources by asking 'who', 'what', 'when' and 'why' questions will help you identify the origin and purpose of the sources. For example:

- Who wrote, produced or made the source?
 - Is the creator's personal perspective obvious in the source?

- Is the creator a member of a particular group, religion or organisation?
- What type of source is it?
 - Was the source created at the time of the event or afterwards?
- When was the source written, produced or made?
 - How old is the source?
 - Is it an eyewitness account or is it written by someone at a later date?
 - Is the source complete?
- Why was it written or produced?
 - Was it designed to entertain, persuade or argue a point of view?
 - Does the creator have anything to gain personally from the source?
 - What other events may have been happening at the time and might have influenced the author or source?

RESEARCH TOPIC: Tutankhamun – how did he die?

HYPOTHESIS: Tutankhamun died as a result of a fall from a hunting chariot.

| Source 1: | Pros: | Category of source: | Reference information: |
|--|---|--|---|
| <p>'King Tut died from broken leg, not murder, scientists conclude'</p> <p>National Geographic website</p> | <ul style="list-style-type: none"> • Article is current and based on scientific evidence. • Written by a reputable organisation – National Geographic. • Very detailed medical evidence. | <ul style="list-style-type: none"> • Secondary source • Scientific article | <p>http://news.nationalgeographic.com/news/2006/12/061201-king-tut_2.html</p> <p>(Accessed 23/08/12)</p> |
| Source 2: | <p>Pros:</p> <hr/> <p>Cons:</p> | Category of source: | Reference information: |
| Source 3: | <p>Pros:</p> <hr/> <p>Cons:</p> | Category of source: | Reference information: |
| Source 4: | <p>Pros:</p> <hr/> <p>Cons:</p> | Category of source: | Reference information: |
| Source 5: | <p>Pros:</p> <hr/> <p>Cons:</p> | Category of source: | Reference information: |

Recommended sources in order of relevance/usefulness:

- 1
- 2
- 3
- 4
- 5

Source 3 A source evaluation chart showing an example of how you might compare and select sources



A



B

Source 4 The origin and purpose of these primary (A) and secondary (B) sources are very different even though they are both linked to ancient Egypt.

Locating, comparing, selecting and using information from a range of sources as evidence

By this stage of your historical inquiry, you will have located and collected a variety of different sources and types of information. Now it is time to compare and select the most relevant information that you will use as evidence to support your hypothesis

There are a number of different ways to organise large amounts of information so that you can decide quickly and easily which sources provide the most useful, relevant and reliable evidence.

Graphic organisers to help you compare, select and use information

Organisation charts are very useful tools for collecting, comparing and selecting suitable resources that you have located. A source evaluation chart like Source 3 can help you do this.

Check your learning 5.3

Remember and understand

- List three different examples of sources.
- Beside each source, write where it can be found.
- Which of the following is an example of a primary source?
 - an Egyptian tomb painting
 - an article written about tomb painting by a historian in 1907
- Historians may never be absolutely sure of the building methods used to construct the Great Pyramid of Giza. Why might this be?

Apply and analyse

- Using the table below give two advantages and two disadvantages of using the different search methods shown.

| Search methods | Advantages | Disadvantages |
|-----------------------------------|------------|---------------|
| Using the library catalogue | • • | • • |
| Google search | • • | • • |
| Interviewing older family members | • • | • • |

- Examine the following sites. Explain whether you think they are reliable. Explain why.
 - British Museum
www.britishmuseum.org
 - Coca-Cola
www.coca-cola.com.au
 - University of Tasmania
www.utas.edu.au
 - History of Egypt – Ask Aladdin
www.ask-aladdin.com/history1.htm
- Give two reasons why it is important to know the origin of a particular source of information.

Evaluate and create

- Create a handbook or class wiki providing tips on good research techniques to share with other students in your year level or post on your school intranet.

5.4 Analysing

Identifying and describing points of view, attitudes and values in primary and secondary sources

Primary and secondary sources reflect and represent many different points of view, attitudes and values. These may include personal, social, political, economic or religious points of view. For example, the Greek historian Herodotus visited Egypt in 450 BCE and wrote the following account of how the Great Pyramid of Giza was constructed:

Source 1

[Then] Cheops [the pharaoh] succeeded to the throne ... he closed the temples and forbade the Egyptians to offer sacrifice, compelling them instead to labour in his service. A hundred thousand men ... ten years, oppression of the people to make the causeway for the conveyance of the stones [ramp to move the stones] ... the pyramid itself took twenty years ... built in steps.

Translated extract from *The Histories*, Book II, by Herodotus, a Greek historian (c. 450 BCE)

For many years this account was believed to be true, along with Herodotus' claim that over 100 000 slaves had been forced to build the pyramid.

Historians now know that Herodotus' account is incorrect. At the time of his visit, the pyramid had been standing for over 2000 years and its construction was almost certainly not achieved with the use of slave labour as he described.

Modern historians have excavated skeletons and believe that the pyramid was built by Egyptian labourers who worked on it during flood time, when they were unable to farm. They lived in specially constructed villages near the worksite. Graffiti etched into stonework indicates that at least some of the workers took pride in their labours, calling themselves 'Friends of Khufu'.

What could have motivated Herodotus to deliberately write this false account? As a citizen of Athens, Herodotus' view of the world was shaped by his own democratic background. He resented the fact that so much power was held by one man, the pharaoh, and may have been trying to discredit him by blackening his name.



Source 2 The Great Pyramid of Giza, Egypt

Check your learning 5.4

Remember and understand

- 1 Historical sources always reflect the perspective of their writers. Give two examples of factors that may influence a writer's point of view or perspective.
- 2 Why might the Greek historian Herodotus have written that the Great Pyramid at Giza was constructed using slave labour?

Apply and analyse

- 3 When explaining why an event occurred in history, would it be acceptable to present your own opinions? Why or why not?

5.5 Evaluating

Drawing conclusions about the usefulness of sources

A useful source, whether primary or secondary, is one that will add to your understanding of a historical inquiry. The source needs to be relevant to the topic or question asked and must also be reliable. The following are good questions to ask in order to determine the usefulness of a source:

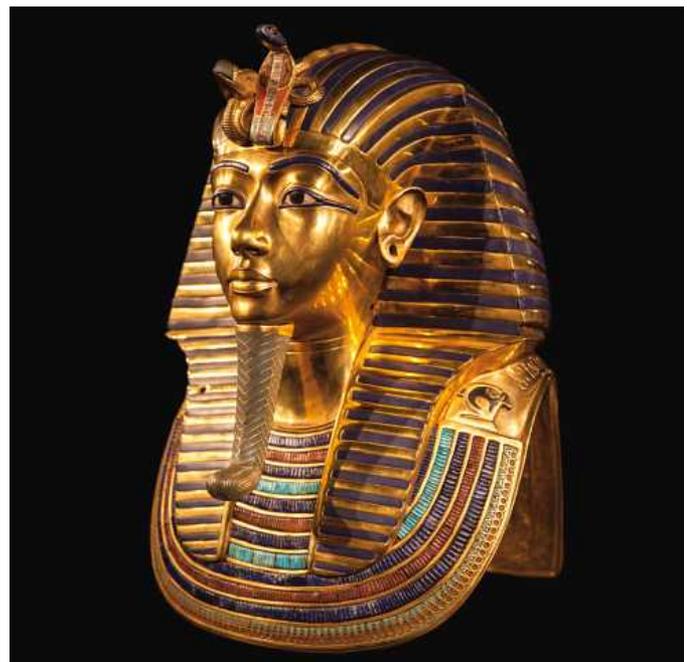
- Is it a reliable source?
- Is there enough information and sufficient detail to help me answer the inquiry question?
- Does the information support and reinforce evidence from other sources?
- Is it balanced or does it present one point of view (bias)?
- Is it based on fact or opinion?
- Is the information current?

Separating fact from opinion

The conclusions you draw about the sources you have found will determine their usefulness. In many cases, this means separating fact from opinion. A fact is something that can be proved: when an event took place, what happened and who was involved. An opinion is based on what a person, or persons, may believe to be true. A simple way to detect whether a

statement is fact or opinion is to look closely at the language used. The use of words like 'might', 'could', 'believe', 'think' and 'suggests' all indicate that an opinion is being expressed. For example:

- Fact: Tutankhamun was a pharaoh who ruled Egypt.
- Opinion: Tutankhamun might have been murdered.



Source 1 Tutankhamun's death mask is one of the most well-known artefacts from ancient Egypt.

Check your learning 5.5

Remember and understand

- 1 What is a fact? How is this different from an opinion?
- 2 Are the following facts or opinions?
 - a Tutankhamun's tomb was discovered in 1922.
 - b The discovery of Tutankhamun's tomb could be the most important discovery of the 20th century.

Apply and analyse

- 3 What words may indicate that a writer is expressing an opinion rather than presenting a fact?

5.6 Communicating and reflecting

Sequencing historical events, developments and periods

One of the most helpful things historians can do to get a better understanding of the past is to organise events in the order that they happened. This is known as **chronology**. Chronology can help us organise things that happened over a small period of time, like a day or week, or huge periods of time, like hundreds of thousands of years. We can also use chronology to look at events that happened in one place or society, or compare events across many different places and societies.

Chronology allows us to develop an ordered sense of time. Once events have been ordered chronologically, we are able to use a range of

historical concepts such as cause and effect, significance, and continuity and change to analyse them in detail.

Sequencing time

Examples of how historians sequence time are shown in Sources 1 and 2. Each table shows how 2100 years have been divided into smaller periods of 100 years. These periods are known as centuries.

Because there is no zero used in the Common Era (CE) calendar, we have to begin from the year 1. This means that the years from 2001 to 2100 are actually part of the 21st century. These tables will help you as you work through Year 7 History. Refer to them as often as you need to.

| Century BCE | Time period | Century BCE | Time period | Century BCE | Time period |
|------------------|--------------|------------------|--------------|-----------------|-------------|
| 21st century BCE | 2100 to 2001 | 14th century BCE | 1400 to 1301 | 7th century BCE | 700 to 601 |
| 20th century BCE | 2000 to 1901 | 13th century BCE | 1300 to 1201 | 6th century BCE | 600 to 501 |
| 19th century BCE | 1900 to 1801 | 12th century BCE | 1200 to 1101 | 5th century BCE | 500 to 401 |
| 18th century BCE | 1800 to 1701 | 11th century BCE | 1100 to 1001 | 4th century BCE | 400 to 301 |
| 17th century BCE | 1700 to 1601 | 10th century BCE | 1000 to 901 | 3rd century BCE | 300 to 201 |
| 16th century BCE | 1600 to 1501 | 9th century BCE | 900 to 801 | 2nd century BCE | 200 to 101 |
| 15th century BCE | 1500 to 1401 | 8th century BCE | 800 to 701 | 1st century BCE | 100 to 1 |

Source 1 More than 2000 years of history Before the Common Era (BCE) divided into centuries. When ordering time BCE, remember to count backwards to 1.

| Century CE | Time period | Century CE | Time period | Century CE | Time period |
|----------------|-------------|-----------------|--------------|-----------------|--------------|
| 1st century CE | 1 to 100 | 8th century CE | 701 to 800 | 15th century CE | 1401 to 1500 |
| 2nd century CE | 101 to 200 | 9th century CE | 801 to 900 | 16th century CE | 1501 to 1600 |
| 3rd century CE | 201 to 300 | 10th century CE | 901 to 1000 | 17th century CE | 1601 to 1700 |
| 4th century CE | 301 to 400 | 11th century CE | 1001 to 1100 | 18th century CE | 1701 to 1800 |
| 5th century CE | 401 to 500 | 12th century CE | 1101 to 1200 | 19th century CE | 1801 to 1900 |
| 6th century CE | 501 to 600 | 13th century CE | 1201 to 1300 | 20th century CE | 1901 to 2000 |
| 7th century CE | 601 to 700 | 14th century CE | 1301 to 1400 | 21st century CE | 2001 to 2100 |

Source 2 More than 2000 years of history in the Common Era (CE) divided into centuries. When ordering time CE, remember to count forwards from 1.

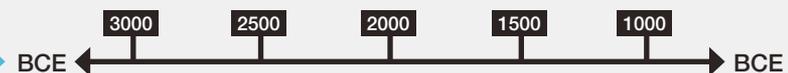
Creating a timeline

Timelines are used by historians to sequence time and order important events chronologically. They help divide large sections of time into smaller periods so that events (such as the births and deaths of important people, wars and discoveries) can be arranged in the correct order.

Timelines can look quite different, but they all work in the same way. There are some basic steps you need to follow when constructing timelines. Source 3 provides a simple example for ancient Egypt. Follow these basic steps when creating a timeline:

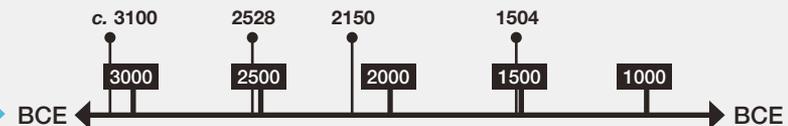
Step 1

Work out the length of time you want to represent on your timeline, such as from 3000 BCE to 1000 BCE. Then divide the timeline evenly into suitable blocks of time – in this case 500-year blocks. A timeline showing what you did yesterday might be divided into hours; one showing key events in the 20th century might be divided into decades.



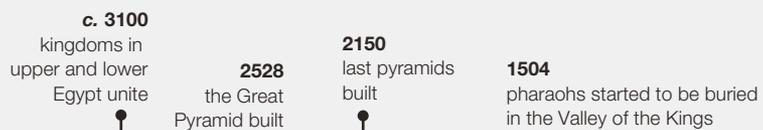
Step 2

Mark specific dates onto the timeline. These dates need to be accurately plotted so that they appear in chronological order. If an exact date is not known, the abbreviation *c.* (from the Latin word *circa*, meaning 'around') is placed in front of it (e.g. *c.* 3100).



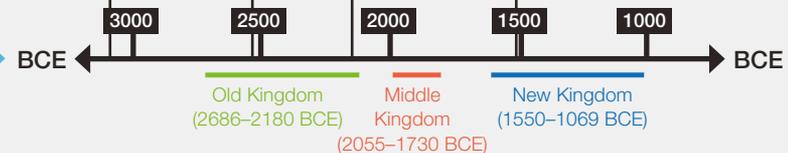
Step 3

Provide a brief description of the dates plotted on the timeline, describing the events that took place.



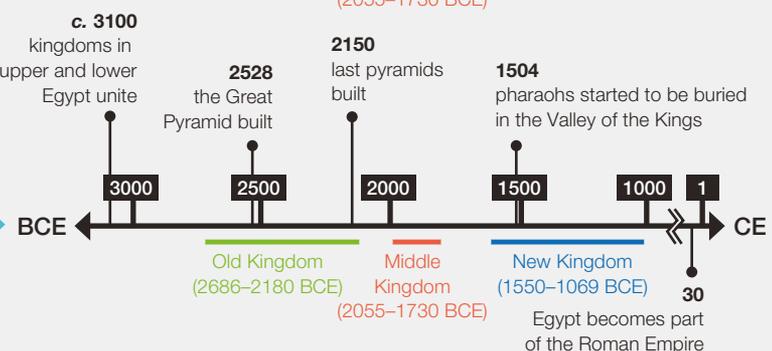
Step 4

Sometimes, sections on a timeline are shaded in different colours and labelled to indicate a period or block of time, such as the different kingdoms in ancient Egypt.



Step 5

To represent a huge span of time, you may need to break your timeline into sections using a jagged line. This break shows that a section of time has been left out and will ensure that your timeline will fit on the page! Just make sure no important events fall in the time you are leaving out. Now that your timeline is complete, you can also add images and captions for some of the entries.



Source 3 A step-by-step guide to creating a timeline

Apply the skill

1 Create your own timeline based around one of the following topics:

- important events that have taken place in your life so far
- events in the life of someone important in your life (e.g. a family member or close friend)

Your timeline should have at least five entries and feature at least one image (with a caption). You will need to conduct some research online to complete this task.

Using historical terms and concepts

Just like scientists, historians share a common language. They use historical terms and concepts to clarify what they are talking about and share their findings. Source 4 lists and defines some commonly used historical terms.

| Term | Definition |
|--------------------|---|
| AD | an abbreviation of the Latin <i>Anno Domini</i> – ‘in the year of our Lord’; a term used for any time after the birth of Christ (i.e. any time after 1 CE); this term has now largely been replaced by CE (see entry below) |
| age | a period of history with specific characteristics that make it stand out from other periods (e.g. the Stone Age, the Bronze Age) |
| BC | an abbreviation of Before Christ, a term used for the period of history before the birth of Christ (i.e. any time before 1 CE); this term has largely been replaced by BCE (see entry below) |
| BCE | an abbreviation of Before the Common Era, a term used for the period of history before the birth of Christ (i.e. any time before 1 CE); this term has largely replaced BC, because it is culturally neutral |
| CE | an abbreviation of Common Era, a term used for any time after the birth of Christ (i.e. any time after 1 CE); this term has largely replaced AD, because it is culturally neutral |
| century | a period of 100 years |
| chronology | a record of events in the order they took place |
| circa | a Latin word meaning ‘around’ or ‘approximately’ (abbreviated as c.) |
| decade | a period of 10 years |
| era | a period of time marked by distinctive characteristics, events or circumstances (e.g. the Roman era, the Victorian era) |
| millennium | a period of 1000 years |
| prehistory | the period of history before written records |
| time period | a block of time in history |
| timeline | a sequence of related historical events shown in chronological order; a timeline is generally scaled with years marked at equal distances |
| year | a period of 365 days |

Source 4 Some useful historical terms

Developing text types (such as descriptions and explanations) that use evidence from a range of sources

Historical writing requires you to describe and explain using evidence from a range of sources. You will often be required to outline the significance of a past event while providing reasons for the event and referring to relevant evidence.

Different types of sources need to be used to ensure that historical writing presents a balanced view and is supported by reliable evidence.

Writing descriptions

The purpose of descriptions is to give clear information about people, places or objects at particular moments in time. They focus on the main characteristics of particular people or things.

Descriptions must always follow a set structure, and events must be organised in **chronological order**.

| Structure of a description | |
|------------------------------|--|
| Introduction | <ul style="list-style-type: none"> Introduces the subject. States the name of the person or event. Outlines why the topic is important. |
| Body | <ul style="list-style-type: none"> Provides details about the person or event (including dates and important facts). Information must be organised in paragraphs, with a new paragraph for each detail. Quotations and descriptive words should be used where relevant. |
| Conclusion (optional) | <ul style="list-style-type: none"> Revisits the most important details and provides a concluding statement. |

Source 5

Writing explanations

The purpose of explanations is to tell how or why something happened. They provide the reader with a greater understanding of the causes and effects of past events. Explanations must be clear and factual. They should not contain opinions or emotional language. There must be supporting evidence from a variety of sources, which are acknowledged in a bibliography using the correct referencing format.

| Structure of an explanation | |
|------------------------------|--|
| Introduction | <ul style="list-style-type: none"> Clearly states the main idea or aim. Briefly outlines the reason/s why an event occurred and its effect/s. |
| Body | <ul style="list-style-type: none"> Each idea must be supported by evidence. The evidence should be analysed to explain its significance or importance. Information must be organised in paragraphs, with a new paragraph for each detail. Language should be precise and not contain emotional words. Personal opinions should be avoided. |
| Conclusion (optional) | <ul style="list-style-type: none"> Provides a short and clear overview of the main ideas presented in the body. States a conclusion drawn from the evidence. |

Source 6

Using a range of communication forms

The final stage of any historical inquiry is the presentation of your findings. This is one of the most important aspects of your inquiry because it draws together all of the sources, evidence and findings of your investigation.

There are a number of ways to effectively and impressively communicate your findings. For example:

- oral – speeches, class presentations, re-enactments, interviews and role plays
- graphic – posters, cartoons, graphic organisers and models
- written – descriptions, explanations, class newspapers, scripts, letters and diaries
- digital – audiovisual presentations, websites, films, blogs, wikis and apps.

Check your learning 5.6

Remember and understand

- 1 What is a timeline?
- 2 What century are we living in?
- 3 What does BCE after a date mean?
- 4 What is the purpose of both of descriptions and explanations?

Apply and analyse

- 5 Arrange the following dates in chronological order.
1 CE 200 BCE 1200 CE
2012 CE c. 8000 BCE
- 6 Which centuries were the following years in?
a 2012 BCE d 1200 CE
b 1 CE e 902 BCE
c 1920 CE f 654 BCE
- 7 Your teacher has asked you to write an essay on the life of a slave in Egypt. Would you use a description or an explanation for this task? Why?

Evaluate and create

- 8 Make a human timeline by forming a line with your classmates from youngest to oldest. Before you begin the activity, you will need to organise yourselves in groups based on:
 - a your years of birth
 - b your months of birth
 - c your dates of birth
 - d your times of birth (if two or more people are born on the same day and year).
- 9 Create a rhyme to help you remember one of the following:
 - the difference between CE and BCE
 - the definitions of year, decade, century, millennium, era and age.

Overview

The ancient world

Historians refer to the period of human history from around 60 000 BCE to 650 BCE as the ancient world. During this time, some of the most important ancient civilisations developed on the **continents** we now know as Africa, Europe and Asia.

Over this huge stretch of time, there were many changes in the way humans have lived. The earliest humans moved around in search of food, hunting and gathering as they went. Over time, people began to live in villages, and then towns, and then cities.

This year in history, you will be learning about the skills and techniques used by historians to investigate the ancient world. You will also be learning about one ancient civilisation in detail.



6A

Where and when did civilisations in the ancient world develop?



chapter

6

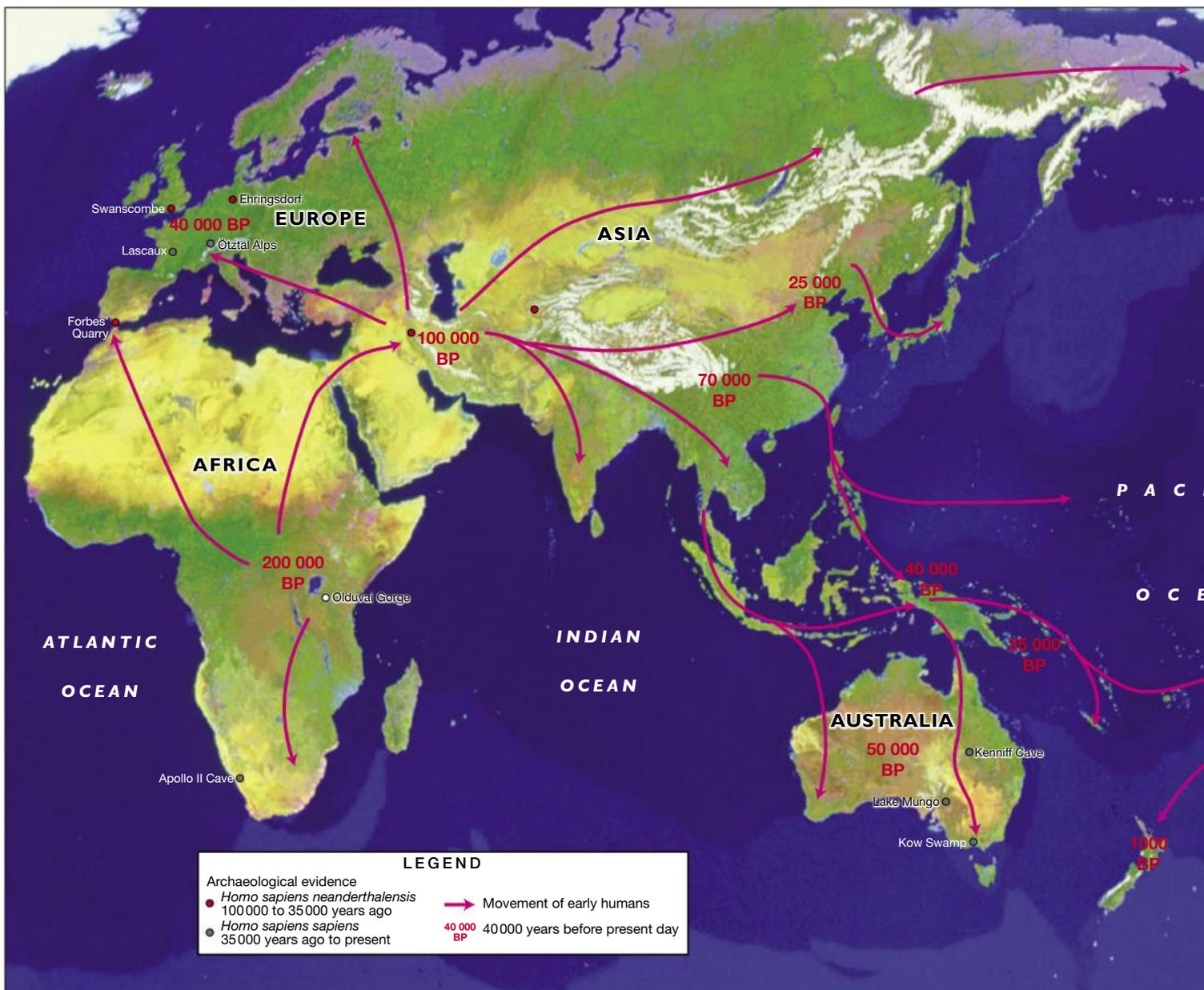
Source 1 The Colosseum is the largest amphitheatre ever built and is one of the most recognisable artefacts from ancient Rome.

6.1 The first humans

Modern humans have existed on Earth for about 200 000 years. Archaeologists and scientists have gathered primary sources, such as bones and early tools, to uncover evidence about early humans, and to generate theories about how they spread across the Earth. The earliest remains of people that are

anatomically similar to modern humans (*Homo sapiens*) were found in East Africa. From there, historians believe *Homo sapiens* spread to other parts of Africa. Ancient peoples were mostly nomadic, meaning that they moved around a lot in search of food and shelter.

WORLD: POSSIBLE HUMAN MIGRATION PATTERNS



Source 1 This satellite image of Earth shows the likely migration routes and settlement patterns of humans (*Homo sapiens*) according to the 'Out of Africa' theory.

6A Where and when did civilisations in the ancient world develop?

It is believed that approximately 100 000 years ago, these first humans left Africa and arrived in the Middle East. Over thousands of years, many waves of migrating groups of humans left Africa, travelling in different directions and living nomadic lifestyles. This continued until around years ago. Evidence of agriculture dating back to that time was discovered in the Middle East, which proved that groups of people were able to settle in one place. From then on, humans started to develop increasingly complex societies and civilisations.

Source 1 shows the spread of humans from their beginnings in East Africa to other parts of the world. This spread of humans across the world from origins in Africa is known as the **'Out of Africa' theory**. Some scholars argue that early humans developed simultaneously in different parts of the world. However, fossil and genetic evidence strongly supports the 'Out of Africa' theory.



Check your learning 6.1

Remember and understand

- 1 How long do historians think modern humans have existed on Earth for?
- 2 What is the scientific name given to modern humans?
- 3 What is the 'Out of Africa' theory?

Apply and analyse

- 4 According to the 'Out of Africa' theory, how long ago did humans arrive in Australia?

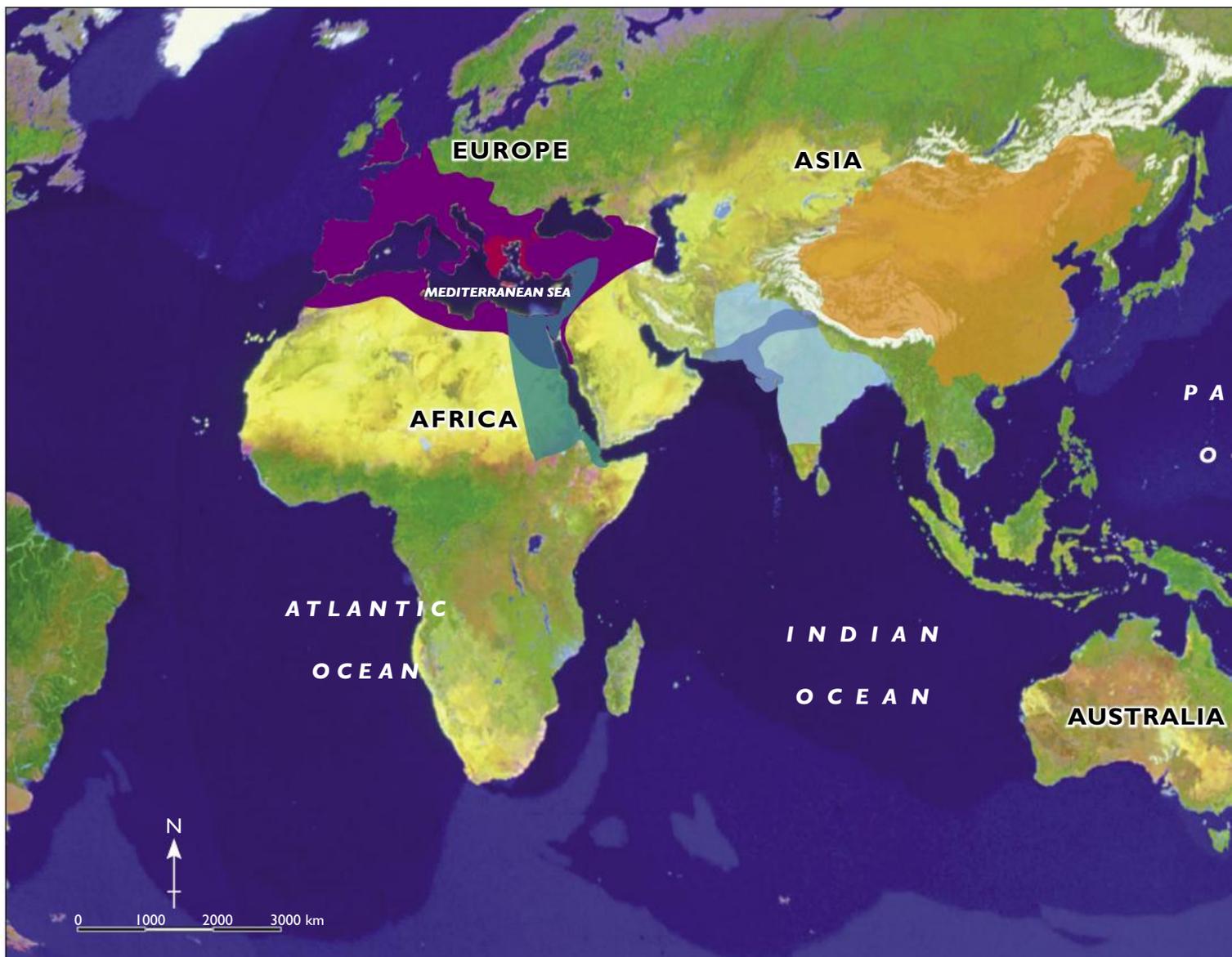
Source: Oxford University Press

6.2 The location of ancient civilisations

Some of the most important ancient civilisations developed on the continents we now know as Africa, Europe and Asia. They included ancient Egypt, ancient Greece and ancient Rome in the Mediterranean region, and ancient India and ancient China in Asia.

This year you will be studying one of these ancient civilisations in detail. To get a better understanding of ancient civilisations, it helps to look at some of the factors they had in common and how their development was linked.

WORLD: KEY ANCIENT CIVILISATIONS



Source 1 This satellite image of Earth shows the location and size of key ancient civilisations when they were at their peak.

Source 1 shows the location and size of these ancient civilisations and provides some key information about each of them. Note the dates for each civilisation as you are looking at the map – not all of them existed in the same time periods. Some flourished and then disappeared, only to later become part of another civilisation. This was the case with ancient Egypt and ancient Greece, both of which became part of the Roman Empire, and the Indus Valley civilisations in India, which became part of the Mauryan Empire. The timeline in Source 1 on page 190 also shows the dates for each of the civilisations shown here.

Check your learning 6.2

Remember and understand

- 1 Name the continents where some of the world's most important ancient civilisations developed.
- 2 Name the two ancient civilisations that developed in India.
- 3 Ancient civilisations in Europe and Africa developed around an important sea. What is it called?

Apply and analyse

- 4 Which of the five ancient civilisations shown is the oldest? When did it begin?
- 5 The lands occupied by ancient Egypt and Ancient Greece both eventually became part of another ancient civilisation. What was it called?

Ancient Egypt (c. 3100–30 BCE)

Ancient Egypt was a civilisation based around the Nile River in northern Africa. It was one of the world's first civilisations. Ancient Egypt was ruled under one government from about 3100 BCE. Between 3100 BCE and 30 BCE, when the last **pharaoh** (ruler) died, there were 31 **dynasties** and 70 pharaohs.

Ancient China (1766 BCE–220 CE)

Ancient China was ruled for 3600 years by dynasties (families). The last dynasty – the Qing – ended in 1912. Chinese society was one of the earliest in the world to establish towns and cities. It also contributed important technological developments to the rest of the world, such as gunpowder and printing.

Ancient India (3500 BCE–184 BCE)

Civilisation in India began in the Indus Valley in 3500 BCE. For much of its history, ancient India was a collection of separate regions and kingdoms, some of which were at war with one another. At different times, some of these were ruled as part of dynasties or empires; this included the Mauryan Empire, whose authority rose and fell in just 120 years.

Ancient Greece (c. 776–146 BCE)

Formed from three existing cultures in the region, Ancient Greece covered all of modern-day Greece as well as parts of Turkey and other settlements around the Mediterranean and Black seas. The civilisation lasted only about 400 years, but its legacy (including democracy) influences the Western world to this day.

LEGEND

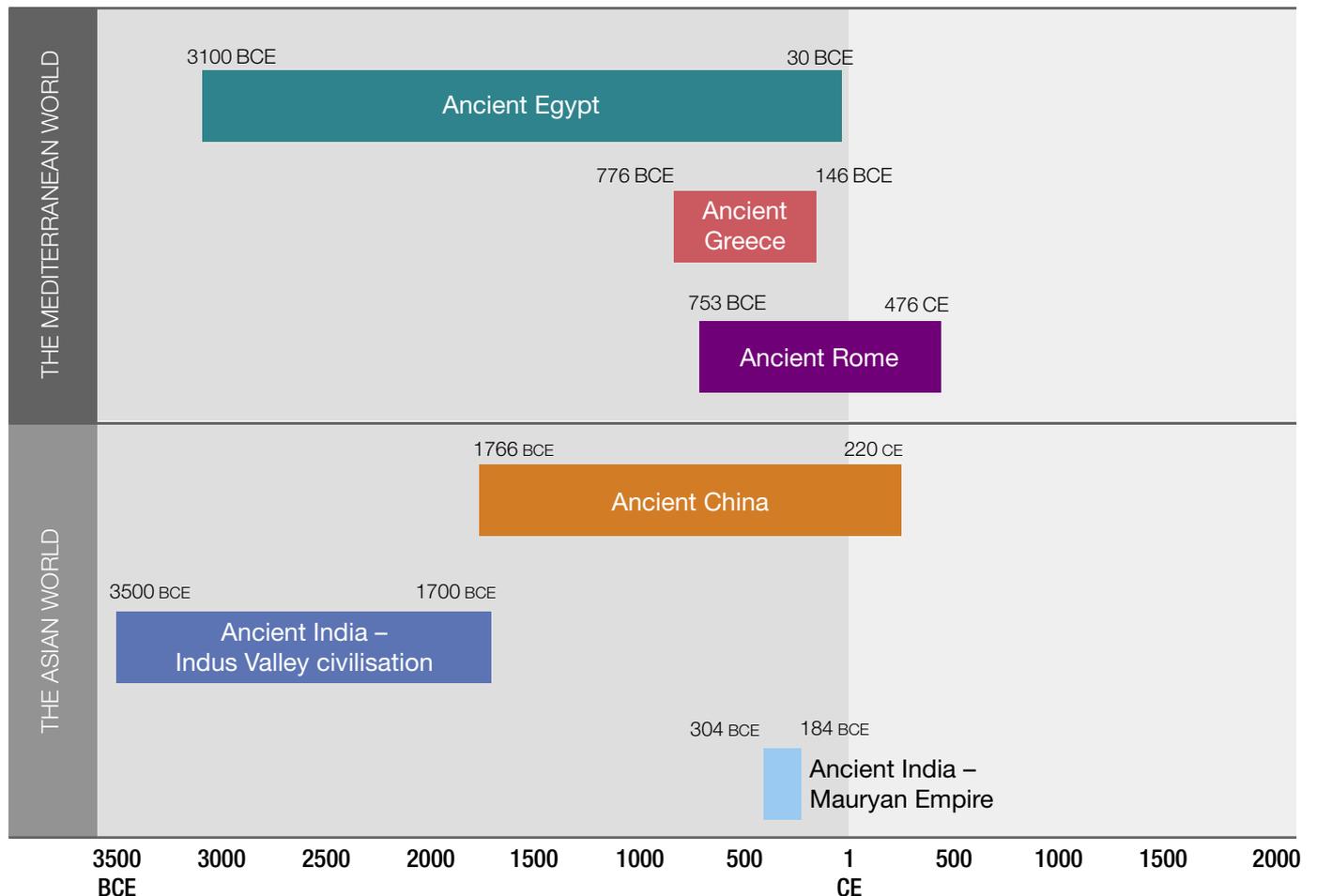
-  Ancient Egypt
-  Ancient Greece
-  Ancient Rome (including territories once part of ancient Egypt and Greece)
-  Ancient India – Indus Valley civilisation
-  Ancient India – Mauryan Empire (including territories once part of the Indus Valley civilisation)
-  Ancient China

Ancient Rome (753 BCE–476 CE)

The civilisation of ancient Rome lasted approximately 1300 years. It was centred around the city of Rome, in modern-day Italy. The Romans conquered the ancient Egyptians and Greeks, as well as many other peoples. During its history, Rome was ruled as a **monarchy**, a **republic** and an empire. It was a powerful civilisation with a strong military and an advanced **culture**.

Source: Oxford University Press

6.3 A timeline of ancient civilisations



Source 1 A timeline showing the rise and fall of ancient civilisations

Check your learning 6.3

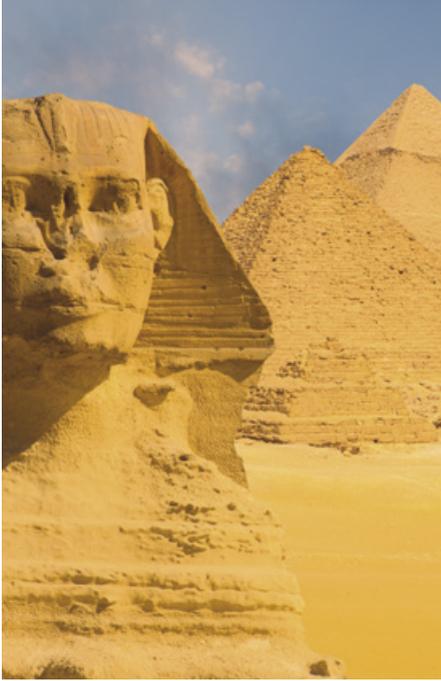
Remember and understand

- According to the dates shown on the timeline, calculate how many years the following ancient civilisations lasted:
 - Ancient Egypt
 - Mauryan Empire in India
 - Ancient Rome.

Apply and analyse

- Sources 2–6 show some of the most important structures from the ancient world. Use the Internet to complete the following tasks:
 - When was each structure built?
 - Why was each structure built and what was it used for?
 - Were any of these structures built for similar reasons/uses? If so, which ones?

Source 2 The Great Pyramid and Sphinx at Giza, near Cairo



Source 3 The Parthenon, built on the Acropolis in Athens



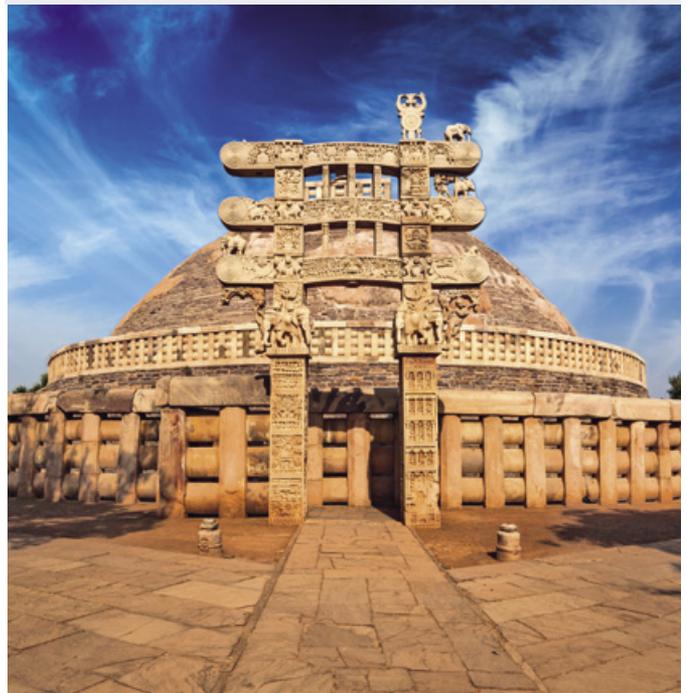
Source 4 The Colosseum, a vast public stadium, opened in Rome in 80 CE



Source 5 A section of the Great Wall of China



Source 6 A Buddhist stupa built during the Mauryan Empire



Depth study 1: Investigating the ancient past

Investigating the ancient past

Finding out about the past is not easy. Some ancient peoples and civilisations have left behind evidence of their existence, while many others have not. This means our knowledge and understanding is often incomplete. We can look at evidence such as these ruins at Göbekli Tepe in Turkey to find clues about the past, but they do not always give us the full story. Historians use a range of sources in order to piece together stories and events that took place in ancient times. They also consider a range of different opinions and perspectives about what happened in order to reach the most likely conclusions.



7A

How is history investigated?

- 1 How do you think historians could use the ruins at Göbekli Tepe to piece together an understanding of the past?

7B

What sources can be used in a historical investigation?

- 1 These ruins are a primary source for the study of ancient history, because they were made during the period being studied. What can primary sources tell us about history that sources made afterwards cannot?



Source 1 Göbekli Tepe, located in south-eastern Turkey, is the world's oldest human-made religious building. Historians believe it was most likely built by hunter-gatherers around 12 000 years ago.

7C

What methods are used to investigate the past?

- 1 How could scientists and historians work together in order to better understand these ruins?
- 2 What types of things could they tell us about this ancient society?

7D

Why is conservation important?

- 1 What types of things might damage these ruins?
- 2 Why do you think historians would want to conserve them?

7.1 How historians investigate history

History is the study of the past. Historians try to understand and explain the past by examining its remains – fossils, bones, books, ruins – known as sources. Historians use sources to generate theories (known as hypotheses) about people and events from the past. The process of investigating history therefore involves finding sources, asking questions about these sources, and then creating hypotheses. In order to prove these hypotheses, historians continue looking for more sources and gathering more evidence.

Some historical sources are easier to find than others. Some groups of people from the past have left

behind more primary sources than others. No matter how many sources a historian finds, each piece can only tell part of the story. And regardless of whether the source is a small fragment of ancient pottery or a detailed book, it will only represent a small piece of the puzzle or one person's perspective. To combat this problem, historians need to research widely, recognise **bias** and accept that there are periods in history for which we cannot gather evidence. Increasingly, historians work with experts in other fields – such as scientists, biologists, translators, palaeontologists, geologists and archaeologists – to construct a more accurate and complete picture of the past.



Source 1 Historians are time detectives. They examine sources from the past, such as human remains, and interpret the evidence they find to construct explanations about how people lived and why particular events happened.

What sources can be used in a historical investigation?

Historians use a variety of sources in historical investigations. These are usually divided into **primary sources** and **secondary sources**.

Primary sources

Primary sources are things that existed or were written or made during the time being studied. They have a direct link to the event, period or person being studied.

Secondary sources

Secondary sources are things that have been created after the time being studied. A secondary source interprets and analyses primary sources. These sources are one or more steps removed from the event. A secondary source for one historical inquiry may be a primary source for another. For example, a painting of a 10th-century battle by a 17th-century artist is a primary source for that artist's life but a secondary source for the battle.



Source 2 This spearhead is a primary source that provides evidence about our Indigenous Australian past.



Source 3 Archaeologists excavate ancient sites in order to find artefacts, buildings or even human remains that will help them understand the past.

Source 4 Some examples of primary and secondary sources

| Primary sources | Secondary sources |
|---|--|
| <p>Anything that existed or was written or made <i>during</i> the time being studied, such as:</p> <ul style="list-style-type: none"> • skeletons or corpses • buildings • paintings • documents or inscriptions • music, songs or stories • costumes, clothing and jewellery • household items. | <p>Anything that interprets or explains primary sources, and was created <i>after</i> the time being studied, such as:</p> <ul style="list-style-type: none"> • textbooks, including this one • books, magazines, articles and websites • films and documentaries • maps • timelines. |

Check your learning 7.1

Remember and understand

- 1 Describe some of the sources historians use to investigate the past. What they can tell us?
- 2 What is a hypothesis? Why is it important for a historian to have a hypothesis at the start of a historical investigation?

- 3 Historians today work with a range of different experts to analyse the past. List three such experts.

Apply and analyse

- 4 In your own words, explain the difference between primary sources and secondary sources.

7.2 Archaeological digs

If you missed the grand final of your favourite sport and wanted to know what happened, you probably wouldn't get reliable information if you spoke to just one person. You would need to check many sources of information – newspapers, television reports, game replays, fan blogs and so on. Likewise, historians cannot just rely on one source of evidence for an investigation. Historians need to act like detectives, constantly searching for clues about the past to gather as much evidence as possible.

When conducting investigations into the ancient past, historians rely on the work of many other experts, including biologists, geneticists, palaeontologists and archaeologists. Many of these experts work together at archaeological digs, which are an important source of evidence of the ancient past.

Archaeologists uncover sources of evidence of past peoples. This includes not only skeletons but also the places where they lived and travelled, such as the ruins of towns, temples and tombs; artefacts they made, such as pottery, weapons, tools and coins; inscriptions and stone reliefs they carved; even rubbish dumps (middens) and fire sites. Some sources are so old that they have turned into fossils or remain only as a 'shadow' or crust in the soil. Some archaeologists work underwater, looking for sources on or beneath the sea bed, such as old shipwrecks.

Most sources found on land are buried. They might be covered by the silt of past floods, sand blown by the wind, or forests that have grown over them. Some, like the ancient Aztec capital of Tenochtitlan, lie beneath more recent cities or settlements that have been built over the top of them.

Once a site is discovered, archaeologists rope off or otherwise protect the site, called the 'dig'. It is then marked off into segments, in a grid. This allows the precise location of any items that are found to be specified. After surveying the site, archaeologists remove overlying rocks and dirt. Ancient objects can be extremely delicate, so archaeologists need to take great care uncovering them.

Once a source has been fully exposed or excavated, the archaeologist photographs and numbers it, and records details of its size, appearance and exact location.



Source 1 Indigenous art at Injalak Hill, Northern Territory. This is evidence of Australia's ancient Aboriginal people. A historian might investigate the age of these paintings, who painted them and why.

Sources of evidence

Archival material (e.g. letters, reports, documentaries, voice recordings, newspapers, official documents) found in libraries, archives and on specialised Internet sites

Textbooks and journals by experts relating to the matter under investigation

Portable artefacts (e.g. tools) and other sources (e.g. a skull) in places such as museums, libraries and art galleries

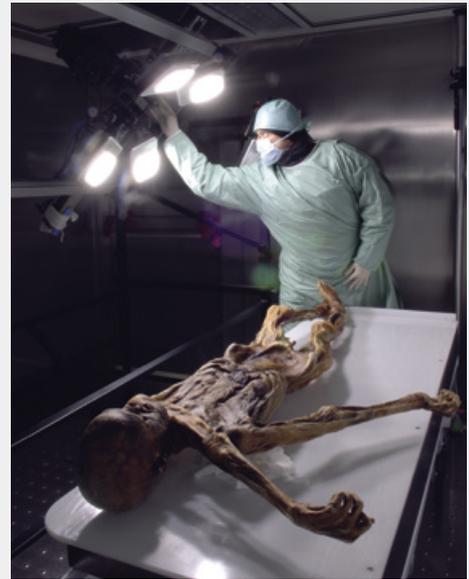
Cemeteries, caves, beach middens, historic sites (e.g. with ruins) and so on

Source 2 Sources of evidence for a historical investigation. Some can be found at archaeological digs. Others can be used to make sense of objects found at digs.

keyconcept: Significance

Ötzi the Iceman

In 1991, the preserved corpse of a man who had lived 5300 years ago was found accidentally by tourists in the Ötztal Alps, in northern Italy. Ötzi the Iceman is the oldest natural mummy in Europe. At first, the people who found him did not realise the significance of their find. A jackhammer was used to chisel the corpse out, damaging part of the body. Later, the body was treated with much more care. The mummy provided many different types of evidence that showed what life was like when Ötzi was alive. For example, his lungs were blackened, probably from breathing in campfire smoke, and his stomach contained remnants of what he had been eating. Scientists could tell what kind of environment he had lived in from pollen found in his intestine, and they could see what sort of lifestyle he had led from his bones. He also had a tattoo. With the corpse were clothes, tools and equipment, which presented further clues to his life. Ötzi gave historians new insights into the lives of ancient Europeans. For more information on the key concept of significance, refer to page 169 of 'The history toolkit'.



Source 3 The remains of Ötzi the Iceman



Source 4 Some archaeological excavations can be quite deep because the sources being excavated may be covered by many layers of dirt, rock and debris.

Check your learning 7.2

Remember and understand

- 1 Identify what kinds of sites archaeologists excavate.
- 2 Explain how archaeologists investigate a dig.

Apply and analyse

- 3 Analyse how Ötzi the Iceman's body could be used to provide information about life in the Ötztal Alps more than 5000 years ago.
- 4 Sketch an archaeological dig and label the different types of evidence that could be found there.

Evaluate and create

- 5 Imagine you are an archaeologist. Briefly explain why your job is important to the study of history.

7A rich task

Historical timelines

Timelines are a critical part of the study of history because they allow us to place events in **chronological order** (that is, the order in which they took place). It is important when studying history to know when particular events happened so that we can draw conclusions about cause and effect, and so we can understand the context of particular historical events.

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Creating a timeline

A timeline is a diagram showing a range of events over time. The events are arranged in the order in which they occurred. Usually a timeline is shown as a horizontal or vertical bar or a single line. This allows it to be drawn precisely.

Usually BCE (or BC) and CE (or AD) are shown with directional arrows at one or both ends of a timeline. This indicates that time did not start or stop when the timeline starts or stops.

Source 1 shows how to construct a timeline step by step.

Apply the skill

1 Draw a timeline to show these important discoveries and inventions.

Wheel – 3500 BCE

Silk – 2700 BCE

Alphabet – 1100 BCE

Paper – 105 BCE

Gunpowder – 900 CE

Car – 1885 CE

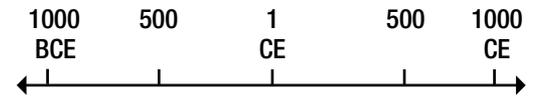
Personal computer – 1964 CE

DVD player – 1998 CE

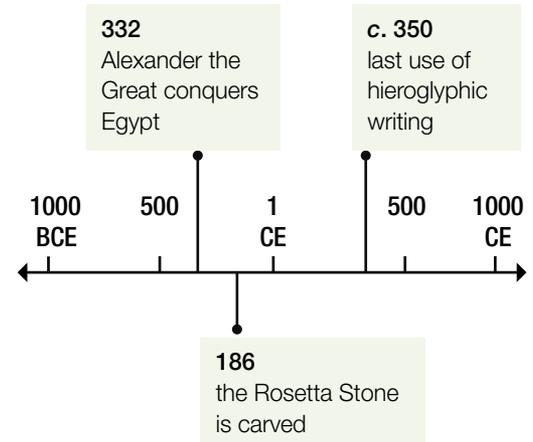
iPod – 2001 CE

2 What sort of events do you think historians plot on timelines?

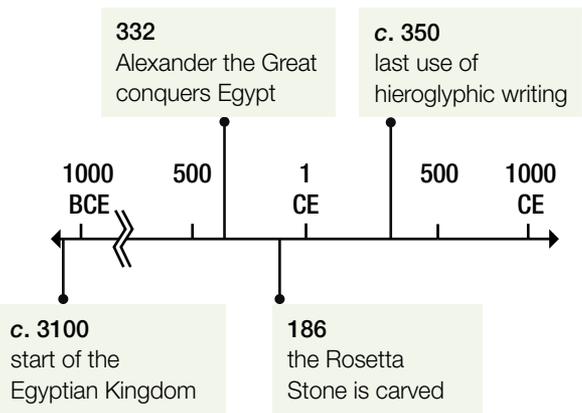
3 Why can a timeline be more useful than a list of dates?



Step 1 Work out the length of time you want to represent on your timeline, for example from 1000 BCE to 1000 CE. Then divide the timeline evenly into suitable blocks of time, in this case 500-year blocks. Another timeline showing what you did yesterday might be divided into hours; one showing key events in the 20th century might be divided into decades.



Step 2 Mark specific events on the timeline and include their dates. They must be accurately plotted. If you do not know the exact date, place the abbreviation *c.* (from Latin word *circa*, meaning 'around') in front of it, for example *c.* 350. Write a brief description of each event on the timeline.



Step 3 To represent a huge span of time, you may need to break your timeline into segments separated by a jagged break in order to fit it on the page. The break shows that a section of time has been left out, so make sure that no events fall in the time you are leaving out.

Source 1 Steps in drawing a timeline

Extend your understanding

Timelines can help us to understand how different historical events might have influenced each other. Construct a personal timeline for somebody in order to understand how history has affected that individual.

Step 1 Find a person significantly older than you to interview. This could be a grandparent or an older family friend. Ask them to tell you the most important things that have happened to them in their life, and when they happened. Construct a timeline of the important events in that person's life.

Step 2 Do some research to determine what events were happening in the world and in this person's country during their life. Add those events on the timeline in a different colour so you can distinguish them from your subject's personal story.

Step 3 Study the timeline and answer the following questions:

- 1 Can you draw any links between personal events and the world events happening around your subject? For example, the person you interviewed may have fought in a war, or may have travelled overseas to see the Olympic Games.
- 2 Which events do you think were most influential in your subject's life?
- 3 How do you think the historical events on the timeline would have affected you if you were born at the same time as your subject? Take into account how old you would have been when each event occurred.



Source 2 The personal timelines of older people can be a rich source of history.

7.3 Primary and secondary sources

Historical sources are items that a historian looks for and then studies to investigate the past. If the right questions are asked about sources, they can provide evidence for an argument about history. Historians want to know who made a source, how old it is, where it came from, whether it is reliable, and what motivated the person who created it. Historians also look for any gaps or silences in the evidence. Sometimes what is not said can be as important as what is.

The past is represented in many different forms and from a range of different perspectives. They include people's remains, what is left of what they built, wrote, crafted or painted, and what they have passed down by way of stories, rituals and ceremonies. The past is also represented by historians and others who write about events or historical periods after they happened. Sources can be divided into two categories: primary and secondary sources.

Primary sources

Primary sources are those that were created during the time being studied. They have a direct link to the event, period or person being studied. They may be:

- the skull of a person who lived during the period
- the remains of an ancient temple
- a document or inscription written during the period
- the oral testimony (first-person account) of someone who saw or experienced the time in question.

To find primary sources, historians can look in a number of places. These include excavating ancient sites and also looking in libraries and museums, which often have rich collections of primary sources.

Secondary sources

Secondary sources deal with a particular period, but they are made after that time. For example, this textbook is a secondary source. Some examples of



Source 1 This Torres Strait Islander's jewellery, clothing and paint are primary sources of evidence about the Indigenous culture of Saibai Island.

secondary sources are listed in Source 2. A source may be both primary and secondary, depending on which historical period is being studied. Imagine you had a painting of a 10th-century battle by a 17th-century artist. The painting would be a secondary source about the battle, since it was created long after the battle. It would be a primary source about that artist's life or about painting styles in the 17th century, since it was created during the period being studied.

Examples of secondary sources used in historical inquiries

- Interpretations of past events by historians and other scholars
- Films and documentaries about past events
- Maps depicting past journeys and trends
- Graphical displays (e.g. timelines)
- Books, magazine articles and websites

Source 2 Some examples of secondary sources

Source 3 A comparison of primary and secondary sources

| Type of source | Value or purpose | Limitation |
|------------------|--|---|
| Primary source | <ul style="list-style-type: none"> Was created by somebody who actually experienced the event. Gives direct insight into the past. Is a surviving link to a particular time in history. | <ul style="list-style-type: none"> May be inaccurate or distorted. May be damaged or incomplete. |
| Secondary source | <ul style="list-style-type: none"> Can fill in gaps about primary sources. Is often prepared by experts in their field. Can provide other valid perspectives. Shows how evidence can be used to construct versions of the past (called representations). | <ul style="list-style-type: none"> May be inaccurate or distorted. Is not a direct link to the past. Is prepared after the time being studied. |

keyconcept: Evidence

Oral history

The Indigenous societies of ancient Australia had an oral culture. With no form of writing, their records were preserved in a range of ways. These include the paintings they left, their ceremonies, and the stories, laws and traditions they passed on by word of mouth. Historians and anthropologists rely heavily on these primary sources in searching for evidence of Indigenous people's history. Source 4 is one example of an oral account of the Japaljarri-Jungarrayi – a creation story.

Source 4

The story I am telling is about my fathers in the Dreamtime who made the stars travel across the sky ... They were not made randomly, but by the Japaljarri-Jungarrayi Dreaming who created the Milky Way and carried stars and witi poles [logs, set on fire at one end to provide light] as he travelled ... We were taught about these Dreamings by our grandfathers, fathers and elder brothers.

The [people to the north and west of Alice Springs] instructed us in the Warlpiri law and told us not to forget what we had been taught ... I am now telling the Dreaming of the Milky Way, all of those millions of stars up above us, as I was told it by our old men.

Paddy Japaljarri Sims,
 'Yiwarrakurlu/Milky Way' in Warlukurlangu Artists,
Kuruwarri/Yuendumu Doors, Australian Institute of
 Aboriginal Studies, Canberra, 1987, Door 29, p. 127

For more information about the key concept of evidence, refer to page 167 of 'The history toolkit'.

Check your learning 7.3

Remember and understand

- In your own words, write a definition for primary and secondary sources.
- Make a table that lists some examples of primary and secondary sources.

Apply and analyse

- Explain what we can learn from oral history and identify some of the advantages and disadvantages of oral accounts.
- Imagine you are a historian in the year 2100 who is studying the life of a person who died in 2013. What primary and secondary sources could you use to gather evidence about their life? List two of each.
- Compare and contrast the usefulness of primary and secondary sources. List three advantages and three disadvantages of each.



Source 5 Aboriginal rock art is an example of a primary source.

7B rich task

Interpreting sources

Historians need to use a variety of sources to develop an understanding of a particular historical event or concept. Primary and secondary sources provide different types of information and different levels of accuracy. Both types of sources can be biased in particular ways, depending on who made or wrote them and why.

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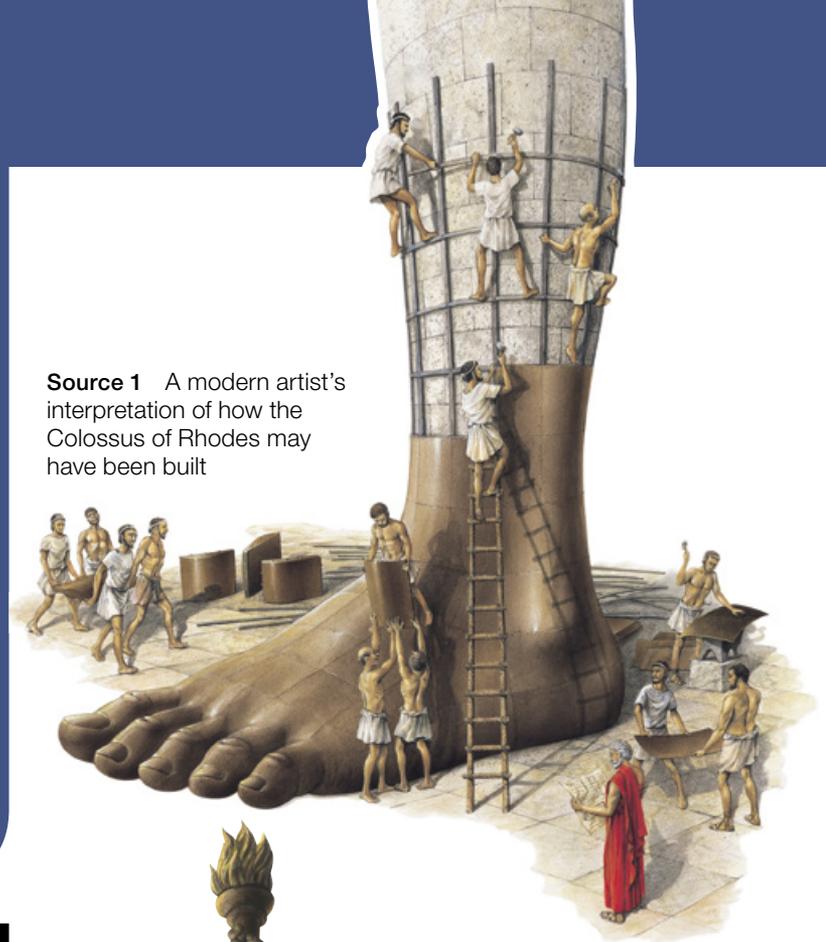
Comparing primary and secondary sources

In the study of history, it is important to distinguish between primary and secondary sources of evidence. It is also important to be able to determine how reliable these sources are.

When examining a source you must determine:

- who made it
- why it was made
- whether the creator may have wanted to influence people reading or viewing it
- what information the creator might have had access to when making it
- whether the creator could have had a bias or unfair prejudice towards the thing or event they describe in the source
- how reliable it is.

Source 2 A modern artist's interpretation of how the Colossus of Rhodes may have looked



Source 1 A modern artist's interpretation of how the Colossus of Rhodes may have been built



Source 3

At Rhodes was set up a Colossus of seventy cubits high, representing the Sun ... the artist expended as much bronze on it as seemed likely to create a dearth [shortage] in the mines, for the casting of the statue was an operation in which the bronze industry of the whole world was concerned.

Philo of Byzantium, scientist and engineer,
1st century BCE

Source 4

Colossus, one of the seven wonders of the world, was built around 304 BCE by Chares the Lindos (from Lindos), in honour of Apollo the god of the sun (Helios in Greek) and patron god of Rhodes. It stood one hundred feet tall and it was located at the entrance of Mandraki harbour. Made entirely of bronze, it was then used as a lighthouse. It symbolised the strength and wealth of the Rhodian people.

It is believed to have been destroyed in 226 BCE by a powerful earthquake. Later the pieces, it is believed, were taken by the Egyptians.

Rhodes Travel,
www.rhodestravel.co.uk/rhodes-tn/colossus-rh.htm

Source 5

Even as it lies it excites our wonder and admiration. Few men can clasp the thumb in their arms, and its fingers are larger than most statues. Where the limbs are broken asunder, vast caverns are seen yawning in the interior. Within it, too, are to be seen large masses of rock, by the weight of which the artist steadied it while erecting it.

Pliny the Elder, Roman author (23–79 CE)

Source 6

Colossus of Rhodes (Gk. *kolossos*, 'a more than lifesize statue'), a bronze statue of the Greek sun-god Helios, one of the Seven Wonders of the ancient world. Erected to commemorate the successful defence of the city against a siege in 305–304 BCE, it stood at the entrance of the harbour (the tradition that it stood astride the entrance is discredited), and was 70 cubits high (30–35 m, 100–115 ft). It was completed c. 280 BCE and overthrown by an earthquake c. 224 BCE.

Oxford Companion to Classical Literature,
Oxford University Press

Apply the skill

- 1 Look carefully at Sources 1–6 describing the Colossus of Rhodes and complete the table. Like all historians, you may need to conduct some research to help you, or even make an educated guess based on the evidence available to you. Use this evidence to make an assessment about whether the sources show any bias and decide how reliable each one is. Justify your responses for each source.

| Source number | Primary/ Secondary source | Creator | Reason source was created | Date created (if known) | Bias or prejudice | Reliability |
|---------------|------------------------------|---------|---------------------------|-------------------------|-------------------|-------------|
| | | | | | | |

Extend your understanding

Now form small groups to answer the following questions based on the most reliable sources provided:

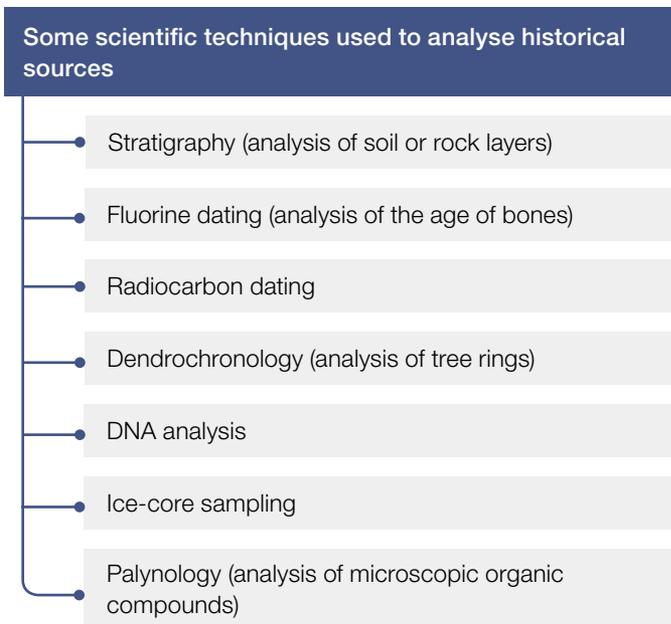
- When was the statue built and why?
- How tall was it?
- When did it fall and why?
- Which are the two primary sources? At which point in the history of the statue were they written?
- How sure can we be of what the Colossus looked like?

7.4 Scientific techniques

When archaeologists and historians find objects from the past, they often need help from scientists who use the latest techniques and machinery to gather more information. Many of these techniques – known as scientific techniques – are used to assess the likely age of sources. They can tell us, for example, the ages of the skulls in Source 2. Scientific techniques like the ones described below need to be used in combination with other historical techniques and evidence to provide a complete explanation of the past.

Scientific dating techniques

Many scientific dating techniques are used to investigate the past. Some are absolute dating techniques, which allow the age of an object to be stated as precisely as possible (in years). Others are relative dating techniques, which can only determine whether an object is of an earlier or more recent date relative to (compared with) another object.



Source 1 Some scientific techniques used to investigate the past



Source 2 Three skulls – front: *Homo habilis* (Kenya, 1.88 million years old); centre: *Homo erectus* (Kow Swamp, Victoria, 13 000 years old); back: *Homo sapiens* (Keilor, Victoria, 13 000 years old)

Stratigraphy

Stratigraphy involves analysing sources found in the different strata of earth. Strata are layers marking different geological time periods. Since the layers of rocks are generally youngest on top and oldest on the bottom, items found in the lowest strata will usually be the oldest (see Source 3). In an archaeological dig, scientists may know that a particular stratum (the singular form of strata) is 1000 years old. This means that the items excavated from that stratum will probably be of a similar age.

Natural disasters and geological events can change the way strata are arranged, so it is not an exact science. Stratigraphy is a relative dating technique.

Fluorine dating

Bones can be dated using fluorine dating. Bones absorb the chemical element fluorine from the soil in which they are immersed. The longer they are there, the more fluorine they absorb. Like stratigraphy, this is a relative dating technique.



Source 3 Different artefacts are found in different strata (or layers). These are generally positioned according to their age. Artefacts found in stratum A will be more recent than those found in stratum E.

Radiocarbon dating

Radiocarbon dating is a complex technology that is more accurate than stratigraphy and fluorine dating. It is an absolute dating technique. All living things contain a particular type of carbon called C14, which is why we are called carbon-based life forms. This carbon is continuously renewed while an organism is alive. Living things stop absorbing C14 when they die. C14 is radioactive, which means that, over time, it breaks down at a known rate into a different type of carbon. Scientists use special equipment to work out how much C14 is still present in once-living organisms. Using that information, they can work out how long ago the organism died, and therefore how old it is.

Dendrochronology

Dendrochronology refers to tree-ring dating. Scientists can date a tree by studying the growth rings in a cross-section of its trunk (see Source 5). Each year in a tree's life, a new ring forms. It varies in shape and width according to the conditions that year. It has two parts: a light part (spring growth) and a dark part (summer/autumn growth). Scientists can study these rings and can compare rings between trees to determine their age.

Sometimes experts can calculate the relative age of wooden artefacts, such as bowls or floorboards. This is possible if they can match the ring patterns in the wood with those of local trees of the same species.



Source 5 Trees grow a new ring every year.



Source 4 Radiocarbon dating would determine the likely age of mummified human remains such as these. This corpse was found in central Asia.

Other scientific techniques

DNA analysis

All living organisms (except some viruses) contain deoxyribonucleic acid, or DNA. DNA holds the genetic code that determines how a living thing develops and operates. It is comparable to the ones and zeros that make up computer code and tell your software what to do. DNA is sometimes preserved in the remains of once-living organisms. Scientists can learn a lot from studying DNA. They can tell what type of organism it is. They can also tell how closely related it is to other species and to other individuals of the same species. For example, they can study the DNA of ancient remains and determine how closely related they are to modern humans.

Ice-core sampling

This technique works in a similar way to stratigraphy. Ice-core samples are long cylinders of ice that have been drilled from thick ice sheets. These samples are most commonly taken in the polar ice caps of Antarctica and Greenland, or from high mountain glaciers all over the world. As ice forms in the gradually increasing build-up of annual layers of snow, lower layers are older than upper layers. This means that an ice core contains ice formed over many years. Air trapped at various sections along an ice core, such as the one shown in Source 6, provides evidence of what the atmosphere was like at different periods in the past. Scientists can then form conclusions about the climate at a particular time.



Source 6 Scientists collecting ice-core samples in Antarctica



Source 7 Analysis of the fossilised pollen in this soil core allows researchers to find out how plant life in a particular area changed over thousands of years.

Palynology

Palynology is the study of microscopic organic compounds (such as pollen) that are found in soil. Taking soil cores enables scientists to analyse fossilised pollen and find out how plant life in a particular area has changed over thousands of years (see Source 7).

Check your learning 7.4

Remember and understand

- 1 In your own words, describe each of the scientific techniques covered in this section.
- 2 Describe how DNA analysis can help historians to better understand a source.

Apply and analyse

- 3 Explain why it is important to be able to date sources.
- 4 Imagine you found human remains at an archaeological dig. Which methods would be best suited to dating these remains and why?

Evaluate and create

- 5 Explain which dating technique you think is the most accurate or the most reliable. Justify your answer.
- 6 Study the evidence about the age of the Sphinx in the following Key concept section. Determine how old you think the Sphinx is. Make sure you support your decision with evidence.

keyconcept: Contestability

The mystery of the Sphinx

Historians and archaeologists disagree about how old the Sphinx is. Different forms of evidence point to different answers, and historians look at various forms of evidence in combination to form an opinion about the Sphinx's age.

Most archaeologists believe that the Sphinx is about 4500 years old, having been built around 2500 BCE, but there are some who believe it is much older.

The Sphinx lies among Egypt's pyramids at Giza. It was carved from an outcrop of limestone rock and was probably once painted. The Sphinx has been studied by many scholars and scientists. There is much we know but also a great deal we do not. For example, whose face is represented on this monument? How and why was the face and nose of the Sphinx damaged? Are there tunnels beneath it? How old is it?

HISTORICAL EVIDENCE

Between the front paws of the structure there is a tablet inscribed with hieroglyphs (similar to those in Source 9). The hieroglyphs describe a dream of the Egyptian king Thutmosis IV, who ruled Egypt between 1424 and 1417 BCE. He ordered that this inscription be made. It includes the statement that the Sphinx was made 'in the days of Khafre, when the world was young'.

The Sphinx lies close to the tomb of the Egyptian pharaoh Khafre, who lived c. 2603–2578 BCE. It is also believed to resemble Khafre.



Source 8 The Sphinx, with the body of a lion and the head of a man

EVIDENCE FROM EROSION

Some archaeologists and scientists believe the Sphinx was built about 9000 years ago. They argue that the erosion on the Sphinx could only have been caused by steady rainfall. The last time it rained steadily in the Sahara was about 8000 years ago.

Other scientists **contest** this evidence. They argue that the erosion could have other causes. The erosion could also have been caused by water rising in the ground under the Sphinx. It moves up into the limestone, and when it evaporates it leaves behind salt, which can cause the limestone to break down.

Finally, there is no evidence of an Egyptian civilisation that existed in 7000 BCE. For the Sphinx to be 9000 years old, there would have to have been an ancient civilisation that pre-dated the Egyptians. This is a tantalising idea, but is it true?

For more information on the key concept of contestability, refer to page 170 of 'The history toolkit'.



Source 9 Stone relief of Egyptian hieroglyphs found at the entrance to a tomb

7C rich task

Studying Aboriginal Australia

In addition to using scientific techniques, historians use a range of other methods to investigate the past. This always involves using a wide variety of sources. To understand the ancient past of Australia, historians use artefacts, photographs, oral accounts and other sources. A combination of sources must be used if a historian is to create a complete picture of the past.

skilldrill

Analysing primary and secondary sources

Sources of the first Australians reveal a mostly semi-**nomadic** people. There is evidence they understood the land and seasons and had great skills as trackers and mimickers (of animal noises, for example). They adapted the natural resources they found to:

- build their shelters
- manage their environments
- fashion their weapons, tools and musical instruments
- make carry bags, water containers and cradles
- keep themselves warm, fed, watered and alive.

Study the following sources and use them to develop an understanding of how various **Indigenous Australian** groups used natural resources to survive in the harsh Australian environment.



Source 1 A woomera (top), a shell used in rainmaking ceremonies, and a killing stick (bottom)



Source 2 A stone spearhead from the Kimberley region of Australia



Source 3 Two Indigenous men using natural resources to start a fire

Source 4 Hunting techniques among the Iora tribe in the Sydney region

By any standards, the Aborigines were technologically weak but manually adept. They had not invented the bow-and-arrow, but they had exquisite skill as stalkers, trackers and mimics. A competent hunter needs to be able to read every displacement of a leaf or scuffed print in the dust. He must freeze in mid-step and stand unblinking on one leg for half an hour, waiting for a goanna to work up the courage to come all the way out of its log. He must know how to pick up a blacksnake by the tail and crack its head off, as one cracks a whip ... Above all, the hunter needed to know every detail of animal life in his territory – migratory patterns, feeding habits, nesting, shelter, mating. Only thus could a small nomadic group survive.

Robert Hughes, *The Fatal Shore: A History of the Transportation of Convicts to Australia, 1787–1868*, The Harvill Press, London, 1996, p. 12



Source 5 An early 18th-century painting showing Indigenous men hunting birds, entitled *Throwing the spear*, Ballarat Fine Art Gallery

Apply the skill

- 1 Fill in the table to help develop your understanding of Sources 2, 3 and 5.

| Source number | What does the source depict or describe? | How did the activity or item depicted or described in the source help that particular Aboriginal group to survive? | What can you tell about the ancient people's relationship with the land from the source? |
|---------------|--|--|--|
| 2 | | | |
| 3 | | | |
| 5 | | | |

- 2 Write a 100-word paragraph to explain how Indigenous Australians used the land. Make sure you refer to at least two sources provided here.
- 3 How could you find out more information about any of these sources?
- 4 How could you determine the age of the artefacts in Sources 1 and 2?

Extend your understanding

Historical sources are often more useful to a historian when he or she can access additional sources of information about a particular source. Look at the Aboriginal rock art in Source 6.

- 1 What can you tell about the people who painted this, just from looking at it?
- 2 Do some research on the Internet to find out more about the people who lived at Injalak Hill. What more can you tell about the source using the additional information you have found?
- 3 What techniques could you use to determine how old this rock art is?



Source 6 Aboriginal rock art at Injalak Hill, Arnhem Land

7.5 Conserving and protecting sources

Historical sources can be very fragile. Once exposed to the open air, weather, pollution and humidity, many items will quickly deteriorate. In addition, sources may be stolen or broken by careless handling. If a source is important, it needs to be conserved to secure its value for future generations.

Tourist numbers are growing rapidly in places such as Pompeii and the Indigenous art caves in the Kimberley. Too much trekking over the same ground, too much touching and too much breathing in a confined space can damage sources, especially if they are very old and fragile. In addition, such actions may sometimes cause offence to others, or show disrespect to others' beliefs.

Conservators are now taking a range of measures to protect certain objects and places from overexposure. For example, Indigenous cave art is often fenced off. Such an action respects the spirituality of Indigenous people but also protects this ancient art from damage. Another example is the inclusion of certain old buildings in Australia and around the world on heritage lists, which ensures their protection and conservation.

Many sources are stored in libraries, archives, art galleries and public museums where they can be cared for and preserved. Valuable, fragile or very important sources can usually be viewed but not borrowed, touched or removed. Some examples include:

- the Mitchell Library in the State Library of New South Wales, which houses a huge collection of historical sources on Australia
- the Bunjilaka Aboriginal Cultural Centre at the Melbourne Museum, which aims to 'keep alive' the oral stories and history of Victoria's Koorie people. In this case, conservation is about making sure stories are not forgotten.

Venues such as museums and galleries provide security and proper storage facilities. Their design also sets the right environmental conditions. Some items, for example, must have muted light or low humidity. Think how your clothes fade when you wear them outside in the sun a lot. It is important to protect historical sources from such damage. In addition, these institutions have staff who know how to restore and repair damaged items. They also know which artefacts are the most important to conserve, because conservation can be expensive.



Source 1 A conservator restoring an ancient statue of Marcus Aurelius' horse. Marcus Aurelius (121–180 CE) was Roman emperor for the last 19 years of his life.

keyconcept: Evidence

Preserving our heritage



Historical sources are part of our heritage. They are a reminder of the glories and terrors of past times, and the mistakes and great advances made. They remind us where we have come from and what shaped our societies and cultures. They give us a sense of who we are as a people. Conserving these remnants of the past ensures that future generations will be able to appreciate a shared heritage.



Source 2 The Gallery of First Australians in the National Museum of Australia in Canberra includes this display, which provides evidence of the strong connection Torres Strait Islanders had with the sea. The museum conserves these sources in order to maintain this part of Australian history.



Source 3 The Pintupi Aborigines' women's Dreaming site

It is important to conserve not just our recent past but also our ancient past. Some groups want to ban access to significant Indigenous sites in order to aid their conservation. Large numbers of tourists visiting a site can both physically damage it and can be regarded as disrespectful.

Source 3 shows a sacred women's Dreaming site belonging to the Pintupi Aborigines. Some people think public access to such sites should be limited in order to conserve it.

For more information on the key concept of evidence, refer to page 167 of 'The history toolkit'.

Check your learning 7.5

Remember and understand

- 1 In your own words, describe what conservation is.
- 2 List the different reasons for conserving historical sources.

Apply and analyse

- 3 Explain what precautions museums put in place for fragile artefacts and why.
- 4 Outline the reasons for banning access to popular Indigenous sites.

Evaluate and create

- 5 Justify whether you think access to significant Indigenous sites (like the one shown in Source 3) should be limited.
- 6 Create a plan for conservation of an important source of history in your community. Think about why it is important and what factors may cause it to be damaged.

7D rich task

Conserving ancient sites

In order to conserve and restore ancient historical sites, historians need to understand what these sites used to look like, how they were constructed and how they may have been damaged over the years. Conservation projects are expensive and time-consuming, so historians need to do extensive research to understand a site before conservators can accurately restore it.

This rich task looks at two major conservation projects: the Gate of Ishtar in Iraq and the Tomb of Menna in Egypt.

skilldrill

Identifying and locating relevant sources about ancient sites using ICT

Researching ancient sites to understand why they are significant, what they were like in the ancient past and how they have changed is an important part of the work that archaeologists, historians and conservators do. The first part of this research involves identifying and locating different sources to help them. To begin such research, follow these steps:

Step 1 Construct a table to organise your thoughts and direct your research. Begin by listing the things you already know about the ancient site (such as where it is, what civilisation it was built by, and anything you know about that civilisation). Then list the things you still need to find out about the ancient site (such as who built it, how it was built, what it looked like when it was built, what it looks like today, what it was used for, how and why it was damaged, and whether or not it is worth conserving).

Step 2 Use the questions you have listed in your table to create keywords and search terms for an Internet search.

Step 3 Conduct an Internet search to gather relevant sources and to answer your questions about the ancient site. You may also like to find images of the site and any conservation work that has been done so far.

Step 4 Remember to assess the reliability of the sources you have collected. Think about who wrote them and why. Also be aware of the types of websites you collected them from. Were they reputable? A set of guidelines to help you identify relevant and reliable sources on the Internet is included in 'The historian's toolkit' in this book.



Source 1 Detail of an ox on the front wall of a reconstruction of the Ishtar Gate

Source 2 An artist's impression of a procession entering the city of Babylon through the Ishtar Gate





Source 3 The entrance to the Tomb of Menna in Luxor, Egypt



Source 4 Detail of a wall painting from the interior of the Tomb of Menna

Apply the skill

- 1 Conduct an Internet search to locate and identify relevant sources related to these ancient sites:
 - a the Ishtar Gate – the main entrance to the ancient walled city of Babylon built around 575 BCE, now part of modern-day Iraq
 - b the Tomb of Menna – the tomb of an Egyptian official in Egypt who died around 3400 years ago, during the rule of pharaoh Amenhotep III.
- Follow the steps outlined above to complete the following table in your notebook.
- 2 Make a list of all of the websites you visited and the sources you gathered.
 - a Which of these sources do you think are the most reliable and relevant? How can you tell?
 - b Which of these sources do you think are not reliable or relevant? How can you tell?
 - 3 Now imagine that the governments of Iraq and Egypt are deciding whether to fund the conservation of these two ancient sites. Make a recommendation about why and how each site should be conserved (if you believe it should).

| | Site 1 – Ishtar Gate | Site 2 – Tomb of Menna |
|--|----------------------|------------------------|
| What I know already | | |
| Where is it? | | |
| What civilisation built it? | | |
| Do I know anything else about it? | | |
| What I still need to find out | | |
| Who built it? | | |
| How was it built? | | |
| What did it look like when it was built? | | |
| What does it look like now? | | |
| What was it used for? | | |
| How and why was it damaged? | | |
| Should it be conserved? | | |

Extend your understanding

- 1 Conduct some further research to find out which organisations are currently responsible for conserving the Ishtar Gate and the Tomb of Menna.
- 2 Conservation projects are expensive, so determine who is funding these organisations to work on the sites.
- 3 What reasons do the organisations give for conserving the Ishtar Gate and the Tomb of Menna?
- 4 Do you think that there are any other reasons to fund the sites' conservation?
- 5 Imagine you are a historian working for one of these organisations. Write a 'funding proposal' paragraph that justifies why your organisation requires funding to continue its conservation work of the site.

Depth study 2: Investigating one ancient society

Ancient Egypt

About 30 000 years ago, the Sahara Desert of north Africa was a grassy plain. It began to dry out around 8000 BCE. This change in climate forced people in the region to move on. Many drifted towards the area next to the Nile River, where the land was more fertile and there was a good water supply. From this simple start developed one of the world's first civilisations – ancient Egypt. It lasted for nearly 3000 years. As the population grew, the society became more structured. Powerful rulers, called pharaohs, expanded Egypt's territory. Huge monuments, temples and pyramids were built that would last for thousands of years.



8A

How did physical features influence development in ancient Egypt?

- 1 The Nile provided the ancient Egyptians with many benefits that allowed their society to develop and prosper. What do you think some of these benefits were?

8B

What shaped the roles of key groups in ancient Egypt?

- 1 The temples at Abu Simbel contain many statues of the pharaoh Rameses II. Why do you think it was common practice in ancient Egypt for pharaohs to immortalise themselves in such ways?



chapter

8

Source 1 A statue of the pharaoh Rameses II in one of the two temples built at Abu Simbel, in southern Egypt, in the 13th century BCE. The temples were a monument to Rameses II and his queen, Nefertari, as well as many Egyptian gods.

8C

How did beliefs, values and practices influence ancient Egyptian society?

- 1 Many Egyptian temples were dedicated to various gods. What does this tell us about the importance of religious beliefs to the ancient Egyptians?

Investigating one ancient society

This depth study offers a choice of five topics:

- Ancient Egypt
- Ancient Greece
- Ancient Rome
- Ancient India
- Ancient China

You must choose AT LEAST ONE of these topics for study.

8.1 Ancient Egypt: a timeline

Egyptian hieroglyphs, such as these, have been essential in unlocking the history of ancient Egypt.



The Great Sphinx of Giza

c. 8000 BCE
People start forming settlements in the Nile valley

c. 3200
earliest known evidence of hieroglyphic writing

c. 2500
building of Great Sphinx and Great Pyramid at Giza; Egyptians start experimenting with mummifying dead bodies

8000 BCE

3000

2000

Predynastic period
8000–2700 BCE

Old Kingdom
2686–2180 BCE

Middle Kingdom
2055–1730 BCE

c. 3000
Egyptians start building walled towns and villages; the first buildings are made of mud brick.

c. 2100
Book of the Dead starts being used in funeral ceremonies

Source 1 A timeline of some key events and developments in the history of ancient Egypt

c. 3100
kingdoms of Upper and Lower Egypt unite as one country under the first pharaoh, Menes

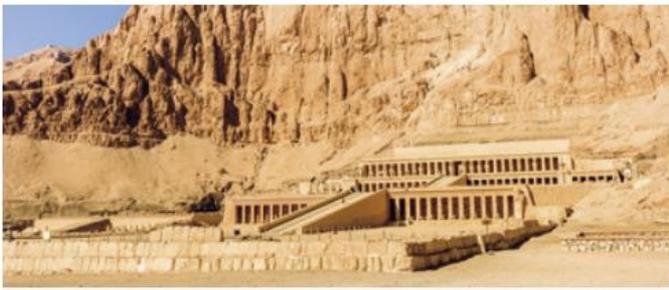
c. 2650
first stone pyramid is built in Saqqara for the pharaoh Djoser



The Djoser pyramid is the oldest building in the world made from cut blocks.



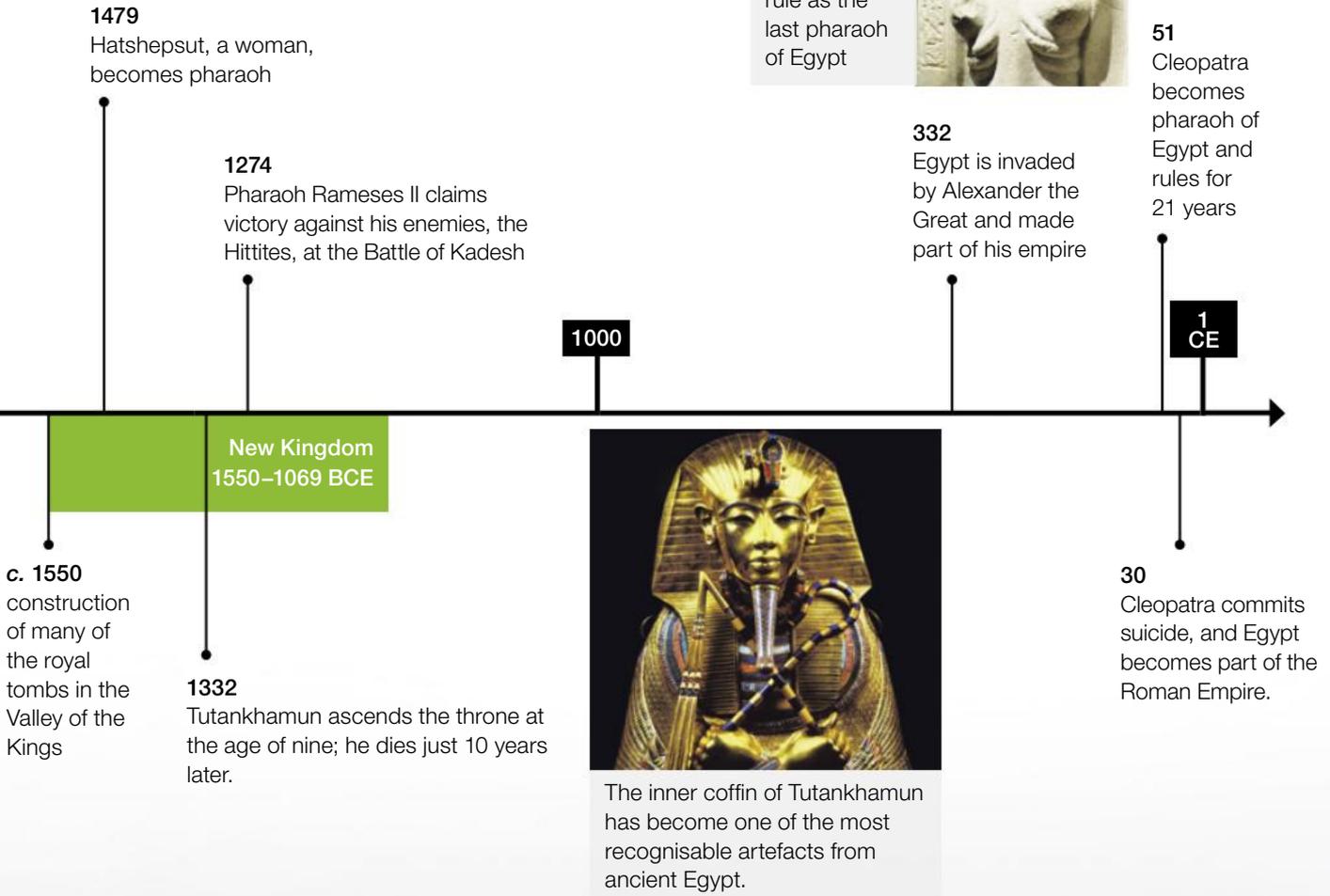
8A How did physical features influence development in ancient Egypt?



Temple of the pharaoh Hatshepsut in the Valley of the Kings, near Luxor



This bust of Cleopatra was created during the time of her rule as the last pharaoh of Egypt



Check your learning 8.1

Remember and understand

- 1 When did people first begin to settle in the Nile valley?
- 2 When were the Great Sphinx and the Great Pyramid at Giza built?
- 3 Who was Cleopatra? In what year did she die?

Apply and analyse

- 4 Using the timeline, calculate the year in which Tutankhamun was born.

Evaluate and create

- 5 The timeline shows that ancient Egyptian society began in approximately 8000 BCE and ended about 332 BCE. During this period, many historians identify four distinct eras, commonly known as:

| | |
|--------------------------|--------------------|
| a the Predynastic period | b the Old Kingdom |
| c the Middle Kingdom | d the New Kingdom. |

 Conduct some Internet research to find out why these periods were named in this way.

8.2 The Nile

Ancient Egypt was a long, narrow country in north-eastern Africa. The world's longest river, the Nile, ran the length of the country. Ancient Egyptian lands were also surrounded by a huge **desert**. Both of these geographical features played very important roles in the development of ancient Egyptian society.

The Nile begins in central Africa and flows north into the Mediterranean Sea. Ancient Egypt's desert environment made the Nile a very important geographical feature. It was so crucial for the society's survival that the people worshipped it as a god. They called this god 'Hapi'.

The Nile has three main sources – the White Nile, the Blue Nile and the Atbara River. The Blue Nile and the Atbara River begin in the highlands of central Africa. Every summer, they are flooded by melting snow and heavy rains. These waters gush into the Nile, carrying a load of dark mountain silt – soil that is rich in nutrients. Every year, this increase in water caused the Nile to burst its banks and flood parts of Egypt.

Today, dams have been built along the Nile to prevent it from flooding, but in the days of ancient Egypt, these dams did not exist. Every year in June, the Nile would flood its banks and leave a pile of dark, fertile soil all over the land nearby. This flooding season was known as the **inundation**. As soon as the floodwaters went back down, the farmers would plant crops such as barley and other grains. These crops would grow very quickly in this fertile soil.

The ancient Egyptians called the fertile land with rich dark soil around the river the 'Black Land'. This was where most people lived. On each side of the Nile, beyond the Black Land, were large areas of desert. The ancient Egyptians named these areas the 'Red Land'. Hardly anyone lived in the Red Land.

The Nile was important for other reasons too. It provided fresh water for drinking and bathing. The ancient Egyptians used spears and nets to catch fish in the Nile. They also caught the birds, such as ducks and geese, that lived near it and used them for food. They picked wild reeds, called **papyrus**, which grew alongside the river. The ancient Egyptians used these reeds to make a type of paper and boats. The Nile also allowed the ancient Egyptians to travel quickly from place to place, so that they could trade with each other.

Source 2 An aerial photograph of the Nile showing the fertile valley (Black Land) and the bordering desert (Red Land)



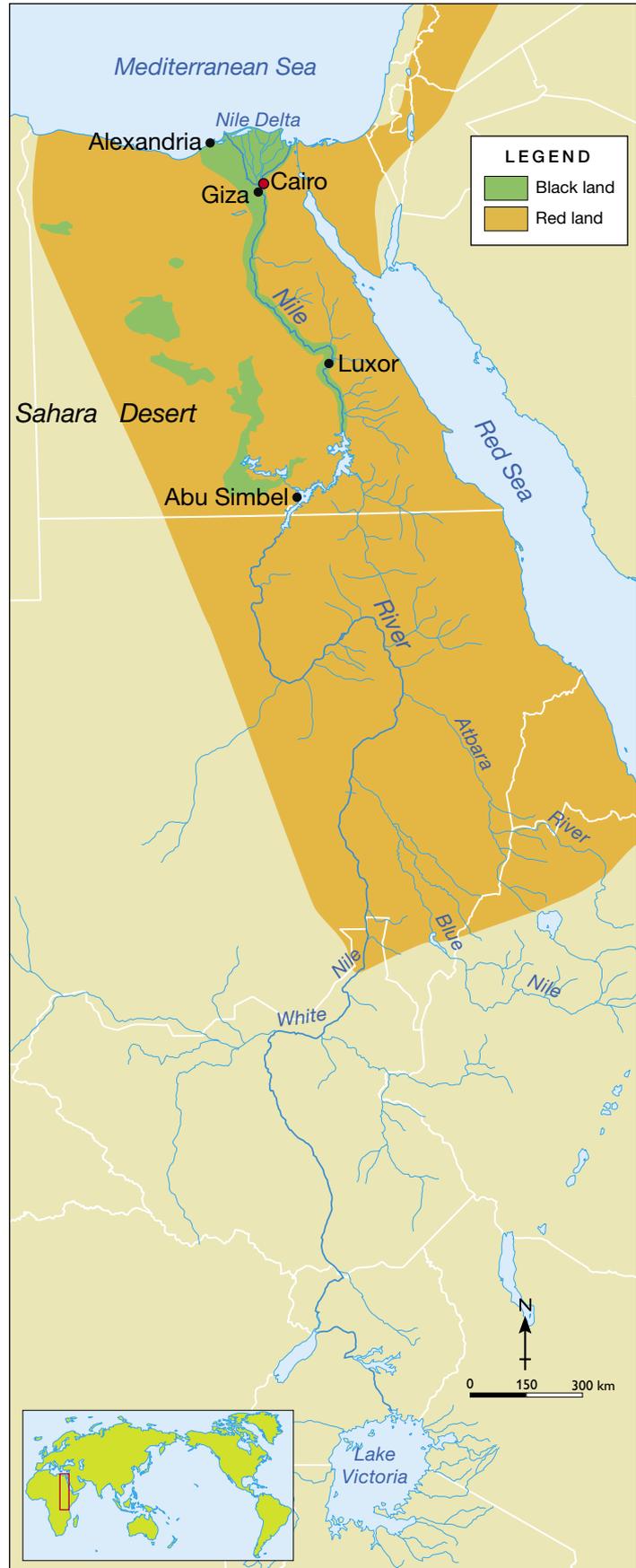
Source 1 The boats and houses are modern, but this Nile scene is otherwise much as it would have been in the times of ancient Egypt.



8A How did physical features influence development in ancient Egypt?



ANCIENT EGYPT AND THE NILE



Source 3

Source: Oxford University Press

The importance of the Nile

The Nile was the lifeblood of ancient Egyptian society. It provided water for drinking and bathing; fertile soil for growing crops; fish and water birds for eating; and a means of transporting goods. The Nile also played a central role in the spiritual and religious beliefs of the Egyptians.

Pleasure boats moved travellers up and down the river. Some boats were adapted as funeral boats to carry the bodies of pharaohs to their tombs.

The riverside papyrus plant was used to make a type of paper (also called papyrus), as well as boats, baskets and furniture.

River wildlife included fish, birds, frogs, crocodiles, eels, hippopotamuses and snakes. Ducks and geese were hunted with wooden sticks or caught in nets.

Bricks were made from riverbank mud. It was sometimes mixed with straw for strength. The mud bricks were packed into moulds and left to dry hard in the sun.

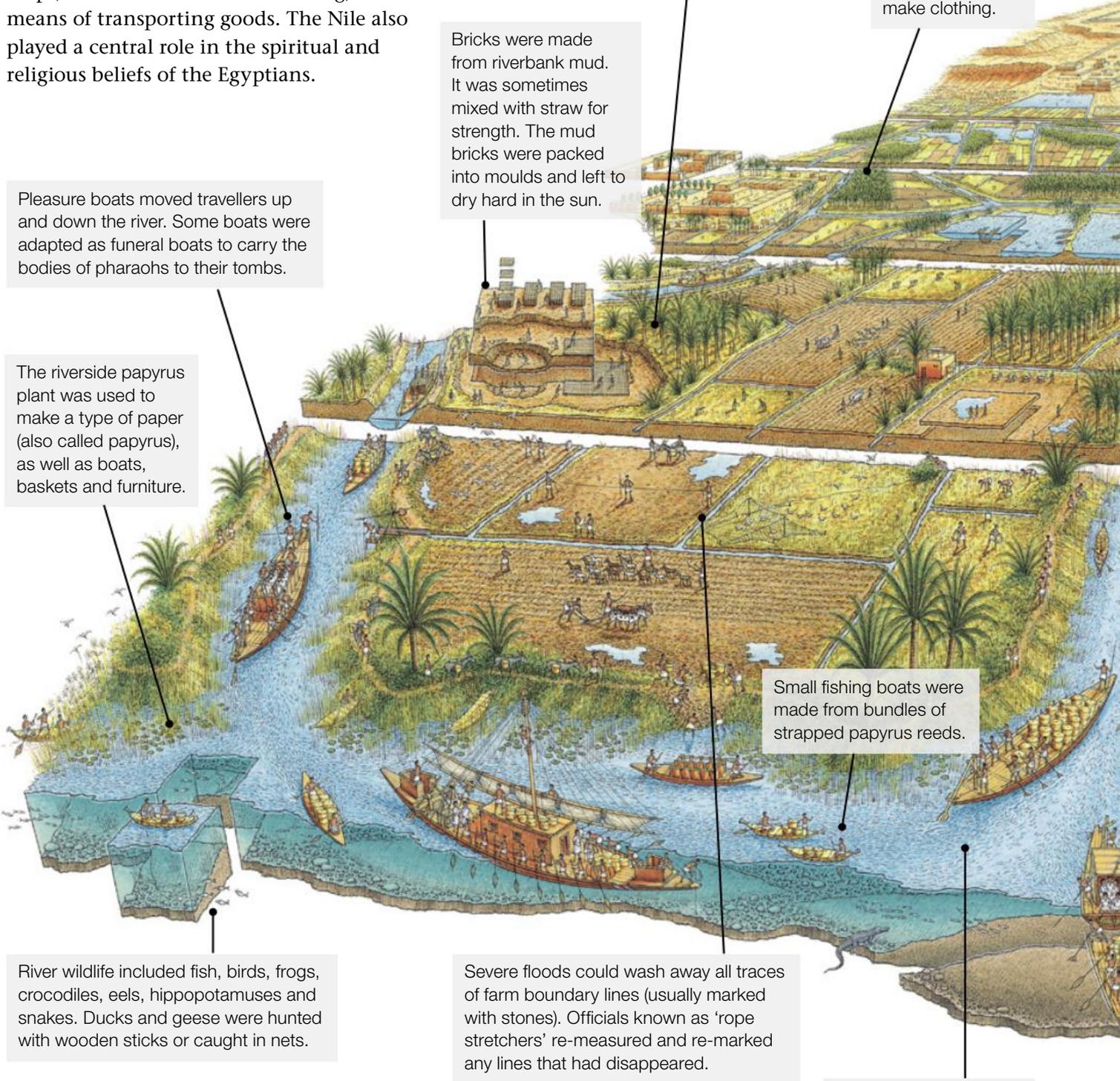
Severe floods could wash away all traces of farm boundary lines (usually marked with stones). Officials known as 'rope stretchers' re-measured and re-marked any lines that had disappeared.

Crops grown included wheat, barley, lentils, beans, onions, cucumbers, grapes, figs and dates. Trained baboons were sometimes used to pick fruit growing too high for people to reach.

Flax plants were turned into a cloth called linen to make clothing.

Small fishing boats were made from bundles of strapped papyrus reeds.

The river provided fresh water for drinking, beer making, cooking, washing and irrigation.



Source 4 An artist's impression of the central role that the Nile played in ancient Egyptian life

8A How did physical features influence development in ancient Egypt?

Farmers provided labour (during the inundation) to build structures such as the pyramids.

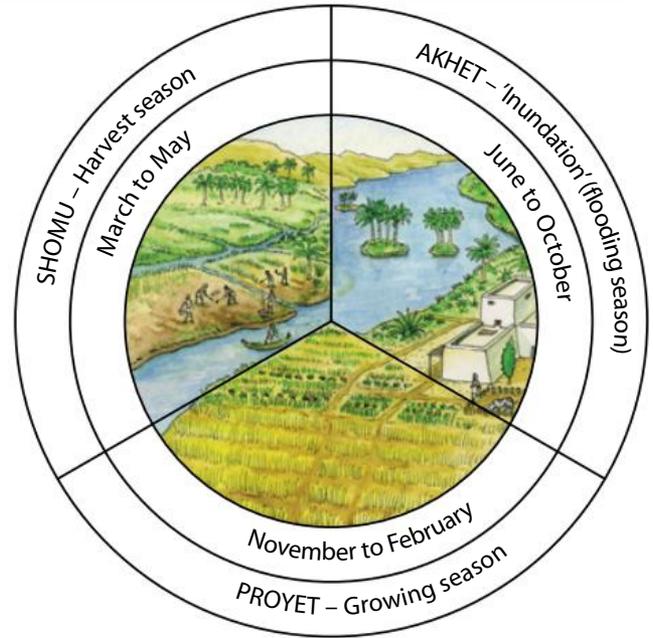
When the Nile flooded (known as the inundation) the river level rose around 8 metres. The silt it left behind on the floodplains fertilised the soil.

Villages were built on raised mounds above the usual flood line.

A network of canals (and later reservoirs) directed and stored river water for use in irrigation.

A *shaduf* was used to raise water from the river and direct it into irrigation canals.

Merchant boats and barges moved trade goods to and from markets. Barges also transported the massive stone blocks used to construct the pyramids.



Source 5 The ancient Egyptian 'seasons'

Check your learning 8.2

Remember and understand

- 1 What are the three main sources of the Nile?
- 2 At what time of the year would the Nile flood? What caused it to flood? Why does the Nile no longer flood?
- 3 Why did the ancient Egyptians call the land along the banks of the Nile the 'Black Land'?
- 4 Study the illustration and labels in Source 4.
 - a What devices did the ancient Egyptians use or make to help store and distribute water to fields?
 - b For what different purposes were boats used?

Apply and analyse

- 5 Continue to study Source 4. How did the Nile influence the ways in which buildings were made and villages designed?
- 6 Look carefully at Source 5. If you had lived in ancient Egypt, what 'season' would it be now? What would be happening?

Evaluate and create

- 7 In groups, discuss how people would have built boats from reeds. Draw sketches and suggest likely design, tools, measurements and so on.
- 8 Use the Internet to discover how a *shaduf* worked. Suggest a modification or addition that would have made it work better.
- 9 You are providing the voiceover for a feature documentary on the Nile. Write the segment in which you explain why it flooded every year, and how this benefited the people of ancient Egypt. Make your report interesting – remember it is a speaking role.

8.3 The climate of ancient Egypt

Ancient Egypt was located within what is now the biggest desert in the world – the Sahara. This meant that the climate of Egypt was incredibly hot and dry.

The desert

Being surrounded by desert provided Egypt with some security against attacks. Any army that wanted to attack would have had a long, hot walk if invading from the east or the west.

The desert around ancient Egypt was inhabited by many different animals that were hunted by the ancient Egyptians for food. These animals included gazelles, hares and foxes. The desert was also the source of minerals, rocks and metals, which the Egyptians used for building houses, pyramids, statues and tombs, and making weapons and jewellery. The ancient Egyptians were able to trade many of these resources, as well as the products they made from them.

How the climate influenced lifestyle

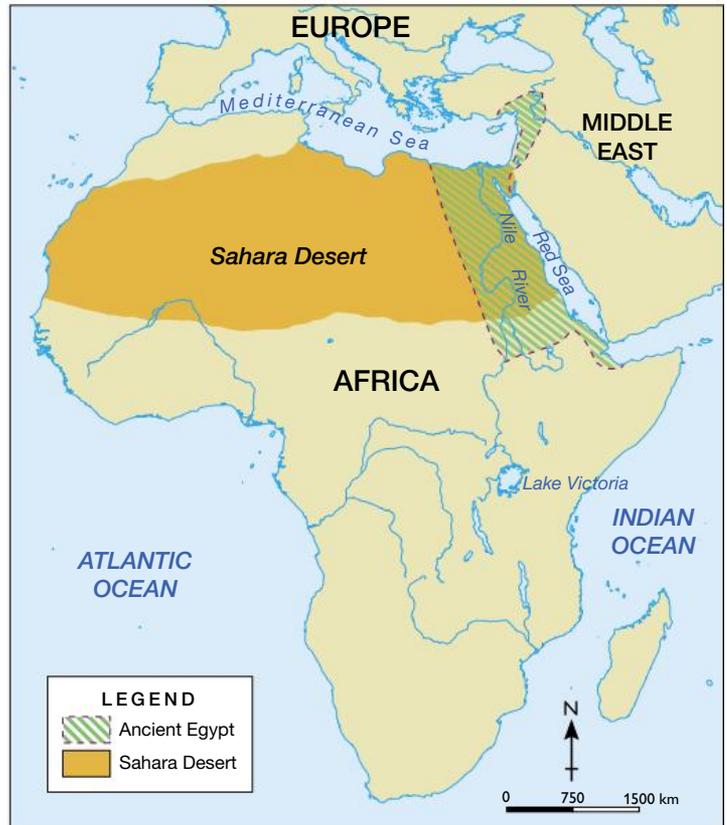
Living in a very hot and dry climate, the ancient Egyptians mostly lived an outdoors lifestyle. Most of them worked outside as farmers, fishers, builders and merchants. People cooked and often slept outside their homes (frequently on the roof) because of the heat.

Houses

Rich or poor, most Egyptians lived in houses that were similar in design. They had flat roofs and were made from sun-dried mud bricks. Most houses were single-storey structures.

The one-room homes of poor farmers had dirt floors. In urban areas, houses were joined, a bit like apartments and terrace houses are today.

LOCATION OF ANCIENT EGYPT IN THE AFRICAN CONTINENT

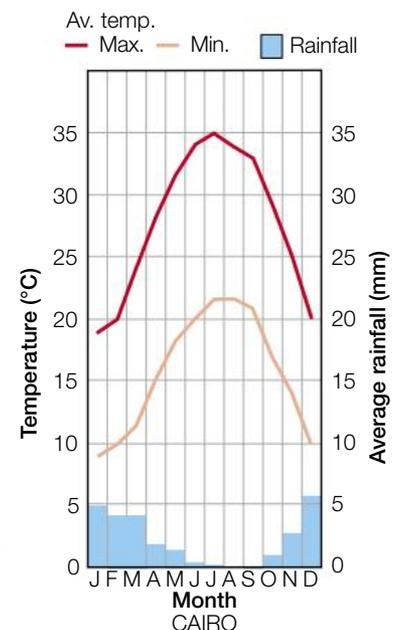


Source 1

Source: Oxford University Press



Source 2 A headrest used by the wealthy while sleeping. It allowed air to circulate around the head and neck.



Source 3 Climate graph for the city of Cairo (near the pyramids at Giza)

Fashion

Because of the heat the people of ancient Egypt dressed very lightly. Men (including the pharaoh) often went bare-chested and wore short linen tunics. Women usually wore long linen dresses. Linen is a natural fabric, made from the flax plant, that allows perspiration to evaporate more easily. Most clothing was white, which is cooler than darker colours because it reflects the heat. Leather or papyrus sandals were sometimes worn by the rich, but most people went barefoot. Children and slaves were usually completely naked.



Source 4 Papyrus sandals from ancient Egypt. These would have been very cool to wear.

keyconcept: Evidence

Living with dust and glare

Because of the desert surrounding ancient Egypt, dust, glare and wind-blown sand were a fact of life. Eye infections were common. Stone carvings have been found in tombs that show groups of blind people. Ancient papyrus texts show that bat blood was one treatment for eye problems. Another treatment was to rub a paste of mashed human brain and honey over the affected eye. Both men and women wore heavy eye make-up, called kohl, to help protect their eyes from dust and glare.

Men and women would also wear wigs, usually over a shaved scalp. Shaving kept heads cool (when at home, without wigs) and allowed scalps to be kept clean. Sometimes, a cone of solid perfumed fat was worn on top of a wig on special occasions (see Source 5). As it slowly melted in the heat, sweet-smelling liquid dripped over the face and upper body, cooling the skin.

For more information on the key concept of evidence, refer to page 167 of 'The history toolkit'.



Source 5 This detail from an Egyptian tomb shows a woman wearing heavy eye make-up and a cone of scented fat on top of her wig.

Check your learning 8.3

Remember and understand

- 1 Where did the people of ancient Egypt often cook and sleep? Why?
- 2 List three different resources provided by the deserts to the people of ancient Egypt.

Apply and analyse

- 3 If you lived in a location such as ancient Egypt, what might the advantages and disadvantages be in shaving your head and wearing a wig?
- 4 Examine Source 3.
 - a During which months, on average, is there no rain in Cairo? What is the average temperature for each of these months?
 - b Melbourne's highest rainfall occurs from September to December, with monthly rainfall averaging between 58 and 66 millimetres in those months. Write a few sentences describing some of the differences between average rainfall in Cairo and average rainfall in Melbourne.

Evaluate and create

- 5 A link to a video of Egypt and its desert environment is available on the [obook](#). Prepare a creative response to this experience by writing one of the following:
 - a short poem
 - a diary entry that you might have recorded if you had been there.

8A rich task

Irrigation in ancient Egypt

The annual inundation (flooding) of the Nile was so important to the ancient Egyptians that they based their lives around it. Flooding happened in a season the Egyptians called *akhet*. As the flood receded, the fertile silt left on the ground near the river ensured perfect conditions for *proyet*, the growing, which was when farmers would plant and grow their crops. The crops would continue to grow until they were picked in *shomu*, harvest season. During *proyet*, the growing season, the ancient Egyptians needed to irrigate (water) the crops they had planted. They experimented with many different kinds of irrigation over the course of their history.

skilldrill

Interpreting primary sources

Primary sources are things that were created during the time being studied. They can be documents, objects, paintings and other sources that provide us with a firsthand account of what life was like in the past.

Because they are firsthand accounts, primary sources often convey the creator's point of view, attitudes and values. It is important that you be able to identify and describe these elements in their work. Use the following steps:

Step 1 Ask yourself what factual information is conveyed in this source. (Be careful: sometimes things that are presented as fact are not always accurate, so you



Source 1 Canals were a very important form of irrigation in ancient Egypt. A simple Egyptian canal system is depicted in this painting, found in the tomb of a commoner by the name of Sennedjem.

might need to think about whether the information can be verified. Where else might you look to check and make sure those 'facts' are accurate?)

Step 2 Think about how the world described or depicted in the source is different from the world you live in today. What do you already know about what the creator of the source and the people around him or her believed? How would you feel if you were in the creator's shoes?

Step 3 Ask yourself what opinions are expressed in the source. If the source is written, ask yourself which specific words or phrases show how the writer feels about what he or she is describing.

Step 4 Ask yourself what is implied in the source. For instance, people do not always spell out what they are thinking when they write something. The reader needs to use clues in the text to 'read between the lines' and infer meanings that are not spelled out.

The following primary sources provide us with a range of evidence about the beliefs, values and attitudes of the ancient Egyptians towards the Nile and the annual inundation, as well as important types of irrigation technology that were developed at different times throughout ancient Egyptian civilisation. Use the steps described above to complete the tasks that follow.

For a detailed description of this skill, refer to pages 176–179 of 'The history toolkit'.



Source 2 *Shadufs* were an important form of ancient Egyptian irrigation technology. This painting of a man drawing water from the Nile with a *shaduf* was found in the tomb of Ipuy, at Deir el-Medina, Egypt.

Source 4

Hail to you, Nile River! You show yourself over this land, and come to give life to Egypt! Your source is mysterious, but we celebrate the day when you come to us! Watering the orchards created by Ra, to cause all the cattle to live, you give the earth to drink, inexhaustible one!
...

Lord of the fish: during the inundation, no bird lands on the crops. You create the grain, you bring forth the barley, you make sure the temples will last for eternity. If you stop your toil and your work, then all that exists in our world will be in trouble.

Extract from 'Hymn to the Nile', written c. 2100 BCE in ancient Egypt

Apply the skill

- 1 Read Source 4 carefully.
 - a What factual information is conveyed in this source?
 - b What does it tell you about the writer's beliefs and attitudes regarding the annual cause of the inundation? (Remember to identify the specific words or phrases in the source that support your conclusion.)
 - c What can you infer about the writer's values?



Source 3 Wooden waterwheels were another important irrigation technology in ancient Egypt. This traditional waterwheel near Luxor, Egypt, is similar in design to those used in ancient times. The water comes out of the well on a second wheel carrying clay water jugs (shown to the right). This water then supplies the irrigation network.

- 2 Use Sources 1, 2 and 3, together with information gathered on the Internet, to compare different irrigation methods in ancient Egypt. You should look at canals, *shadufs* and waterwheels.

| | When was this form of irrigation technology invented? | How did it work? |
|---------------|---|------------------|
| Canals | | |
| <i>Shaduf</i> | | |
| Waterwheel | | |

Extend your understanding

Using the results of your research, write a short report on the history of irrigation technology in ancient Egypt. Make sure you:

- include an introduction explaining why irrigation was so important in ancient Egypt
- include a main body, broken into sections (with subheadings) that describe each main type of ancient Egyptian irrigation technology (for example, 'Canals', 'Shadufs' and 'Waterwheels')
- explain within each section when this particular type of irrigation technology was invented and how it worked. Include diagrams if you wish.

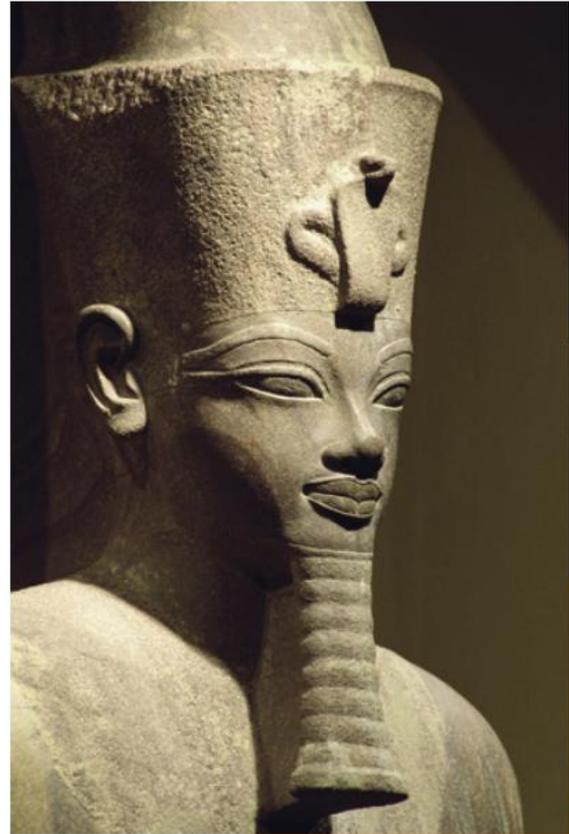
8.4 Key groups in Egyptian society

The society of ancient Egypt was well organised. Ancient Egyptians had a central government and, from the 15th century BCE, they also had a professional army. People knew what their social responsibilities were. Some of these roles were shaped by the society's laws and traditions. Some were determined by religious beliefs. Other roles were determined by a person's wealth and abilities (such as whether they could read and write).

The society of ancient Egypt was a **hierarchy**. At the top was the royal family: the pharaoh and his family. At the bottom were the slaves and the poorest of the poor farmers.

Men usually did the jobs their fathers did. They learnt the skills a bit like apprentices learn trades today. Education was the key to improving a person's position in society. A merchant, or even a farmer, could do this by learning to read and write.

Source 1 A stone head of pharaoh Amenhotep III, made in the early 14th century BCE. Pharaohs were at the top of the social hierarchy in ancient Egypt.



Check your learning 8.4

Remember and understand

- 1 Place these social roles in order (from most to least important) according to the values of ancient Egyptian society: potter, merchant, pharaoh, farmer, priestess, vizier, scribe.
- 2 How might a farmer's social role and standing potentially change if he learnt to read and write?
- 3 Explain why almost all scribes in ancient Egypt were men.

Apply and analyse

- 4 Compare and contrast the roles of a chief priest and the vizier in ancient Egypt.

Evaluate and create

- 5
 - a In groups, use Source 2 as a guide to help you draw up what you think the social hierarchy in Australia today might look like.
 - b Discuss your findings as a class. Decide to what extent your modern social hierarchies are an example of continuity and change when compared with the social hierarchy of ancient Egypt.

Source 2 The social hierarchy (structure) of ancient Egypt



Pharaoh

- Kept life in balance
- Was considered a god-king
- Had great wealth
- Was the highest priest in the land



Vizier

- Was second-in-command to the pharaoh
- Was the main adviser to the pharaoh
- Supervised other officials and acted as judge for law breakers



Chief priest

- Represented the pharaoh
- Was permitted to enter the inner temple where the statues of the gods were kept
- Was responsible for cleaning the temple god every day and bringing it food



Nobles

- Governed smaller regions within the kingdom
- Collected taxes



Priestesses

- Were married to nobles and senior officials
- Were responsible for the care of the temple goddess and required to sing and play music if the pharaoh visited their temple



Scribes

- Could read and write
- Were responsible for recording the decisions and orders of the pharaoh
- Kept tax records for the vizier and the accounts for the army



Soldiers

- Were professional, full-time soldiers



Merchants

- Traded goods such as linen, papyrus and grain from Egypt to other places
- Imported goods such as wood (e.g. ebony), ivory, copper and animals



Craftsmen

- Were skilled workers such as potters and stonemasons who made necessary goods for everyday use and objects for the temple



Farmers

- Grew crops such as wheat and barley
- Tended animals used for food and work
- Took on building work during the inundation



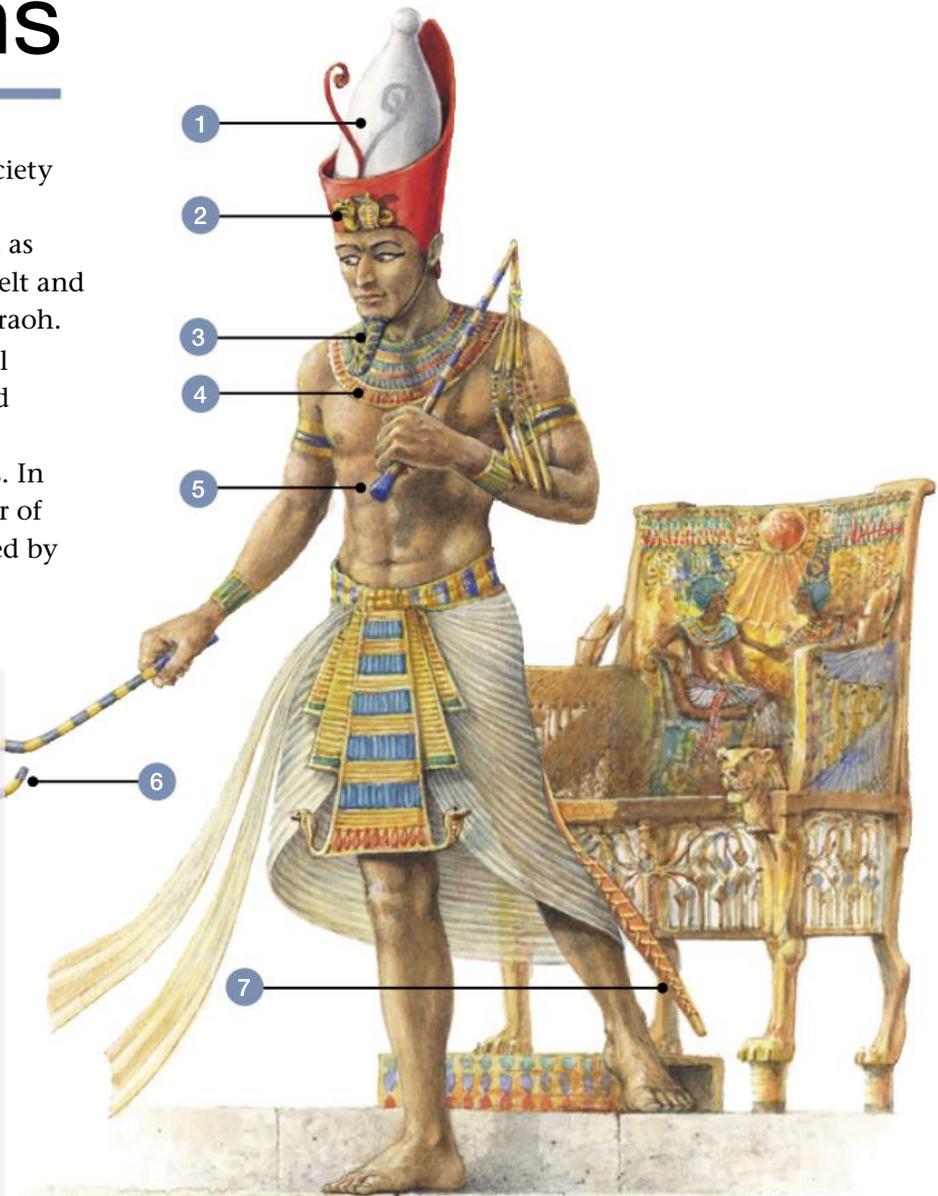
Slaves

- Were usually foreigners (captured in wars)
- Were used as domestic servants, farmhands or mineworkers
- Some worked in the pharaoh's palace

8.5 Pharaohs

The pharaoh was the head of Egyptian society and was almost always a man. Pharaohs were regarded as god-kings, and were seen as descendants of Ra, the sun god. People knelt and kissed the ground when they met the pharaoh.

Pharaohs were very wealthy, owning all the land and its resources. They demanded heavy taxes, which were usually paid to them in the form of grain and other crops. In addition to power, pharaohs had a number of responsibilities, some of which were shaped by law, others by religion (see Source 2).



- 1 A crown symbolised the pharaoh's position as chief ruler. The crown shown here was the official crown; its design is a combination of the white crown of Upper Egypt and the red crown of Lower Egypt that merged to form a united Egypt. Pharaohs also wore a range of other headgear depending on their duties.
- 2 The *uraeus* (gold headpiece shaped like an upright cobra) symbolised magical powers and a readiness to strike.
- 3 A false beard made from goat's hair symbolised the pharaoh's status as a god.
- 4 The heavy jewelled collar symbolised great wealth.
- 5 The flail (whip) symbolised total authority.
- 6 The crook symbolised the pharaoh's role as a shepherd of the people.
- 7 An animal tail (usually from a bull) symbolised strength and fertility.

Source 1 An artist's impression of a pharaoh with his symbols of power

| Earthly responsibilities (shaped by the law) | Divine responsibilities (shaped by religion) |
|--|---|
| <p>The pharaoh was responsible for:</p> <ul style="list-style-type: none"> • directing the government • commanding the army and leading them into battle • protecting the people and keeping peace and order • making all laws, and sometimes making decisions in the courts • managing building, mining, trade and irrigation. | <p>The pharaoh was responsible for:</p> <ul style="list-style-type: none"> • acting as chief priest • keeping the gods happy so the Nile flooded every year and harvests were plentiful • choosing priests • overseeing religious ceremonies and festivals • building temples to honour the gods • performing religious duties. |

Source 2 Responsibilities of the pharaoh as god-king

The rulers of ancient Egypt

By about 3300 BCE, the Nile settlements were grouped into two kingdoms: Upper Egypt and Lower Egypt. These united in about 3100 BCE. For the next 2800 years, the unified kingdom of Egypt was ruled by pharaohs, thus creating the world's first national government.

Dynasties

The laws and traditions of ancient Egypt meant that a pharaoh passed on his power as ruler to the son (usually the eldest) of his main wife – in the ancient world, it was common for men to have more than one wife. If the main wife did not have a son, the son of a less important wife would become the new ruler, or **heir**. The period of time where members of the same family ruled was known as a **dynasty**. Sometimes, someone from outside the family seized power and became pharaoh. This meant the start of a new dynasty.

In 332 BCE, Egypt was conquered by the king of Macedon, known as Alexander the Great. He started what was to be the last dynasty in ancient Egypt, known as the Ptolemaic Dynasty. This dynasty lasted until 30 BCE when its last ruler, Cleopatra, committed suicide. After that, Egypt became part of the Roman Empire.

Hatshepsut – 18th-dynasty ruler

Hatshepsut was one of the only female pharaohs. She ruled between about 1473 and 1458 BCE. When she became pharaoh, she wore a false beard, men's clothing and a bull's tail, and changed her name to its male form. She was very ambitious. In her time as pharaoh, she ordered the construction of many buildings, paid for many trading expeditions, and rebuilt trade routes that had been damaged by former invaders.



Source 3 An ancient stone carving of the female pharaoh Hatshepsut

Check your learning 8.5

Remember and understand

- 1 Give two examples each of the pharaoh's divine role and earthly role.
- 2 What was a dynasty, and why did a dynasty usually change?
- 3 How did the Ptolemaic Dynasty end?
- 4 Look carefully at Source 1. Copy and complete this table in your notebook, adding as many entries as you can.

| Item worn or carried by the pharaoh | What it symbolised |
|-------------------------------------|--------------------|
| | |

Apply and analyse

- 5 Pharaohs had religious, legal and political responsibilities. Explain how this would have influenced the way Egyptians behaved towards their ruler.
- 6 Think about some of the items the following people wear or carry to reflect their social position and/or role. For each item, indicate what it symbolises:
 - the Queen of England
 - the captain of the Australian cricket team
 - an Australian High Court judge
 - the principal of your school.

Evaluate and create

- 7
 - a How and why did Hatshepsut adjust her appearance to suit her role as pharaoh?
 - b Do you think people today feel pressured to change their appearance and behaviour when they move into a public leadership role? Discuss with a partner. Give examples if possible.

8.6 Significant individual: Tutankhamun

Tutankhamun (c. 1342–1323 BCE) is the world’s best known pharaoh and one of the most studied figures in history. He was a boy when he became pharaoh in 1332 BCE and only ruled for 10 years, yet his story still captivates people all over the world.

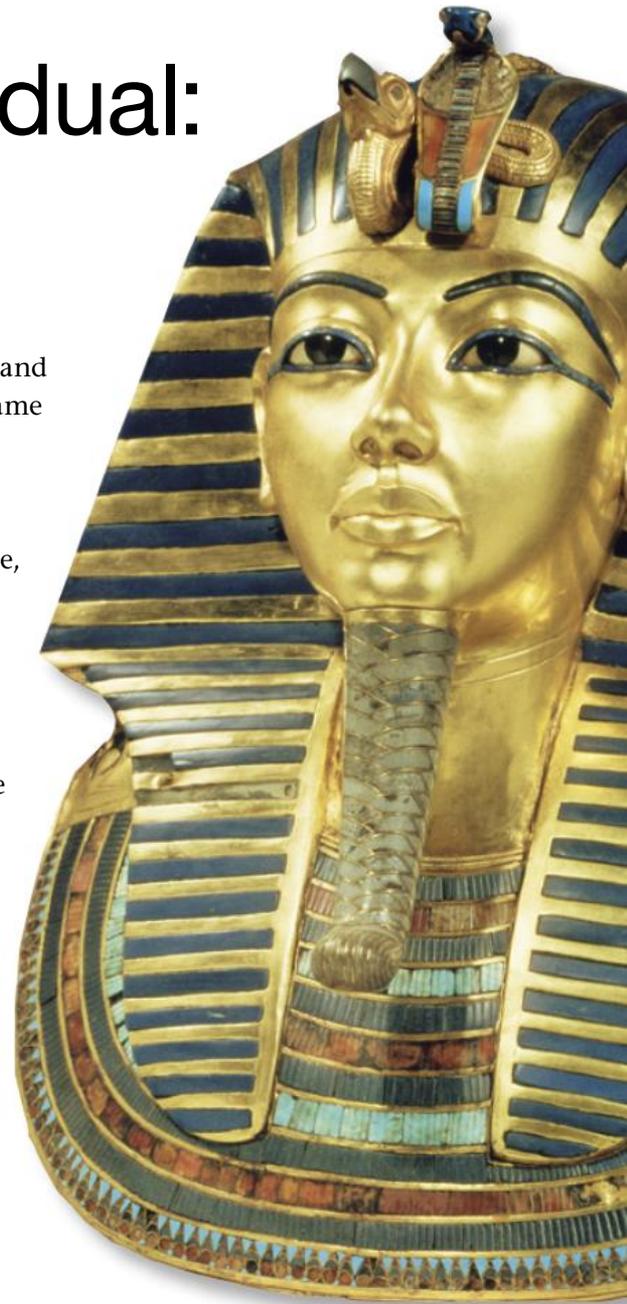
Scientific analyses of his remains reveal that he was about 170 centimetres tall, with a slight bend in his spine. He had an overbite, a cleft palate, buck teeth and an elongated skull. He was only 19 when he died. He did not live long enough to do much that was remarkable. He did, however, change the command of his predecessor, Akhenaten, that the people only worship one god – Aten, the sun god. He also reversed Akhenaten’s decision to move the capital of ancient Egypt to Memphis. Tutankhamun declared that Egypt’s old gods could again be worshipped. He restored their temples, priests and festivals.



Source 1
The mummified head of Tutankhamun



Source 2
The reconstructed head of Tutankhamun



Source 3 The gold mask found fused to Tutankhamun’s head and upper body

Despite his short life, Tutankhamun is significant because his tomb is the only ancient tomb in Egypt so far found not to have been broken into by robbers. It contained over 5300 sources of evidence of his life and burial practices at the time. These sources include his decorated gold throne and his nest of coffins.

The discovery of Tutankhamun

The English archaeologist Howard Carter found the tomb in 1922. It was at the end of a long tunnel in the Valley of the Kings. This was a deep, rocky valley close to the Nile where many pharaohs were buried. Carter reported: ‘At first I could see nothing ... but 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!’

Tutankhamun’s mummy lay within a solid-gold body-shaped coffin (110 kilograms in weight) in the burial chamber. This coffin was enclosed by

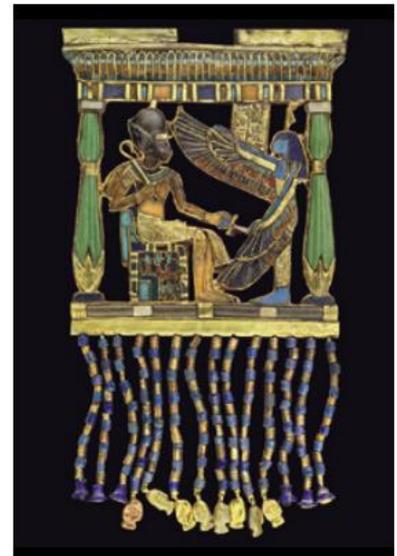
two more coffins. In the treasure chamber next door were four **canopic jars** holding the pharaoh's mummified liver, lungs, stomach and intestines.

His body was covered in **amulets** and jewels, and he was wearing an 11-kilogram solid-gold burial mask inlaid with precious stones.

Carter and his team used hot knives to remove the mask.

They also cut up the body to retrieve the jewels and amulets that were wrapped up in his bandages.

Since then, conservators (people responsible for preserving important historical sources) have been getting more and more worried about the damage being done to Tutankhamun's mummy. When visitors entered the tomb, their breath and body heat caused damage to the mummy and other parts of the tomb. Tutankhamun's remains stayed within his coffin until November 2007, when they were moved into a special, climate-controlled case within the tomb.



Source 4 This pectoral (piece of jewellery like a pendant) was found in the tomb of Tutankhamun. He wore it at his coronation as pharaoh.

keyconcept: Contestability

How Tutankhamun died

To this day, historians cannot agree on how Tutankhamun died. Some historians used to think he was murdered, because there was a hole at the back of his skull and a floating piece of bone behind his eyes. This view has been contested in more recent years.

In 2005, an extensive number of CT scans (special X-rays) were taken of Tutankhamun's remains. These scans led the Egyptian archaeologist Zahi Hawass to conclude that he died of a complication from a broken leg – specifically, gangrene (which is the rotting away of living tissue). He thinks the break in the leg became infected. The hole in the skull, he thinks, might have been a **mummification** accident. Other historians have found evidence to suggest that Tutankhamun might have had malaria, which could have contributed to his death.

For more information on the key concept of contestability, refer to page 170 of 'The history toolkit'.

Check your learning 8.6

Remember and understand

- 1 In one paragraph, explain who Tutankhamun was.
- 2 Why is he regarded by historians as significant?

Apply and analyse

- 3 **a** Why were Tutankhamun's uncovered remains at risk?
b What has been done to help conserve them?
- 4 Explain why the cause of Tutankhamun's death has been contested by historians since his mummy was discovered in 1922.

Evaluate and create

- 5 Compose a letter that Howard Carter might have written to his family the day after discovering and entering Tutankhamun's tomb. Check some websites to learn more about the discovery and the tomb's contents.
- 6 Look at the coronation pectoral of Tutankhamun (Source 4). Use this image as inspiration to design a pendant suitable to be worn by the Australian Prime Minister. Use the Internet to research suitable images and icons to include on the pectoral.

8.7 Other key groups in ancient Egyptian society

To gain a more complete understanding of the ancient Egyptian civilisation, we also need to look at the roles of other key social groups, including women, slaves, scribes and craftsmen.

Women

The role of most women in ancient Egypt was to raise a family. Pregnancy was always a celebrated event. It was common for a woman to have lots of pregnancies, and many women died in childbirth. Girls were often married as young as 12, and were expected to have children quickly. Life expectancy was low. A poor woman might only live until she was 30.

Rich and poor women

Poorer women usually devoted their entire lives to raising their children, keeping house and helping their husbands with planting and harvesting crops.

Upper-class women, such as the wives of pharaohs and nobles, had a more pampered life. They had servants to wait on them, and fine clothing and jewellery to wear (see Source 2). If they were the eldest child, they inherited their father's wealth.

Rights and freedoms of women

The man was the head of the household in ancient Egypt. Yet Egyptian women had more freedom than in many other ancient societies, such as ancient Greece. This may partly be because of Egyptian religious beliefs. The ancient Egyptians saw their world as being controlled equally by male and female **deities** (gods and goddesses).

Women could own land and businesses, keep the children if there was a divorce, and openly breastfeed their children. They could make wills, testify in court and bring legal actions against men. Women could also hold down jobs. For poorer women, a job meant manual labour. They might work on farms, look after animals or become weavers; some might have worked as singers or dancers. Wealthier women might work as priestesses.

Slaves

Many people think that slaves were used to build the pyramids. Actually, there is little evidence to support this. Records suggest that there were not many slaves during the Old Kingdom, when the pyramids were built. Rather, it is thought they were built by peasants and farmers who could not work on the land during the rainy season.

The number of slaves in ancient Egypt did increase during the Middle and New Kingdoms. Most were prisoners of war such as those shown in Source 1 from the Nubian kingdoms south of Egypt. Others were bought and sold at markets, or were unlucky travellers captured by slave traders.

The role of slaves

Most slaves in Egypt lived fairly pleasant lives. Their role often was to be a faithful servant in the households of pharaohs, nobles and priests. They could own land and hire servants. They could marry those who were not slaves. Some talented or beautiful slaves were able to get promoted to senior or privileged positions.

Less fortunate slaves were sent to work in the gold and copper mines of north Africa's deserts. They often died of thirst or heat exhaustion.

Source 1 A stone carving from a tomb at Saqqara, showing Nubian slaves, an Egyptian guard and an Egyptian scribe





Source 2 Tomb art, painted about 4500 years ago in Thebes, showing Egyptian women celebrating at a feast, attended by servants



Source 3 This limestone painting from the 19th Dynasty shows an Egyptian carpenter at work

Scribes

The scribes in ancient Egypt were usually men. They were an elite group, and their profession tended to be passed from father to son. Scribes had to attend a special school where they would learn how to read and write hieroglyphs and hieratic script (simplified text). This study would take a lot of hard work and time – four to five years. Scribes generally wrote on papyrus with reed brushes using red and black ink made from ground minerals.

The role of scribes

Scribes kept detailed records of administrative and economic activities. They also supervised the building of monuments and infrastructure projects, and could write wills and other documents for illiterate people. Much of what we know about ancient Egyptian civilisation comes from the records of scribes.

Craftsmen

This group of ancient Egyptian society included skilled labourers such as carpenters (see Source 3), stonemasons, sculptors, painters, potters, metalworkers and jewellers. Craftsmen had their own hierarchy depending on their skills. The most talented craftsmen were employed in royal or temple workshops. They were highly respected and generally lived quite comfortable lives. Many other craftsmen set up their own small workshops to make objects for ordinary people, which earned them a more modest livelihood. Like scribes, a craftsman's skills and profession were usually passed down within the family.

Check your learning 8.7

Remember and understand

- 1 Explain some of the ways in which religious beliefs in ancient Egypt shaped the role of women.
- 2 What were the main differences in work opportunities for wealthy women compared to poorer women?
- 3 What type of lives could most slaves in ancient Egypt expect to live? What types of duties were they expected to carry out?
- 4 What types of duties were less fortunate slaves expected to carry out?
- 5 Name three important responsibilities that scribes would have had in ancient Egyptian society.
- 6 Why has the work of scribes been so important to the development of our knowledge about the society of ancient Egypt?

Apply and analyse

- 7 List the physical or mental qualities or skills that you think would have made a slave an ideal person for each of the following:
 - a the pharaoh's household
 - b working in the desert mines
 - c working in a local temple.

Evaluate and create

- 8 The powerful roles in ancient Egyptian society belonged to people who were wealthy, had political power or had religious authority. Discuss as a class to what extent this represents the situation in Australia today.

8B rich task

Farming in ancient Egypt

Farmers in ancient Egypt prospered because of the fertile land along the banks of the Nile. Farming was so central to the success of ancient Egypt that many aspects of society were shaped by it, such as their calendar, the design of their houses, even the class system. Most of the pharaoh's wealth came from the taxes paid in grain by farmers. This grain was stored in plentiful years for use when food was in short supply.

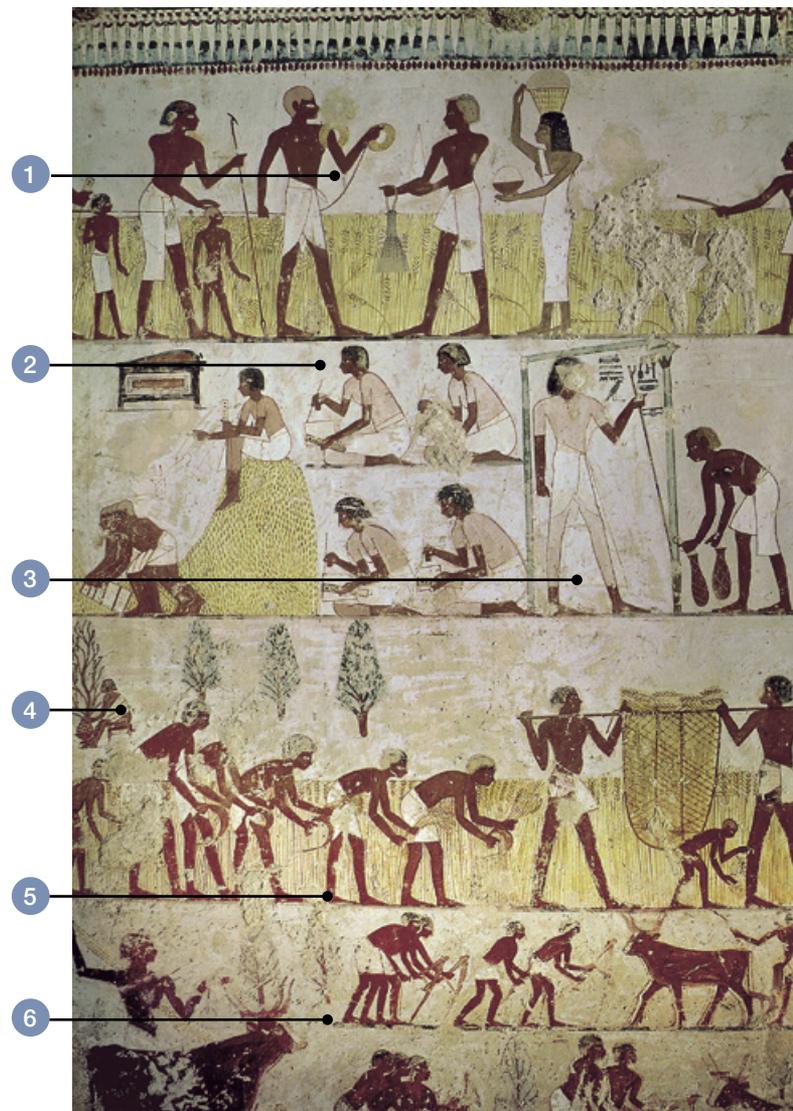
skilldrill

Using primary sources as evidence

Historians focus their research on sources that are relevant to their inquiry. After locating a range of sources that they think might be useful, historians need to analyse them to discover if they contain evidence that will be relevant to the particular question they are investigating. The evidence is the information contained in or gathered from the source. A source becomes evidence if it can be used to answer a particular question about the past.

The first step you must undertake before attempting to locate, compare, select and use a range of sources as evidence is to be very clear about the historical questions you are investigating. In this skill drill, your inquiry questions are:

- What were farming practices like in ancient Egypt?
- What role did farmers have in the social hierarchy?



You need to keep these questions in mind as you work through the following steps:

Step 1 Look at the source carefully and note the obvious things that it is telling you.

Step 2 Look beyond the obvious and see what you can **infer**; that is, what can you work out from what you see in the source, even though it may not be immediately obvious?

For a detailed description of this skill, refer to pages 176–179 of 'The history toolkit'.

Source 1, a wall painting from the tomb of an important official called Menna, provides a lot of information about ancient Egyptian farming, including crops, tools and farming methods. It is a very useful primary source.



Source 1 This is a detail from a wall painting in the tomb of Menna, an important official from ancient Egypt. The painting (c. 1400–1390 BCE) contains detailed information about farming practices in ancient Egypt.

Apply the skill

- Each farming activity listed below has an identifying letter beside it. Locate the section of the painting that you think best corresponds to each activity and match the corresponding letter and number in your notebook.
 - Cutting down grain with scythes (metal cutting tools)
 - Threshing (beating) the grain
 - The arrival of a noble to check grain stores
 - Picking fruit
 - Preparing for planting
 - Stopping for a rest
 - Measuring the size of the field
 - Recording details of the harvest
 - Separating the husks from the grains
 - Transporting the crop
- Who is involved in the activities? List as many different classes, genders and ages as you can.
- What tools and animals can you identify in the painting? Can you suggest what the tools are made from?
- How does this painting help you to understand why farmers were at the bottom of the social hierarchy? Think about how many workers there are and the tasks they are performing.

Extend your understanding

- Work in small groups to prepare a two-minute role play between one of the farmers in Source 1 and a noble who has come to check grain stores. Your dialogue should reflect the differences between these social roles as you understand them. Once finished, perform your role play for the class.
- Brainstorm three other types of primary sources that might provide useful evidence in our inquiry into what farming practices were like in ancient Egypt and the role of farmers in the social hierarchy.

8.8 Religious beliefs and practices

Religious beliefs dominated the lives of the ancient Egyptians. Nearly everything in their world was seen as being controlled by hundreds of deities (gods and goddesses). Their beliefs greatly influenced how they lived, what they built and how they waged war. These beliefs also shaped their views about death and how they prepared for it.

Beliefs and values in ancient Egypt

The ancient Egyptians believed that one group of gods created the world and its living things, while another group controlled the forces of nature. There also were gods of fertility, wisdom, love, music and dance, death, health and childbirth. The Sun god Ra (or Re) was the most important god. The Egyptians believed he rode across the sky each day in a boat. Ra is often depicted with the Sun symbol on his head. He is said to travel alongside Nut, the universal mother, during the day and night. Endlessly, she swallows the Sun at night and gives birth to it again next morning.

Traditions and ceremonies

The ancient Egyptians built many temples where priests and priestesses served the gods and goddesses they believed lived there. The priests burned incense, made offerings and held festivals.

Ordinary people made shrines within their homes where they said prayers and left offerings. People played instruments such as **sistra** (metal rattles; see Source 2 on page 238) to keep away evil spirits. They also wore amulets to attract the protection or goodwill of the gods.



Source 1 Detail of a statue showing the god of water, Sobek, alongside pharaoh Amenhotep III. Sobek is shown with the features of a crocodile.



Source 2 An ancient painting on papyrus showing some of the most important gods of ancient Egypt

Animal gods

Many gods throughout ancient Egypt were represented with the heads or bodies of animals. For example, the goddess of war, Sekhmet, was shown as a lion, and the god of water, Sobek, was represented as a crocodile. As a result, many priests and priestesses kept crocodiles as pets and spoiled them with offerings of food.

The Egyptian goddess Bastet, the protector of homes, was shown as a cat. The ancient Egyptians valued cats highly, not only out of respect for Bastet, but also because they protected their grain stores by killing vermin such as mice and rats. Households treated cats very well; harming or killing a cat was often punished by death. The Greek historian Herodotus wrote that when a cat in ancient Egypt died, the occupants of the house would mourn and often shave their eyebrows to show their loss.



Source 3 Many animals in ancient Egypt were mummified as a sign of respect, or as offerings to the gods. Cats, such as this one, were mummified in large numbers.

Check your learning 8.8

Remember and understand

- 1 Which Egyptian god was the most significant? Why?
- 2 Name one way in which ordinary people tried to keep evil spirits away.
- 3 How did ordinary people try to attract protection from the gods?
- 4 How were gods worshipped in ancient Egypt?

Apply and analyse

- 5 Through research, find out how some of the Egyptian deities were depicted. Look particularly at their heads. Draw sketches to show how you would depict each of the following: god of peace, god of greed and god of courage.

Evaluate and create

- 6 Create a new deity for ancient Egypt. Sketch his or her appearance (use labels and stick figures if you cannot draw). Describe this deity's role. List the different ways in which your deity would have affected the lives of the ancient Egyptians.



8.9 Everyday life

Options

How beliefs, values and practices influenced the lifestyle of the ancient Egyptians is discussed in respect to the three topic areas listed below:

- everyday life
- warfare
- death and funerary customs.

Choose only ONE of these topic areas to study.

Ancient Egypt was a highly organised civilisation that was deeply influenced by its people's beliefs, values and practices. This influence was evident in various aspects of the ancient Egyptians' daily lives.

Marriage, love and childbirth

Egyptians married as teenagers. Marriage was usually a business matter, arranged by the parents when the partners were young. This is why a man might, for example, marry his sister – to keep the money in the family. It seems not much fuss was made about weddings – the woman simply left home to live with her new husband. Yet marriage was seen (by law and religious belief) as a serious commitment and, as Source 1 indicates, some marriages would also have involved mutual love and respect apart from economic arrangement.



Source 1 This sculpture comes from the tomb of a couple buried together at Saqqara, near Cairo. The level of affection shown here (the woman's arm behind the man) is uncommon among Egyptian paintings and carvings.

Childbirth was a risky business. There was a high loss of life of both babies and mothers. Some women gave birth in special 'birthing houses' in temples. People often called on deities for help. For example, they might ask for support from Hathor, the goddess of women (represented as a cow). Or they would ask Ra, the main Egyptian deity, to send a wind to cool the mother.

Music and dance

The ancient Egyptians had a range of musical instruments, including harps, drums and sistra (see Source 2). Music and dance were always part of funerals. They were also seen as ways to communicate with deities such as Sekhmet. People who had done the wrong thing were very scared of this goddess, because they believed she would destroy the wicked. Dancing was a way to appeal to her mercy. The ancient Egyptians also believed that the sistrum both honoured the god Hathor and frightened off the desert god Set (the god of chaos).



Source 2 These musical instruments, known as sistra, made a loud clanging sound when shaken as the moving metal parts banged into each other.

Communication

Only around 1 per cent of people in ancient Egypt learnt to read and write. These people, almost always men, were highly respected. They were called scribes (see 'Other key groups in Egyptian society').

During the period of the Old Kingdom, the ancient Egyptians used a script called hieroglyphs. This script contained over 750 symbols. As time passed, the ancient Egyptians developed simpler scripts – the **demotic** and **hieratic** scripts. These could be written more quickly, and were used for everyday writing.

Health and hygiene

The ancient Egyptians valued cleanliness. The wealthy bathed often. Priests used to shave their entire bodies regularly, and wash up to four times a day, so that they were completely clean when performing their religious duties. Slaves, on the other hand, washed rarely and so could be smelly and sticky. Records describe how one pharaoh, Pepy II, used to surround himself with naked slaves who were smeared with honey, so that flies would annoy them instead of him.

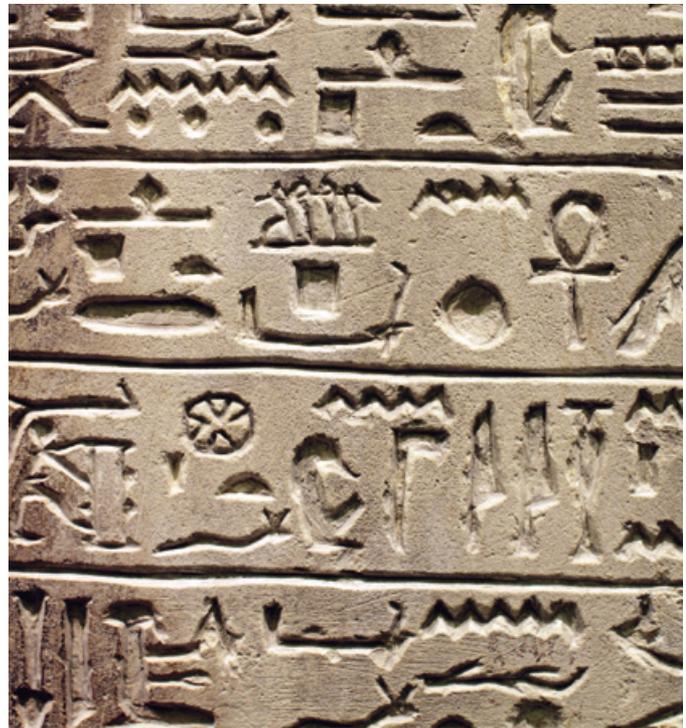
Health problems

Despite Egyptians' love of cleanliness, ancient Egypt was not a healthy place to live. Malnutrition was common, especially among the poor, and there were other problems. These included:

- lots of mosquitoes that bred in the Nile, spreading diseases such as malaria, which causes flu-like symptoms including fever
- rubbish and human waste that were often dumped in the Nile and other canals, leading to regular outbreaks of diseases such as dysentery, which causes severe diarrhoea
- breathing in sand blown in from the deserts which often led to a lung disease called silicosis
- fragments of rock left in flour from the stones used to grind the grain which caused tooth damage and decay.

Medicine and healing

The ancient Egyptians discovered a lot about the human body through their practice of mummification. For example, they knew how to use hot knives during surgery to seal blood vessels



Source 3 Ancient Egyptian hieroglyphs in the Temple of the Dead of Rameses III, Luxor

in order to stop uncontrolled bleeding. However, healing and medicine also relied heavily on magic and the influence of the gods. Priests were often involved in medical treatments, reciting spells and performing magic rituals.

Check your learning 10.9

Remember and understand

- 1 In what ways did ancient Egyptians show that they valued cleanliness and their physical appearance?
- 2 Explain why ancient Egyptians often suffered from each of the following: infections, bad teeth and silicosis.
- 3 Why were scribes so highly valued?

Apply and analyse

- 4 What practice of the ancient Egyptians helped to advance their knowledge of anatomy?
- 5 What gods might a woman giving birth in ancient Egypt call on? Why?
- 6 In which ways did written forms of communication develop and change over time in ancient Egypt? Why were these changes necessary?

8.10 Warfare

Ancient Egypt had a fairly peaceful early history, mainly because the physical features that surrounded ancient Egypt, such as mountains and deserts, acted as natural barriers against invasion. During the Old Kingdom, Egypt had only a small army. During the Middle and New Kingdoms, however, the army grew into a large, well-organised group because the pharaoh's rule was often threatened.

The army and the pharaoh's military role

Ancient Egypt's army was similar to a loosely organised police force. It kept law and order in Egypt, protected the pharaoh and the pharaoh's palace, and guarded borders. The head of Egypt's army was the pharaoh – only he led troops into battle.

One of the pharaoh's main responsibilities was to protect the Egyptian people from attack. Because he was considered to be a god, he had to make his people believe that he was strong enough to protect them. This was one of the reasons why many pharaohs built huge and impressive statues of themselves.

The army included both foot soldiers (those who walked and fought on the ground) and charioteers (soldiers who drove and fought from horse-drawn chariots like the one shown in Source 1). Usually, there were two charioteers in each chariot. One man steered the horses and the other used the weapons (usually a bow and arrow, and a spear). It cost a lot of money to buy a chariot (and horses). Because of this, only wealthy men could become charioteers. Successful charioteers were looked on as heroes.

Life of a soldier

Evidence from ancient Egyptian sources shows that army life was tough. Soldiers had to participate in a very challenging program of weapons training and physical exercise. Soldiers who did anything wrong might be whipped. Often, soldiers had to go on long marches through the desert.



Source 1 The remains of a wall painting showing pharaoh Ramses II charging into battle. The horse-drawn chariot was an important weapon in ancient Egypt.



Source 2 A model of Egyptian foot soldiers from the tomb of Mesehti, an important official in Egypt during the 11th Dynasty (c. 2134–1991 BCE)

Treatment of enemies

Ancient Egyptians could be very harsh in their treatment of enemies they fought and conquered. There are accounts of corpses being mutilated, with body parts, such as arms and heads, chopped off to present to the pharaoh or the gods. But there were also many occasions of mercy. For example, conquered leaders were sometimes allowed to continue to rule their local region as long as they acknowledged the pharaoh as supreme ruler.

Weapons and armour

Soldiers did not wear much clothing, mainly because of the heat. They would usually wear a belt and loincloth, or a short tunic. They did not wear headgear. Some charioteers wore a type of armour on their upper body, made from a series of leather straps. It seems that only the pharaohs wore metal armour, but not all the time. This armour was made from a series of overlapping bronze pieces. Pharaohs would also wear a special headpiece during battle, known as the *khepresh* or blue crown. It was usually made of cloth or leather stained blue and covered with small gold or bronze discs (see Source 1).

Many weapons also served as farming tools. For example, axes might chop down palms as well as enemy bodies. Spears might kill creatures such as lions as well as men. Throwing sticks were useful for hunting birds. Many weapons, such as the mace, had religious importance. Archaeologists have often found weapons in graves alongside the remains of ancient Egyptian bodies.

Weapons used in ancient Egypt

- Flint and bronze knives
- Swords and daggers (made of bronze, and later iron)
- Bows and arrows
- Spears
- Maces (heavy clubs with stone or copper 'heads')
- Battleaxes
- Shields
- Battering rams and scaling ladders (for attacking buildings with high walls)

Source 3 Some weapons used by soldiers in ancient Egypt

keyconcept: Perspectives

Army life

Many men in ancient Egypt chose to join the army as a way to become rich. Wealth would give talented soldiers a chance to improve their social position. After a battle, goods from the defeated army would often be taken and given to officers, priests and worthy soldiers. There are papyrus texts that describe soldiers being given items of gold jewellery. There was also a commonly held belief that the memory and name of a war hero would live forever.

However, not everybody had the same perspective on life as a soldier. Scribes, who often travelled with the army, saw it as an awful existence. Many encouraged young Egyptians not to join the army.

Source 4

Come, let me tell you the woes of the soldier ... He is awakened at any hour ... He is hungry, his belly hurts; he is dead while yet alive ... He may not rest. There are no clothes, no sandals ... His march is uphill through mountains. He drinks water every third day; it is smelly and tastes of salt. His body is ravaged by illness ...

Translated extract from the writing of the scribe Wenemdiamun, in Miriam Lichtheim, *Ancient Egyptian Literature*, University of California Press, Berkeley, 1976, vol. 1

For more information on the key concept of perspectives, refer to page 164 of 'The history toolkit'.

Check your learning 8.10

Remember and understand

- 1 Why did the Old Kingdom of ancient Egypt only need a small army?
- 2 The army of ancient Egypt had two main types of soldiers. Name them and describe how they fought.

Apply and analyse

- 3 After some battles, ancient Egyptian soldiers cut off parts of people they had killed in battle and presented them to the pharaoh or as offerings to the gods. Why do you think they might have done this?

Evaluate and create

- 4 With a partner, write and perform a role play that demonstrates the different perspectives that might be held about army life by an ambitious young Egyptian soldier and the scribe Wenemdiamun (see Source 4).

8.11 Death and funeral customs

Religion played a major part in the life and death of ancient Egyptians. For those who were worthy, death was not seen as the end. Instead it was regarded as the start of a different sort of existence. To be worthy, each person had to live a good life.

In addition to living a good and honest life, there were a number of rituals that needed to be performed in order to ensure a smooth journey into the afterlife. These included:

- preserving the body after death through a process known as mummification
- reciting the appropriate magic spells to ensure the person's safe passage into the afterlife
- making sure that the dead person had access to what he or she would need in the afterlife. These items needed to be placed in the person's tomb.

The mummification process

To the ancient Egyptians, reaching the afterlife was a complicated business. It was not enough for a person simply to be worthy, they also had to be prepared for the journey according to a number of rituals, and be supplied with the necessary provisions and protections. Their bodies were preserved through the process of mummification (or embalming), which involved removing vital organs and placing charms and spells in specific areas (see Source 1 on pages 244–245).

Journey to the afterlife

Once a person's body was ready for burial, a procession including family, priests and professional mourners would take the body to its tomb. At the entrance of the tomb, the priests performed various rituals, including the 'opening of the mouth' ceremony. A priest touched all the head openings of the mummified body with an axe-like tool. This was believed to awaken the dead person's senses. The coffin was then sealed up and placed in the stone **sarcophagus**. The dead person was now ready to start the journey into the afterlife.

The *Book of the Dead*

In order to reach the afterlife, the ancient Egyptians believed that the dead person would need magic spells and special prayers to support them through any dangers and further rituals on their journey. These spells and prayers were recorded in a special text known as the *Book of the Dead*. A copy of the *Book of the Dead* was often buried with the dead person.

One of the important rituals the dead person must undergo before being allowed into the afterlife was the 'weighing of the heart'. In ancient Egypt, it was believed that the heart contained the soul, so the weighing of the heart was a kind of final judgement. The ritual is explained in Source 2.

Tombs

The earliest tombs were often graves in the desert. The hot, dry sand soon sucked all moisture from the corpse, preserving it. The poor continued to be buried this way even after burial practices had changed.

The first above-ground tombs were called mastabas. These were large, box-like structures. Many mastabas had detailed designs, with stones in patterns decorating the walls. Perhaps the best-known above-ground tombs were the pyramids. Today, more than 160 pyramids have been found.

When grave robbers started becoming a problem, tombs for important people such as pharaohs were dug underground in places such as the Valley of the Kings. This began to happen from about 1500 BCE.

Source 1 This person was buried in a pit in the Egyptian desert 5400 years ago, along with some possessions. The well-preserved body had a number of broken bones.





Source 2 An ancient Egyptian painting showing the 'weighing of the heart' ritual

- 1 Anubis, god of embalming and the dead, leads the dead person to judgement.
- 2 A row of judges sit watching.
- 3 Anubis weighs the dead person's heart against a feather from the headdress of Ma'at, the goddess of truth and justice. If the heart is lighter than the feather, it means the person has led a good life and will be admitted to the afterlife.
- 4 Ammit, a female demon with the head of a crocodile, will eat the dead person's heart if it is heavier than the feather.
- 5 Thoth, god of writing and knowledge, records the result of the weigh-in.
- 6 Horus, god of the sky and ruler of the world of the living, leads the dead person (who has passed the test) to Osiris.
- 7 Osiris, god of the dead and the underworld, allows the person into the afterlife.

Burial goods

Egyptians buried their dead with goods they believed would be needed in the afterlife – clothing, jewellery, pots, furniture, wigs, tools, chariots, boats, food and even servants! Later, small models of servants were used instead of the real servants.



Source 3 This boat was found in the Great Pyramid at Giza, burial place of the pharaoh Khufu, who ruled from 2551 BCE to 2528 BCE. A boat was needed so that the pharaoh could sail across the sky with the god Ra.

Check your learning 8.11

Remember and understand

- 1 Explain why the corpse shown in Source 1 is surrounded with goods. Why is it so well preserved?
- 2 What were mastabas and pyramids?
- 3 What was the *Book of the Dead* and what role did it play in Egyptian funeral customs?
- 4 Why was it so important to ancient Egyptians to preserve the body when someone died?

Apply and analyse

- 5 Look at Source 2. Why do you think 'having a heavy heart' might indicate that the life a person has led has not been a good one?

Evaluate and create

- 6 Source 3 shows a boat (now reassembled) that was found in the Great Pyramid. Write a statement that might have been read by the priest speaking at Khufu's funeral. Include reference to this boat.

8.12 How Egyptian mummies were made

3 The liver, lungs, stomach and intestines are removed through a cut on the left side of the abdomen. A hook, pushed up through the nostrils, removes the brain (thought to be a useless organ that produces only mucus). The heart is left in the body.

2 The body is thoroughly washed. Prayers are read from the *Book of the Dead* by a priest.

1 The dead body is brought for mummification, followed by mourners.

4 The internal organs are dried in natron (a natural powder, a bit like salt), rubbed with fragrant oils and put into four canopic jars. Each jar's lid is shaped like the head of a different god, who acts as the guardian of the organ within: the liver has a lid like a man's head; the lungs, a baboon's head; the stomach, a jackal's head; and the intestines, a falcon's head.

8 The mummy is put into a body-shaped coffin. Often more than one coffin is used, each one sitting inside the next. For important people like pharaohs, the nest of coffins is placed inside a stone box, called a sarcophagus.

Source 1 The steps followed during the mummification process

5 The body is then covered with salt for 70 days. This, and the dry air, sucks out any moisture. The body is washed again in water and smeared with fragrant oil.

6 Once the body has been embalmed, it is wrapped with rolls of fine linen (similar to bandages), starting with the head and neck. Toes and fingers are wrapped separately, and sometimes covered with gold caps. Sacred amulets, such as the **scarab**, are wound into the bandaging. During the wrapping, prayers from the *Book of the Dead* are said over the body.

7 The fully bandaged mummy is painted with sticky **resin**, and then more cloth is wrapped around it.

Check your learning 8.12

Remember and understand

- 1 What was done with a dead person's internal organs during the mummification process?
- 2 Why were bodies covered with salt for 70 days?
- 3 What religious ritual was conducted as the bodies were wrapped in cloth?

Apply and analyse

- 4 Study the various elements illustrated in Source 1. What evidence does this source provide about ancient Egyptian beliefs and values, and their impact on people's lives?

Once the first layer of blocks was laid, a ramp had to be built so that the blocks could be dragged up it to be placed on the next layer of the structure. There are many theories about how the pyramids were constructed. Some historians believe that the ramp would have had to be continually rebuilt as each layer of the pyramid was completed. Other historians believe that the ramp snaked around the growing pyramid.

Scholars think that the blocks were probably dragged across the sand on sleds to the base of the pyramid or, once construction started, to the bottom of the ramp. Sleds would have had less drag on the sand. Around 30 men would have been needed to pull each block.

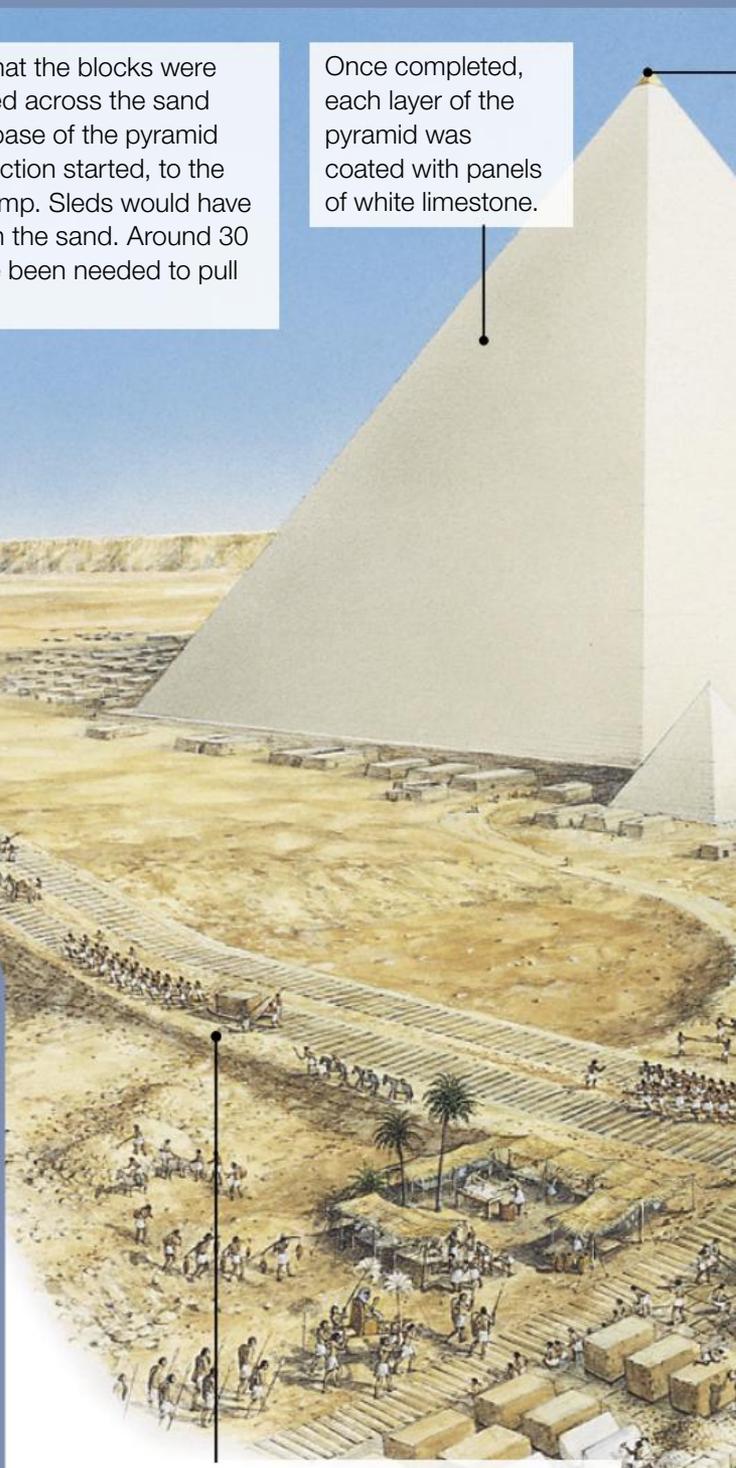
Once completed, each layer of the pyramid was coated with panels of white limestone.

The first stage in building the pyramid was to put down the first layer of rocks over the entire square base area.

8C rich task

The Great Pyramid at Giza

The Great Pyramid at Giza is the only remaining wonder of the ancient world. It was built in c. 2580 BCE as the tomb of the pharaoh Khufu. The question of how the Great Pyramid was constructed with such accuracy has mystified many historians. These historians have come up with many different hypotheses about how it was built. The illustration on these pages highlights what many historians today agree must have been the main steps in the pyramid's construction.



Probably the first step in the building of the pyramid was the selection of a workforce. It is believed that, during the inundation of the Nile, most of the workforce was made up of farmers who could not work on their farms because of the floodwaters.

Source 1 Historians believe the building of the Great Pyramid at Giza took about 20 years, using 100 000 workers.

The final step in the construction of the pyramid of Giza was to place a pyramidion (smaller pyramid cut from one piece of stone) on the very top. It was about 8 metres high and coated with a mix of gold and silver.

The base of the Great Pyramid is almost flat. This has led many historians to believe that the area in which the Great Pyramid was to be built was first marked out and levelled. Marking out the ground involved complex mathematics. Precise calculations were required to set out where the corner blocks would be placed, the angle of the sloping sides, the height and the dead centre of the structure.

Most of the 2.3 million blocks used to build the Great Pyramid were limestone blocks, mined in local quarries. Others were heavy granite, found about 800 kilometres south in Aswan. They then had to be transported downriver on barges or ships.

skilldrill

Creating a flow chart

After conducting their inquiries, historians need to be able to express and communicate their findings in a range of ways and using different forms. Sometimes, historians communicate their findings orally or in writing. At other times, historians use particular graphic organisers, such as flow charts, to communicate information.

Flow charts are a very useful tool for communicating steps in a process. To create a flow chart, you need to think carefully about the steps involved in a process, as well as the order in which these steps would have been performed. A good flow chart should include:

- written descriptions of each step
- a small drawing or visual representation of each step
- arrows between each step to show the order in which they were performed.

Apply the skill

- 1 Look carefully at Source 1. Identify what the key steps would have been in the building of the Great Pyramid, as well as the order in which these steps would have been performed. Create a flow chart that outlines these steps, using the guidelines above.

Extend your understanding

- 1 Source 1 shows one theory of how the Great Pyramid was built, but many historians now contest this theory. They argue that it would have been impossible to drag stone blocks to the top of the pyramid up such a steep ramp.
 - a Conduct some online research on theories that try to explain how the pyramids were built. For example:
 - a ramp that winds around the pyramid
 - a series of cranes that lifted stones up the side of the pyramid
 - a combination of all of these theories.
 - b Describe each theory and draw a simple picture to illustrate how each may have worked.
 - c Which theory do you think is most likely to be correct? Give reasons for your answer.

Depth study 2: Investigating one ancient society

Ancient Greece

Ancient Greece covered an area known today as Greece as well as the parts of modern Turkey near the Aegean Sea. It also had many **colonies** or settlements around the Mediterranean Sea and the Black Sea. Ancient Greece is sometimes called the 'cradle of Western civilisation' because of the debt that Western society owes to the early Greeks. This includes **democracy** as a form of government, drama (theatre) and the modern Olympic Games. Some modern architecture and sculpture also draw on the classical traditions of ancient Greece. The work of ancient Greek mathematicians, thinkers and storytellers still inspires many people today.



9A

How did physical features influence the development of ancient Greece?

- 1 Greece is a very mountainous region, which made it very difficult for the ancient Greeks to travel from place to place. How might this have influenced the way settlements developed across ancient Greece?

9B

What shaped the roles of key groups in ancient Greece?

- 1 Athens and Sparta were two ancient Greek city-states. Athens was a 'democracy' (rule by many), whereas Sparta was an 'oligarchy' (rule by few). How do you think the lives of citizens in these two city-states would have been different as a result of the two styles of government?



chapter

9

Source 1 Ruins of the ancient Greek town of Selinous, on the island of Sicily (now part of modern-day Italy)

9C

How did beliefs, values and practices influence ancient Greek society?

- 1 The Selinous temple is believed to be a monument to the Greek goddess Hera. What does this tell us about the importance of religious beliefs to the ancient Greeks?

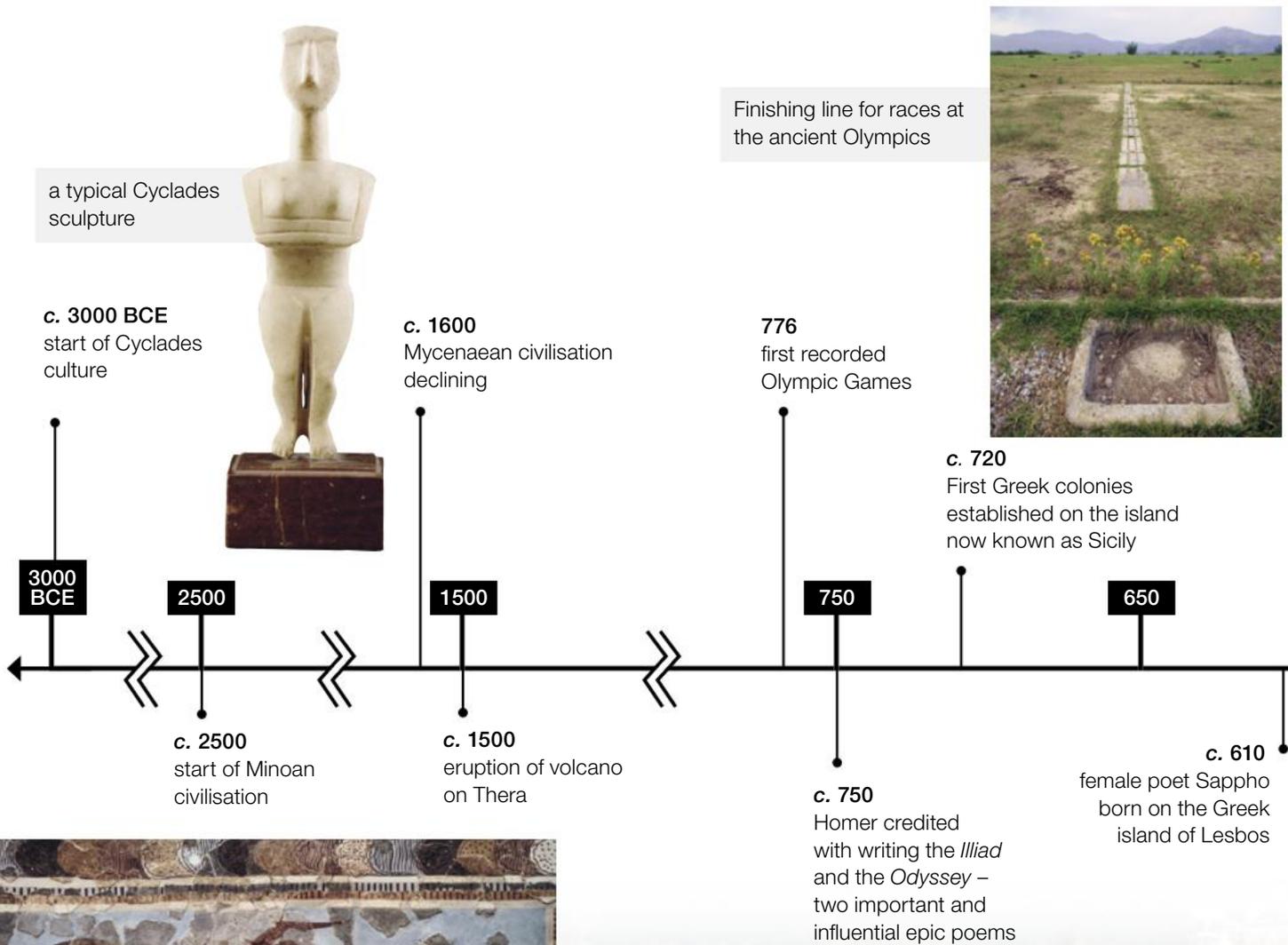
Investigating one ancient society

This depth study offers a choice of five topics:

- Ancient Egypt
- Ancient Greece
- Ancient Rome
- Ancient India
- Ancient China

You must choose AT LEAST ONE of these topics for study.

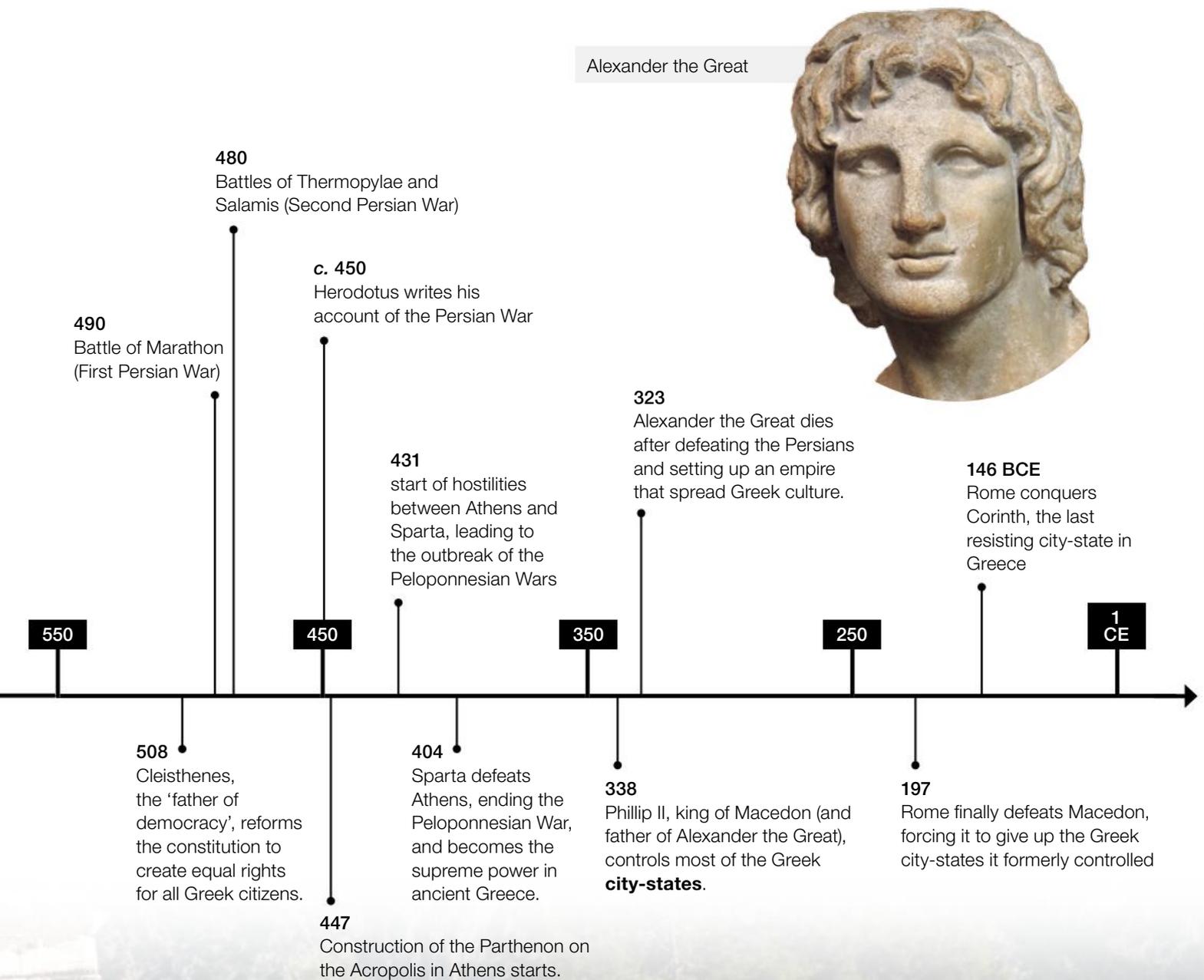
9.1 Ancient Greece: a timeline



A wall panel from the Minoan palace on Crete

Source 1 A timeline of key events and developments in the history of ancient Greece

9A How did physical features influence the development of ancient Greece?



Check your learning 9.1

Remember and understand

- 1 In what year did the volcano on Thera erupt?
- 2 In what year did the first recorded Olympic Games take place?
- 3 When did the Peloponnesian Wars begin?

Evaluate and create

- 4 Looking at the last few hundred years on the timeline, which key events do you think might have contributed to the overall decline of the ancient Greek civilisation?

9.2 The impact of geography on ancient Greece



Ancient Greece was located in south-eastern Europe. Its territory surrounded the Aegean Sea (see Source 3). It also included the many islands in the Mediterranean and Aegean seas. Greece's mountainous mainland and mostly unnavigable rivers made travelling difficult. These geographical features had a significant influence on the development of ancient Greek societies and civilisations.

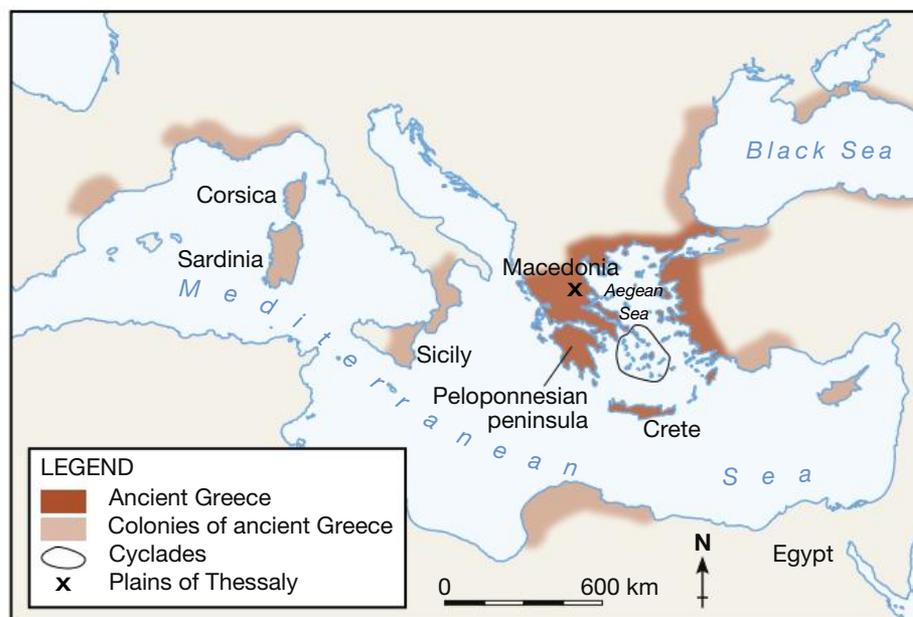
The first known fixed settlements on Greece's mainland were on the Peloponnesian peninsula and on the fertile plains in Thessaly (see Source 1). Evidence has been found of scattered mud-brick villages built around 7000 BCE. There were also ancient settlements on the nearby islands of Crete, and on the Cyclades (a group of about 30 islands).

Greece's steep mountains and rugged high country cut off contact between many settlements. These features in ancient Greece prevented people from growing as one nation. Rather, many settlements developed as city-states. This meant there was no single Greek ruler.

City-states

City-states were independent urban centres that generally shared a common language and religious beliefs. Occasionally, some banded together to fight a war or for protection. Now and then, one might dominate for a time. The most powerful city-states were Athens and Sparta. They were also at times bitter rivals.

ANCIENT GREECE AND ITS COLONIES c. 550 BCE



Source 1

Source: Oxford University Press



Source 2 A coastal landscape of Greece, on the Peloponnesian peninsula

ANCIENT GREECE AND SOME OF ITS CITY-STATES



Source 3

Source: Oxford University Press

Check your learning 9.2

Remember and understand

- 1 Explain how Greece's physical features made the ancient Greeks depend on the sea to meet their needs (such as food, transport or trade).
- 2 Look closely at Source 3.
 - a Where are most of the ancient Greek city-states located?
 - b What are the main reasons for this settlement pattern?

Evaluate and create

- 3 Complete a SWOT analysis chart related to city-states in ancient Greece. Use information here and in Source 1 on pages 264–265. Copy a large version of Source 4 onto an A3 sheet of paper to do this activity.
 - a Working in groups of four, with every member contributing in turn, complete the segments of your SWOT chart with as many brainstormed ideas as you can. One example has been provided in each segment to get you started. You need to add more.
 - b Once all groups are finished, discuss your overall conclusions about life in a Greek city-state.

Source 4 A SWOT chart

STRENGTHS

- Each city-state produced its own food, so its people did not have to depend on others.

WEAKNESSES

- The **agora** would have been overcrowded as the population of the city-state grew.

OPPORTUNITIES

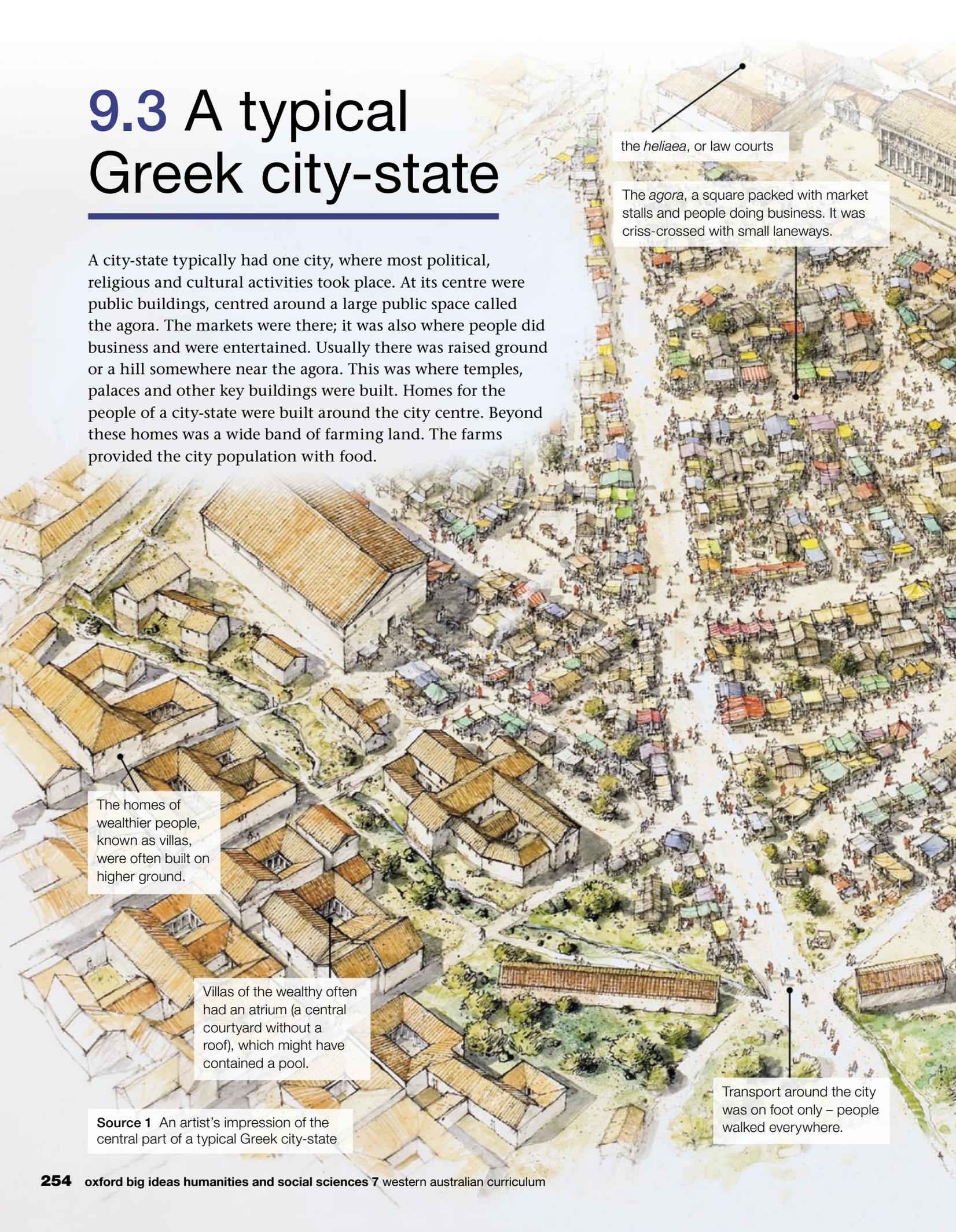
- It was possible to form an alliance with another city-state and become more powerful.

THREATS

- A city-state might be vulnerable to attack if it had no allies.

9.3 A typical Greek city-state

A city-state typically had one city, where most political, religious and cultural activities took place. At its centre were public buildings, centred around a large public space called the agora. The markets were there; it was also where people did business and were entertained. Usually there was raised ground or a hill somewhere near the agora. This was where temples, palaces and other key buildings were built. Homes for the people of a city-state were built around the city centre. Beyond these homes was a wide band of farming land. The farms provided the city population with food.



the *heliaea*, or law courts

The *agora*, a square packed with market stalls and people doing business. It was criss-crossed with small laneways.

The homes of wealthier people, known as villas, were often built on higher ground.

Villas of the wealthy often had an atrium (a central courtyard without a roof), which might have contained a pool.

Source 1 An artist's impression of the central part of a typical Greek city-state

Transport around the city was on foot only – people walked everywhere.

The homes of ordinary people were built from stone or clay. Many were built around an open courtyard to keep them cool. Men and women often lived in separate parts of the house.

Narrow streets and alleys were common in all Greek city-states.

Audiences often gathered in the agora to hear philosophers speak on a range of subjects.

The *stoa*, a long building, like a hall, containing shops and offices. It also provided shelter and a shaded place to meet.

the *strategium*, or military headquarters

Check your learning 11.3

Remember and understand

- 1 What was an agora? Where was it typically found?
- 2 Where were temples in Greek city-states usually located? Discuss these as a group and try to explain them.

Apply and analyse

- 3 Study Source 1 closely. Write down the three things that most catch your eye, either because they puzzle or intrigue you. Discuss these as a group and try to explain them.

the slave market, where slaves were bought and sold

the *tholos*, where a city-state's council met

the *bouleuterion*, a building where the city's Council of Citizens (known as the *Boule*) met

the acropolis, the highest piece of land in the city-state where important temples and forts were built

The temple – Greek temples were built from stone and marble. Some were simple, while others were very large and ornate. Temples were designed to act as 'homes' for the gods and featured statues inside to honour them.

9.4 The beginnings of ancient Greece

Many historians agree that the roots of ancient Greek civilisation lie in three Bronze Age cultures. The first of these cultures belonged to a group known as the Cyclades (who lived on the Cyclades Islands in the Aegean Sea). The other two were the cultures of the Minoans (who lived on the island of Crete) and the Mycenaeans (who lived on mainland Greece).

The Cyclades

The Cyclades are a group of islands in the Aegean Sea (see Source 1 on page 252). Some are just rocky outcrops. Santorini (formerly called Thera) is one of two islands in the Cyclades that is volcanic. The super-volcano there exploded in about 1500 BCE.

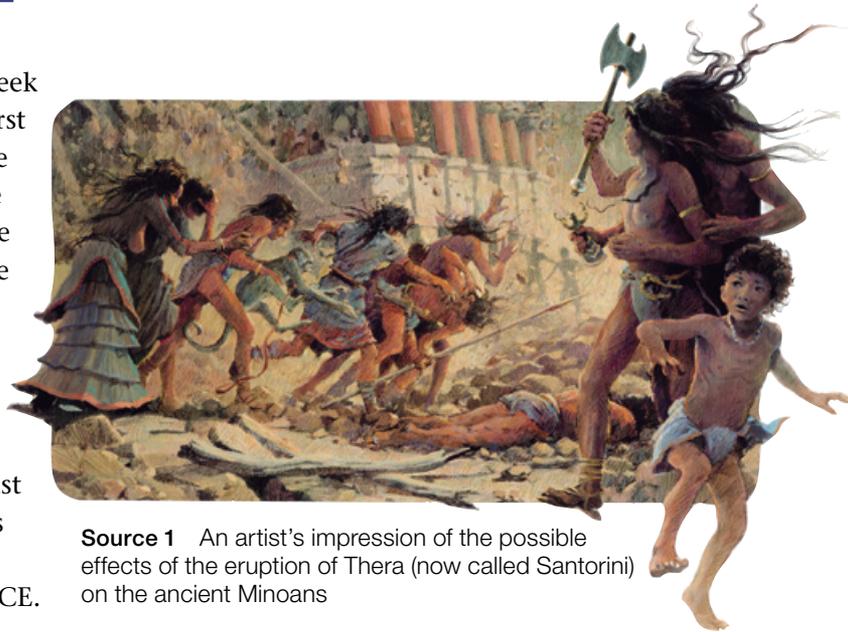
The Cycladic people lived about 4000 to 4500 years ago, trading with other Mediterranean peoples. Food was not easy to grow on the rocky islands so, in exchange for food, they traded copper, white marble and obsidian (a dark volcanic glass).

The Cycladic culture began to decline after about 1700 BCE. Some historians think it was absorbed by the Minoan civilisation. Only the island of Delos kept its separate cultural identity for the next 2000 years.

The Minoans

The Minoan civilisation began over 4500 years ago on the island of Crete. It lasted close to 1500 years. Much of what we know about it is due to the efforts of the British archaeologist Sir Arthur Evans. He named the civilisation after King Minos, the legendary king of Crete. Much of his work involved restoring the massive royal palace at Knossos.

The Knossos palace (see Source 2) was first built around 1700 BCE. It is believed to have been badly damaged after the volcanic explosion on Thera, and then rebuilt around 1500 BCE. It was later destroyed by fire around 1150 BCE. Some believe this was a result of an invasion by the Mycenaeans.



Source 1 An artist's impression of the possible effects of the eruption of Thera (now called Santorini) on the ancient Minoans

Historians have learned much about the Minoans from the ruins of the Knossos palace. For example, the frescoes (paintings) on the palace walls provide evidence that the people were regular sea traders. Some Minoan goods have been found in Egypt. There is also evidence that the Minoans had their own written language, which has been called 'Linear A'. This language has never been decoded.

The Mycenaeans

The Mycenaean culture began to develop on Greece's southern mainland from about 1600 BCE. Like the Minoans, the people took advantage of their closeness to the Mediterranean Sea by becoming busy sea traders.

Mycenaeans lived in a number of 'cities', usually built on a hill or a cliff top. There are still remains of the ancient walls and gates that enclosed some of these settlements. Around and below these walls were the houses of the people. Nearby land was farmed to provide food for the city occupants.



Source 2 A model of the Knossos palace, the largest of many palaces on the island of Crete. It had more than 1000 rooms.

keyconcept: Evidence

Linear B

The Mycenaeans had their own language, called 'Linear B'. This has been decoded by scholars. Thousands of tablets like that shown in Source 3 have been found. These tablets not only provide evidence about the types of goods the Mycenaeans traded, but they also refer to gods and reveal that priests and priestesses owned property. Translations of Linear B written on these tablets suggest that the people were more warlike than the Minoans.

For more information on the key concept of evidence, refer to page 167 of 'The history toolkit'.



Source 3 A stone tablet covered in the Mycenaean script, known as Linear B

Check your learning 9.4

Remember and understand

- 1 Name the three Bronze Age cultures that many historians agree were a foundation for the civilisation of ancient Greece.
- 2 Describe the location of each of these cultures in terms of their geography.
- 3 What have we been able to learn about Minoan culture from the ruins of the Knossos palace?

Apply and analyse

- 4 Many scholars think that a massive tidal wave (and possible earthquakes), caused by the explosion of the super-volcano on Thera, caused extensive damage and loss of life for the ancient Minoans. Using Source 1 to help you, write a short report of what might have happened on Crete when Thera erupted. Your perspective will be that of a writer living on Crete at the time.



Source 4 An artist's reconstruction of the former kingdom of Mycenaea. Like the later Greek city-states, palaces and temples of Mycenaean cities were enclosed within solid city walls.

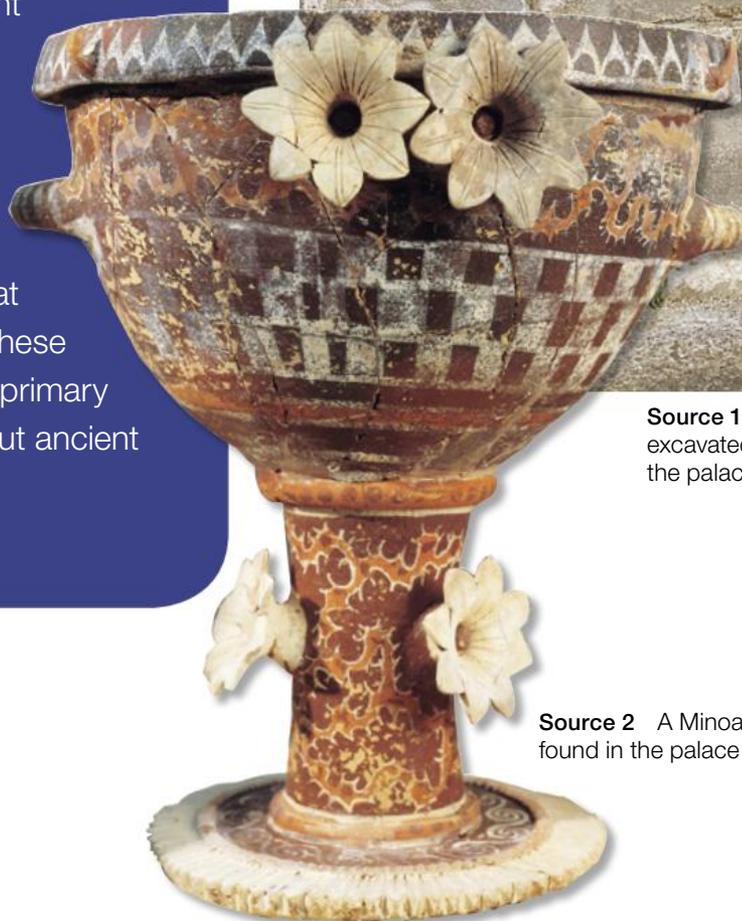
9A rich task

A closer look at the Minoans

When the British archaeologist Sir Arthur Evans unearthed and partially restored the Knossos palace on the island of Crete in 1900, he found a great deal of evidence to suggest that the Minoans were a very advanced civilisation for the times. The palace itself, which had been home to the Minoan king, was enormous, with 1300 rooms. It even had water supply and sewerage systems. The two photographs shown here are of items made by the ancient Minoans. Source 1 is a photograph of part of the storehouse of the Palace of Minos. Source 2 is a piece of pottery from another Minoan palace, the palace at Phaestus. The artefacts in these photographs are important primary **sources** of information about ancient Minoan civilisation.



Source 1 The ruins of an excavated food storehouse in the palace at Knossos



Source 2 A Minoan ceramic container found in the palace at Phaestus

skilldrill

Using Venn diagrams to identify continuity and change

Venn diagrams are simple diagrammatic tools that help you organise your thinking. They help to quickly identify and document what two things have in common and how they differ. These 'things' can be anything – artefacts, cities, political systems, warfare strategies and so on. Venn diagrams can be a quick and helpful way to think about examples of change and continuity in history.

Venn diagrams consist of overlapping circles. To complete the Venn diagram in Source 3, you need to:

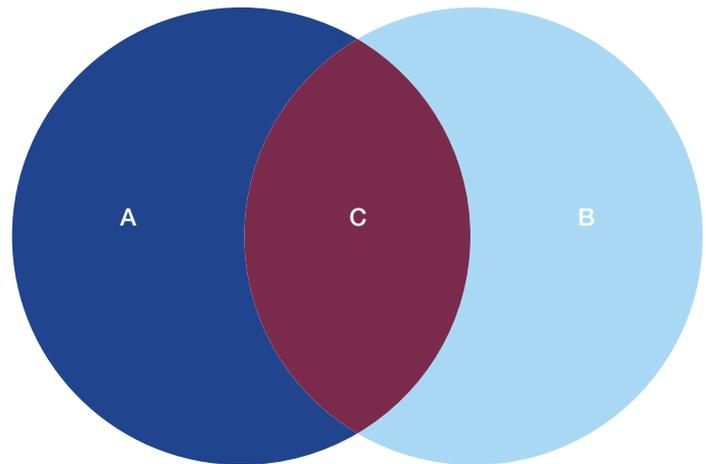
- think about how the two things you are comparing are different. Record these individual features in each of the non-overlapping sections of the two circles (sections A and B).
- think about how the two things you are comparing are similar. Record these common features in the overlapping section of the two circles (section C).

Apply the skill

- 1 Study Sources 1 and 2 carefully, noting the features of each. Think about their size, shape, colour, design, layout, purpose, benefits, limitations and so on.

Now prepare two Venn diagrams to compare and contrast the following:

- Venn diagram 1 should compare the Minoan food storehouse shown in Source 1 with the storeroom and coolroom of a large restaurant or hotel kitchen today.
- Venn diagram 2 should compare the Minoan ceramic container shown in Source 2 with a vase or container you have at home.



Source 3 To create a Venn diagram, features that are specific to one thing you are looking at should be recorded in section A, features that are specific to the other thing you are looking at should be recorded in section B, and features that they have in common should be recorded in section C.

Extend your understanding

- 1 Think about each completed Venn diagram. Use the points you have noted to write a short explanation text of 250 words about how each ancient Minoan artefact or practice compares with some modern equivalents. Decide to what extent each item is an example of continuity and change. For a detailed outline of the purpose and structure of explanation texts, refer to pages 182–183 in 'The history toolkit'.

9.5 The political systems of ancient Greece

The political systems that developed in ancient Greece had a major influence on how it was organised, and on the lives of different social groups within that society. These political systems determined, for example, which individuals or groups had more power and social influence than others. Other issues such as wealth, ownership of land, gender, beliefs and military issues also had an impact on the shape of ancient Greek society.

Kings and aristocrats

Ancient Greece consisted of several hundred city-states, each with its own system of government. Between 2000 and 1200 BCE, most of the city-states were monarchies, where the king had total power. Over time, the real power in most city-states was passed to small groups of wealthy, privileged landowners called **aristocrats**. They would rule as an oligarchy (rule by only a few powerful people).

Democracy

During the 6th century BCE, a new way of governing developed in Athens. It was known as democracy. The word 'democracy' comes from two Greek words – *demos* ('people') and *kratos* ('rule'). Under democracy, every **citizen** could be involved in the political process. However, the actual role that a person could play in politics depended on their position in society – that is, their wealth and land ownership.

We will focus on the political system of Athens, given its importance as the world's first democracy. Many city-states eventually adopted the democratic structure of Athens, although many others stuck to the more traditional forms of government. Powerful Sparta, for instance, became a military state, and kept the roles of its kings.



Source 1 An artist's impression of the Greek leader Pericles during a democratic debate with the men of Athens

Ekklesia

The *Ekklesia* (Assembly) was the main institution of democracy in Athens. Every 10 days or so, the *Ekklesia* met on the side of a hill called Pnyx, in Athens, to make important decisions. This might include whether or not to go to war. Every Athenian citizen had the right to speak at the *Ekklesia*, and vote. In theory, the *Ekklesia* was made up of all

citizens over the age of 18, but not everybody was interested in attending. Some decisions required at least 6000 citizens to be present to vote. Slaves carrying ropes soaked in red dye were sent out to round up citizens. It was considered shameful to be seen with red dye on one's clothing, so this helped to hurry citizens along.

keyconcept: Continuity and change

Citizenship

Only Athenian citizens could vote and take part in democratic processes. That principle continues in Australia today, as does the Athenian practice of being eligible to vote at 18 years of age. Athenian citizens were men over 18 whose parents had both been born in Athens. Their fathers had to be citizens (and, later, their mother's fathers had to be as well). Women, slaves, children and foreigners were not citizens.

In that respect, things have changed. Everyone born in Australia, whether male or female, is a citizen. Those who immigrate here or are welcomed as refugees can choose to become citizens if they wish. Certain conditions have to be met first, though, to qualify. Those applying for Australian citizenship have to pass tests and participate in a citizenship ceremony.

For more information on the key concept of continuity and change, refer to page 165 of 'The history toolkit'.



Source 2 Two newly declared Australians at their citizenship ceremony

Check your learning 9.5

Remember and understand

- 1 What were some of the rights people could enjoy in ancient Athens if they were citizens?
- 2 Describe the role of the *Ekklesia*.
- 3 What has changed and what has continued in respect to citizenship in ancient Athens and in Australia today?

Apply and analyse

- 4 Complete one of the following activities to explain your idea of 'democracy in action':
 - a Individually, write a poem or draw a picture.
 - b In a group, create a short play.

9.6 Key groups in ancient Greek society

The city-states of ancient Greece each had their own unique features. However, some of the roles and responsibilities of their main social groups were similar. The most detailed information available about the key social groups in ancient Greece comes from the city-states of Athens and Sparta.

Ancient Greek society was essentially divided into citizens and non-citizens. Citizens usually formed the smallest and most powerful groups, while non-citizens made up the bulk of the city-states' populations.

Citizens

In Athens, only men born of Athenian parents could be citizens. They were also the only ones who could own land, vote and contribute to the running of the city-state. They were not allowed to have a job because they were required to spend most of their time on compulsory military training, politics and war. They also devoted a lot of time to more leisurely pursuits such as music and literature.

Sparta was similar in these respects, except that it was mostly a military state, ruled by two kings. The top group in Sparta were the *Spartiates* (Spartan-born men of equal status). They spent all of their time in compulsory military training and were seldom at home with their families. They did not have much time for leisure and luxuries as these were thought to undermine military discipline.

Non-citizens

Non-citizens included women, foreigners and slaves. Unlike the citizens, they had no legal rights.

Women

Women in ancient Greece were nearly always expected to stay at home, regardless of whether they were wealthy or poor. Greek women ran the day-to-day matters of the household, had children and cared



Source 1 A Greek painting from the 5th century BCE showing a wealthy woman in ancient Greece holding a mirror and powdered chalk to lighten her complexion.

for their families. They were expected to obey the man of the house.

Girls were often married at around the age of 13 to a man chosen by their father. Girls were generally not educated, as the purpose of education in city-states such as Athens was to produce good male citizens.

Wealthy married women led more pleasant lives than poor women. They usually bathed every day and used perfumed oil. Powdered chalk or lead was applied to create a pale complexion. In spite of their comfortable lives, they were still mostly confined to the home. An outing might mean attending a religious festival, a wedding, a funeral or visiting another woman at home.

Life for a poor woman, on the other hand, beyond her family responsibilities, consisted of daily chores such as fetching water, cooking, spinning and weaving cloth.

An exception to the rule – the women of Sparta

Although Spartan women could not be citizens or hold government positions, they were educated and physically fit. They could also own property and represent themselves legally. They were older than Athenian women when they married. Their main role was to produce strong sons to fight for Sparta.

Some restrictions placed on women in ancient Greece

- They were required to put a newborn baby out to die if the man of the house said so.
- They were not educated.
- They could not attend the gymnasium.
- They could not participate in public life or institutions.
- They could not visit the agora except to fetch water or, in the case of poorer women, sell some items.
- They had virtually no legal or political rights.
- They could legally have their children and dowry taken from them if divorced by their husband.
- They could not attend the Olympic Games.
- They were not allowed to attend feasts and men's discussions (called *symposia*) held in their homes.
- They could not, by law, inherit property.

Source 2 Restrictions on women in ancient Greece

Foreigners

Foreign-born people in Athens were known as *metics* and they were usually professional men: merchants, manufacturers, tradesmen, craftsmen and artists. They could become citizens only by a special vote of the *Ekklesia*. They could own slaves, but not land. They also had to pay taxes and would sometimes have to serve in the army.

Sparta had a similar group of people who were known as *perioikoi*. These men and their families lived in the towns and villages surrounding the central city. As Spartiates were forbidden from engaging in any commercial activity, the *perioikoi* did most of the trading and other professional work in Sparta.

Slaves

Slaves in ancient Greece were regarded as property. They might have been prisoners of war, people sold by very poor families or abandoned babies. By the 5th century BCE, slaves made up about 30 per cent of the population of Athens.



Source 3 An artist's impression of slaves being sold in a Greek marketplace

Male slaves typically worked on farms, mines and ships. They also made up a large part of Athens' police force. If they were highly educated, they might teach the male children of a wealthy household. Female slaves mostly worked around the home. A few slaves in Athens were treated well. Some were even granted their freedom. But many, especially those working on ships or in the mines, had brutal, short lives.

Slaves in Sparta (known as *helots*) made up most of the population. Each Spartiate was given land by the city-state as a source of income. As the Spartiates were not allowed to work, the *helots* did all the labour – raising the food and doing the household chores. *Helots* were treated very badly and they often organised rebellions to try to improve their lot.

Check your learning 9.6

Remember and understand

- 1 What were some of the restrictions placed on women living in ancient Athens?
- 2 What sorts of people were typically slaves in ancient Greece, and what jobs did they do?

Apply and analyse

- 3 Who would you have been if you had the choice: a Spartan woman or an educated male slave working as a tutor? Disregard your gender in answering this question, and give reasons for your choice.

Evaluate and create

- 4 Referring to the text and sources in this section, write a short creative recount to describe a typical day in the life of a wealthy Greek woman.

9B rich task

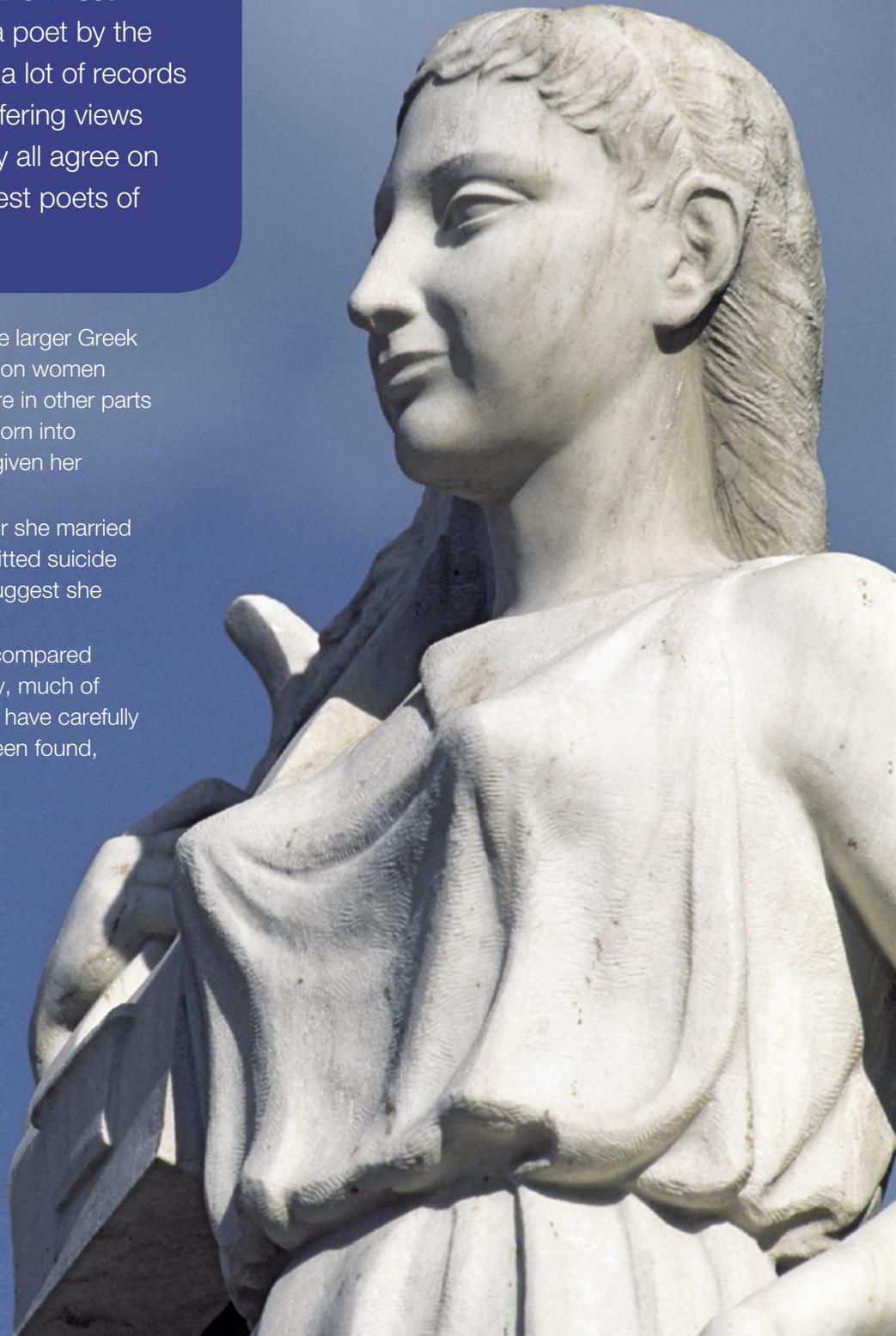
Sappho

One woman who was not typical of most women in ancient Greece was a poet by the name of Sappho. There are not a lot of records about her, so historians have differing views about her life. But one thing they all agree on is that she was one of the greatest poets of ancient Greece.

Sappho was born on Lesbos, one of the larger Greek islands in the Aegean Sea. Restrictions on women were less rigid on Lesbos than they were in other parts of Greece. Historians believe she was born into a wealthy family. This would also have given her greater freedoms.

There is much debate about whether she married and had children. Some say she committed suicide after a love affair went wrong. Others suggest she preferred the company of women.

Sappho's poetry was very unusual compared to other poets of her time. Unfortunately, much of Sappho's work has been lost. Scholars have carefully put together the fragments that have been found, some on ancient rubbish dumps.



Source 1 A sculpture of Sappho at Mytilene on the Greek island of Lesbos

skilldrill

Generating historical inquiry questions

One of the first and most important steps in conducting a historical inquiry is to generate key questions. The questions that you generate will direct the research that you undertake.

Usually, historians generate one broad, overarching question for their inquiry – for example: ‘Who was Sappho and why was she historically significant?’ After that, they generate more specific questions that are related to their overall inquiry question. You will need to generate a mixture of:

- closed or simple questions (e.g. ‘When did event X take place?’)
- open or probing questions (e.g. ‘Why did event X take place?’)
- questions that relate to the process of historical inquiry (e.g. ‘What evidence is there?’, ‘What other sources might be needed?’).

The first step in generating questions is to think about what you already know about the topic. Use this knowledge as a springboard for questions that will help you understand the topic in more depth. Use a table like the one below to brainstorm all the things you know (in short statements) in one column. In the second column, generate a related question that will help to deepen or build your understanding. Remember to include a mix of the three question types described above.

| Overarching inquiry question: | |
|-------------------------------|---|
| What I already know | Questions to help me deepen or build my understanding |
| Point 1 | Question/s related to point 1 |
| Point 2 | Question/s related to point 2 |
| | |

For a detailed description of this skill, refer to page 173 of ‘The history toolkit’.

Apply the skill

- 1 Use the following process to generate a range of questions related to the overarching historical inquiry question: ‘Who was Sappho and why was she historically significant?’ Copy the following table into your notebook. First, list what you already know as a result of reading the passage about Sappho in the first column. In the second column, generate related questions that will help to build your understanding. The first few have been done for you.

| Overarching inquiry question: ‘Who was Sappho and why was she historically significant?’ | |
|--|--|
| What I already know | Questions to help me deepen or build my understanding |
| Sappho was not typical of women in ancient Greece. | When did Sappho live and die? (Closed or simple question) How was Sappho different from other women in ancient Greece? (Open or probing question) |
| Historians have different views about her life. | What are some of the different views historians hold about the life of Sappho? (Open or probing question) |
| | |

Extend your understanding

- 1 Conduct some further Internet research into the life of Sappho. See if you can answer each of the questions you generated in the task above.
- 2 Virginia Woolf (1882–1941) was a highly educated British writer, discriminated against because she was female. In her book *A Room of One’s Own* she wrote:
Women have served all these centuries as looking-glasses possessing the magic and

delicious power of reflecting the figure of a man at twice its natural size.

With a partner, discuss:

- a what this quotation means, and what it reveals about how women such as Woolf were regarded in Western society as recently as the 20th century
- b how this situation compares with the social role of women in ancient Greece.

9.7 Religious beliefs and practices

The ancient Greeks believed in a great many deities (gods and goddesses). Each was seen to be in charge of certain things. Most of the festivals that were held in ancient Greece were designed to honour the gods. What the people believed was reinforced by their myths and legends. The beliefs of the ancient Greeks had a major influence on the way they lived their lives.

Beliefs and values in ancient Greece

Every morning, a Greek family would pray at the household shrine. The deity that they prayed to depended on what was happening. A man going off to fight might pray to Ares, the god of war. A woman tending a garden might pray to Hegemone, goddess of plants. Offerings, often wine or food, would be left on the shrine.

How one prayed was also important. For example, to pray to **Hades**, god of the **Underworld**, people extended their arms forward with palms parallel to the ground. Prayers and offerings (such as sacrifices of slaughtered animals) might also be made at temples.

One of the main events held to honour the gods was the Olympic Games (see Source 1 on page 268–269), which honoured the god Zeus, the king of the gods. Another festival was the annual Panathenaea, which honoured the goddess of Athens, Athene.

Temples

Temples in ancient Greece were built as ‘homes’ for the deities whenever they were on Earth. Their design reflected this function – they were impressive, huge structures. Usually, they were built on a hill called an acropolis. They were decorated, inside and out. A statue of the deity for whom the temple was made was erected inside.



Source 1 An artist's impression of the Parthenon when first built. The temple, built on the Acropolis in Athens, was dedicated to the city's patron, Athene, the goddess of war and wisdom. The artwork at the front of the temple depicted scenes from her 'life', as well as other gods, battles and feasts.



Source 2 An artist's impression of the key gods and goddesses of Mount Olympus

Oracles and seers

Sometimes, people felt a need to contact a deity more directly than was possible through rituals such as sacrifices and festivals. For example, a ruler might wish to ask a god about whether he should go to war. To make such contact, people had to consult an oracle or a seer.

An oracle was a person or thing that the ancient Greeks thought of as a portal through which the gods could pass messages. If the oracle's message was confusing, it was often interpreted by priests.

A seer interpreted a deity's wishes by analysing dreams and interpreting signs. For example, a seer might interpret what he or she saw in the guts of sacrificed animals, or in the pattern of leaves.

Check your learning 9.7

Remember and understand

- 1 Give one example of how religious beliefs might affect how a family in ancient Greece started their day.
- 2 Explain how the ancient Olympic Games were linked to the religious beliefs of the people.
- 3
 - a Why might a leader in ancient Greece visit each of the following:
 - an oracle
 - a seer?
 - b Describe two things a seer might do to provide the answer required.
 - c Can you suggest whom people today might consult to get answers about what might happen in their lives or what actions they should take?

Evaluate and create

- 4 Create a new deity for ancient Greece. Sketch him or her (use labels and stick figures if you cannot draw). Describe this deity's role. List the different ways in which your deity would have affected the lives of the ancient Greeks.

9.8 The birth of the Olympic Games

The first ancient Olympic Games were held in 776 BCE in the city-state of Olympia. In many ways, the games began as a ritual tied closely to religious beliefs and practices. Sporting events took place alongside ritual sacrifices to honour the god Zeus.

The Games began with the sacrifice of an animal. Its bloodied remains were placed on the altar to Zeus and set on fire by a top athlete. Athletes trained hard, initially competing for no more than a wreath of olive leaves. Later, however, Olympic champions enjoyed fame and notoriety all across Greece.

The five-day Games were held every four years until 394 BCE, when they were stopped by the Christian Roman emperor Theodosius I.

When the Spartans began competing, events such as spear throwing, discus throwing, wrestling and jumping were included. Later came boxing, the marathon, the **pentathlon**, the **pankration**, and chariot racing.

Such was the sense of duty to participate in the Games, that even involvement in wars was halted.

Check your learning 9.8

Remember and understand

- 1 When were the first ancient Olympic Games held, and when did they end?
- 2 Examine Source 1. Describe five things that are happening in this artist's impression of a day at the ancient Olympics.

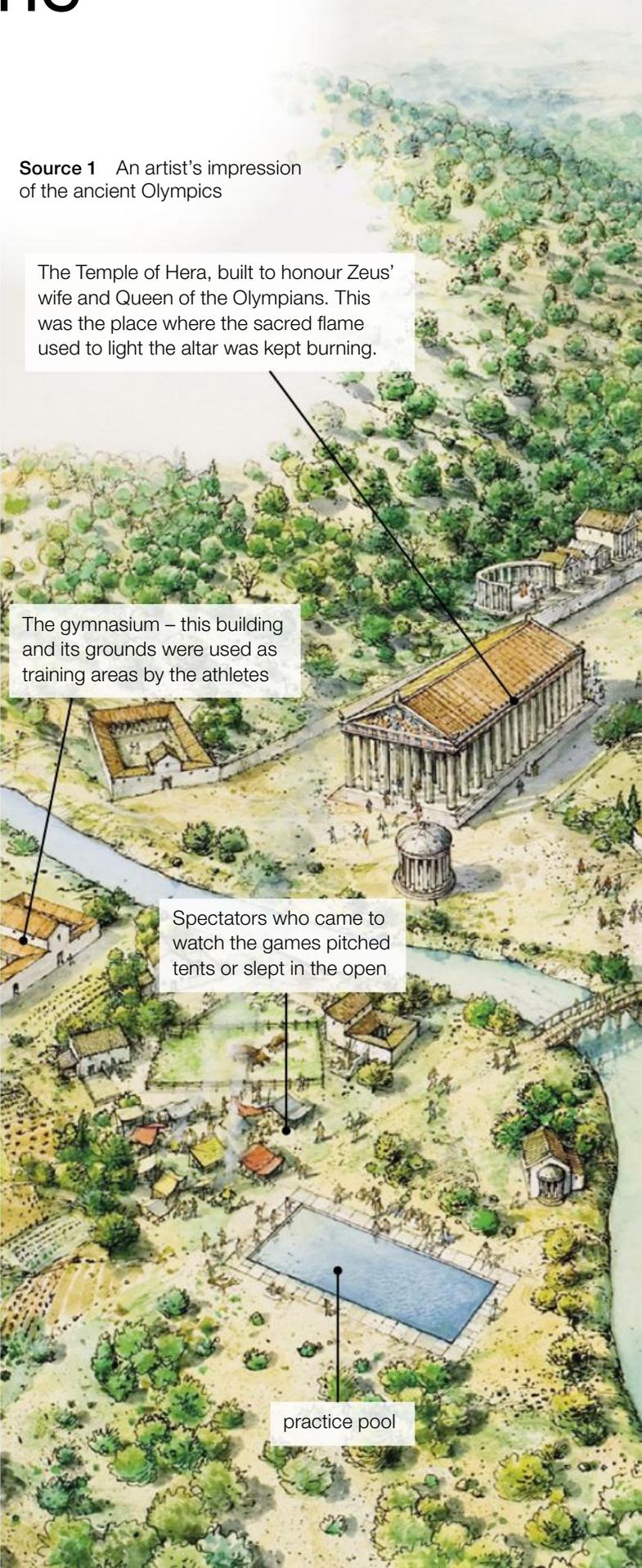
Apply and analyse

- 3 Prepare a large Venn diagram in your notebook to compare and contrast as many aspects of the ancient and modern Olympics as you can.

Evaluate and create

- 4 Conduct some research into one of the different types of competitions that were held at the ancient Olympic Games (for example chariot racing, *pankration*, pentathlon) and prepare a brief report outlining the competition rules.

Source 1 An artist's impression of the ancient Olympics

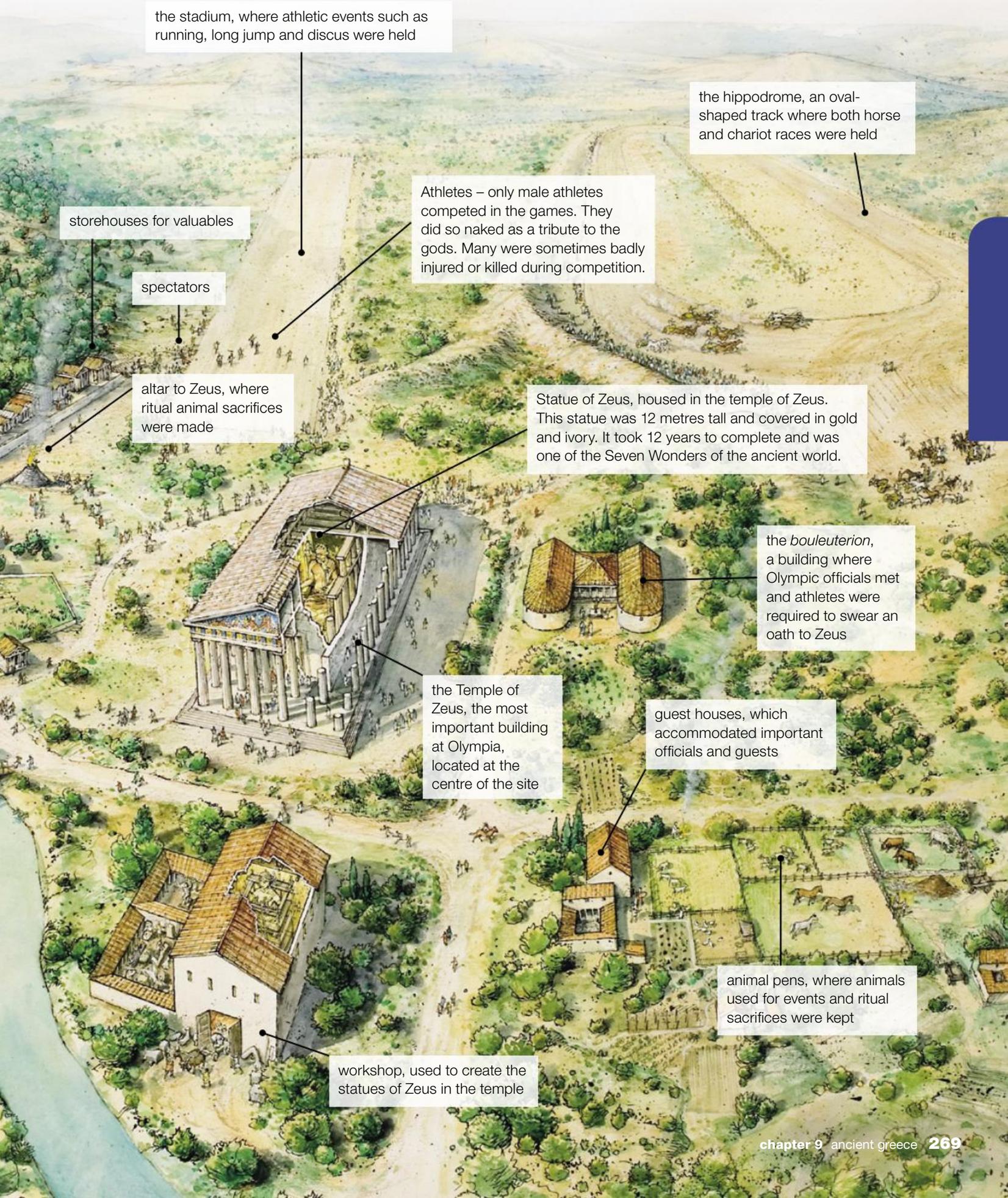


The Temple of Hera, built to honour Zeus' wife and Queen of the Olympians. This was the place where the sacred flame used to light the altar was kept burning.

The gymnasium – this building and its grounds were used as training areas by the athletes

Spectators who came to watch the games pitched tents or slept in the open

practice pool



the stadium, where athletic events such as running, long jump and discus were held

the hippodrome, an oval-shaped track where both horse and chariot races were held

storehouses for valuables

Athletes – only male athletes competed in the games. They did so naked as a tribute to the gods. Many were sometimes badly injured or killed during competition.

spectators

altar to Zeus, where ritual animal sacrifices were made

Statue of Zeus, housed in the temple of Zeus. This statue was 12 metres tall and covered in gold and ivory. It took 12 years to complete and was one of the Seven Wonders of the ancient world.

the *bouleuterion*, a building where Olympic officials met and athletes were required to swear an oath to Zeus

the Temple of Zeus, the most important building at Olympia, located at the centre of the site

guest houses, which accommodated important officials and guests

animal pens, where animals used for events and ritual sacrifices were kept

workshop, used to create the statues of Zeus in the temple

9.9 Everyday life

Options

How beliefs, values and practices influenced the lifestyle of the ancient Greeks is discussed in respect to the three topic areas listed below:

- everyday life
- warfare
- death and funeral customs.

Choose only ONE of these topic areas to study.

It was very important to be a good citizen in ancient Greece. A good citizen devoted his life to the protection and growing prosperity of his city-state. This devotion was reflected in many aspects of daily life in ancient Greece, in its art and culture, and in the education of its future citizens.

Education

Girls were required to be good wives, mothers and keepers of the home. As a result, they did not receive much of an education beyond household matters. For boys, however, education started at age seven and might continue until their late teens, especially if they were the sons of wealthy families.

Besides learning to read and write, boys studied mathematics, poetry, music and dance (see Source 1), athletics and

gymnastics, and sometimes philosophy and public speaking. These were seen as the necessary skills for a well-rounded, good citizen.

Fashion and beauty

Clothing in ancient Greece was loose-fitting and simple. A common garment worn by both men and women was known as a *chiton*. *Chitons* were knee-length for young men and floor length for women and older men. These garments were usually made of linen or wool draped over the body, and were held in place with brooches and belts. Shoes, if worn, were typically sandals. Jewellery was popular, even for men for a time. Women always covered their head with a veil when they left the home.

Rich women used powdered lead and chalk to make their skin look pale. This indicated their upper-class status. They would also use other make-up, such as eyeshadow made from ground charcoal mixed with olive oil, or rouge for the cheeks made from crushed mulberries.



Source 1 A detail from an ancient Greek amphora showing a boy learning to dance. Amphoras were ceramic storage pots, used for food and liquids. Much of what we know about ancient Greek culture comes from scenes painted on such pots.



Source 2 Statue of a Greek woman wearing a *chiton*

Food

The ancient Greeks ate a simple diet. Grains, like wheat and barley, wine and olive oil were the most common foods. Grains were ground to make bread or soaked in water to form a porridge. Ancient Greeks also ate vegetables and fruit, goat's cheese, eggs, nuts, and sometimes honey and sesame cakes. Fish was the main source of protein. Meat was eaten rarely (except in Sparta, where soldiers ate a lot of pork). Usually the only meat eaten by the poor followed an animal sacrifice. The animal's bones, skin and blood were burned to ash as an offering to a god. Its meat was cooked and shared among the people.

Feasts

Feasts were a common form of entertainment. They were men-only affairs. The only women allowed were known as the *hetairai*. These women were usually foreigners and were employed to entertain men. Food was served by slaves. Guests lay around on couches while they ate and drank (see Source 4). After the meal, the interesting part of the evening began – the symposium. During the symposium, men discussed the important issues of the day.

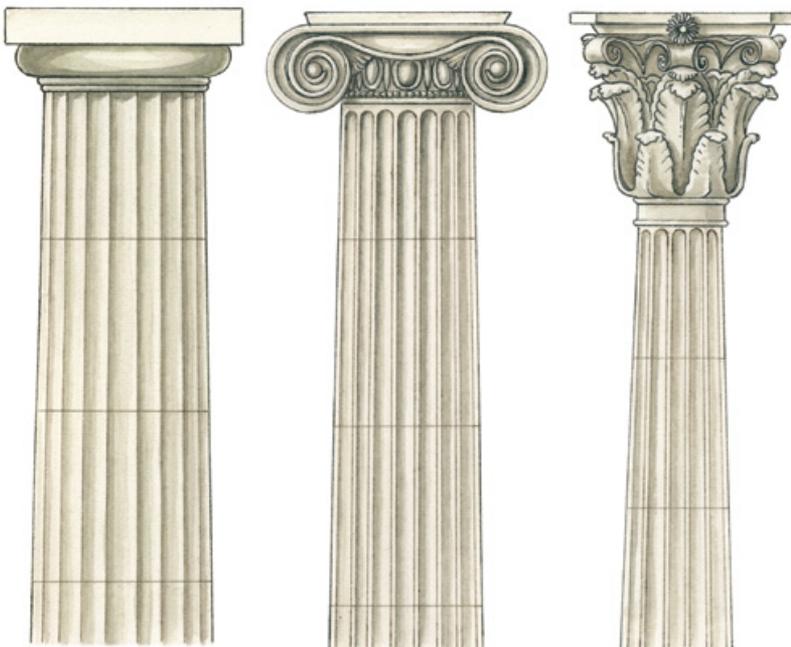


Source 4 This ancient Greek drinking cup is decorated with a scene of a feast.

Doric style: a plain design at the top of a sturdy, chunky column

Ionic style: a scrolled top (like the curl of a shell) and a thinner, finer column

Corinthian style: a very ornate top, decorated with rows of leaves, and a thinner, finer column



Source 3 The three styles of Greek columns

Architecture

During the Golden Age of Greece (c. 500 to 300 BCE), peace was finally made with Greece's long-time enemy, Persia. This truce allowed Athens to rebuild its war-damaged buildings such as the Parthenon. This, in turn, allowed Athenians to become more involved in cultural activities.

Temples were the most important buildings in ancient Greece. This reflected the important role that religion played in people's lives. But these magnificent structures also served to show off the wealth, skill and artistic ability of a city-state. The architects of ancient Greece used three different column designs – Doric, Ionic and Corinthian (see Source 3). The Parthenon was built in the Doric style.

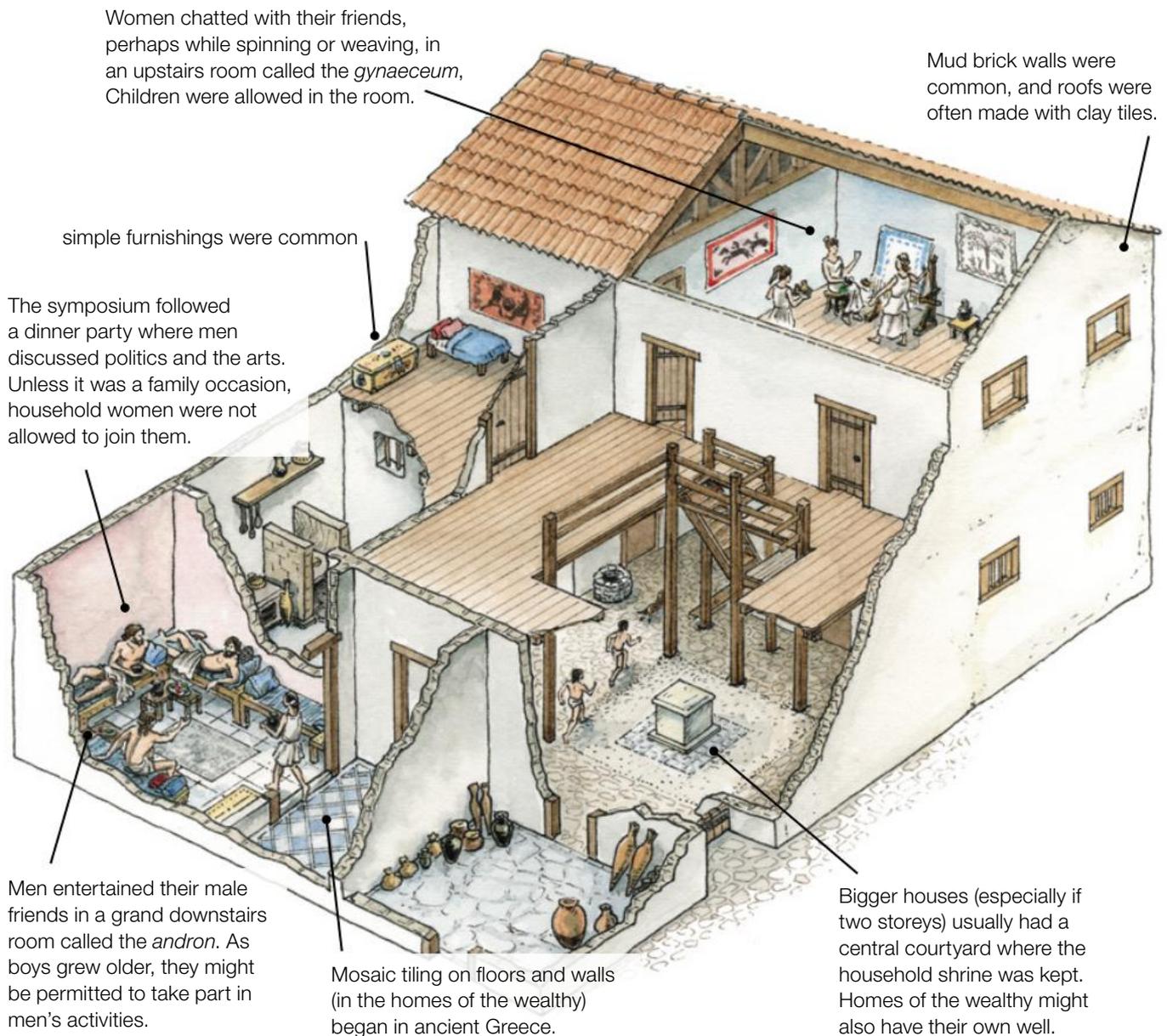
Greek housing

Most women in ancient Greece were generally confined to the home. Unsurprisingly, wealthy married women led more pleasant lives than poor women. For wealthy women, there were occasional trips to religious festivals, weddings and funerals as well as occasional visits to the homes of other women. Life for poor women in ancient Greece was harder. It consisted of constant work including looking after children, fetching water, cooking food, spinning and weaving cloth.

The social divisions between men and women in ancient Greece were very strict. These divisions were clearly visible in the layout of Greek homes (see Source 5). For example, an area known as the *gynaecium* was set aside for women only. It was located at the back of most Greek homes, often upstairs. Similarly, an area known as the *andron* was set aside for men only. It was a large downstairs room in which men could relax, entertain guests and discuss daily events.

The living areas of slaves were separate from those of the family. Slaves would typically work in the kitchen or gardens and would not be seen in the house unless serving their master and family.

Source 5 An artist's impression of a wealthy family's home in ancient Greece



Drama

Ancient Greece gave us the basis of all Western drama – the theatre. Performances began as song-and-dance festivals to honour Dionysus, the god of wine and pleasure. Over time, they became more structured. Writers began to compete to have their ‘performances’ chosen. Theatre became so popular that large, open-air auditoriums were built throughout Greece as spaces where these performances could take place (see Source 6).

Source 6 An artist’s impression of an early Greek auditorium

A device like a crane was often used to make actors appear to fly (when playing the role of gods).

Tiered seating was designed to give spectators further back a good view of the performance.

Judges and important officials sat at the front of the auditorium.

Many actors wore masks of stiffened cloth with large funnelled openings for their mouths to help them project their voice. The masks were very big so that spectators at the back of the auditorium could see them.

A painted scene was often hung or constructed at the back of the *skene*. The modern word ‘scene’ comes from this ancient Greek word.

Plays were performed in an area known as the *orchestra*. Sometimes this was made of packed earth and sometimes it was tiled.

Check your learning 9.9

Remember and understand

- 1 Describe the different ways in which boys and girls were educated.
- 2 What might you find in the make-up kit of a wealthy Greek woman?
- 3 How were the homes of wealthy Greek families organised? How did houses reflect the different roles of men, women and slaves in Greek society?

Apply and analyse

- 4 Why do you think women covered their head when leaving the house?

- 5
 - a What happened at a symposium?
 - b Find out how this word is used today. What do you conclude?

Evaluate and create

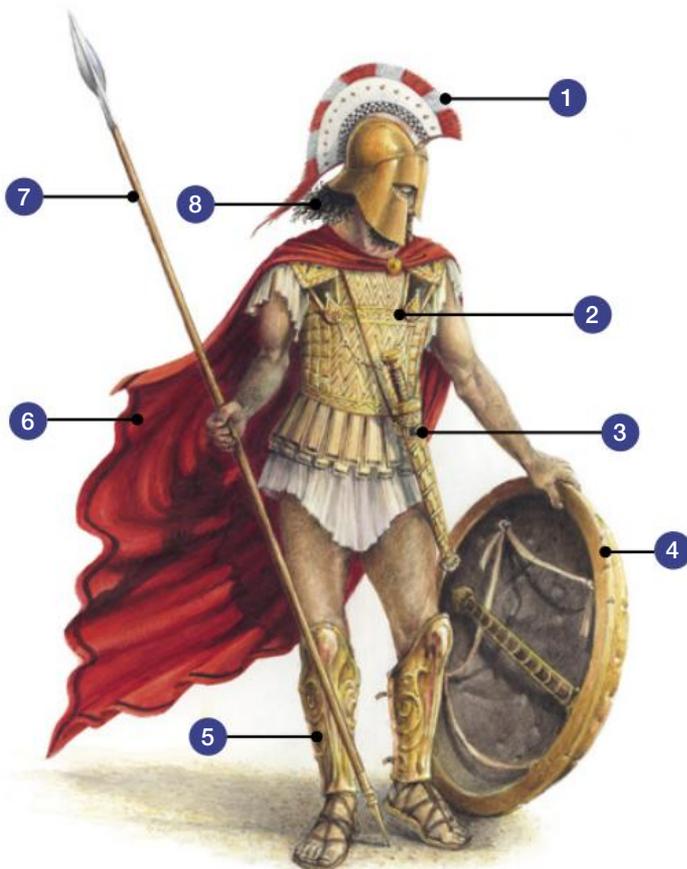
- 6 Design, or make a model of, a Greek temple. Use information presented in this text, and from other sources you have found through research, to help you decide on your design features. Label elements of your finished design appropriately.

9.10 Warfare

Early ancient Greek armies consisted mainly of foot soldiers recruited from the poor. They fought with perhaps no more than stones and spears. Only the wealthy could afford horses and better weapons. Over time, warfare became more complex, moving on from conflicts fought in open areas to assaults on walled cities. This required different strategies and weapons, as well as a different type of soldier.

The hoplite

From the 7th century BCE onwards, better-trained, better-armoured foot soldiers emerged. This type of soldier was known as a **hoplite**. Greek city-states each had their own armies of hoplites. When wars ended, hoplites went back to their regular lives and jobs – all except for the Spartans. Sparta was the only Greek city-state with an army that was constantly on duty and ready to fight.



Source 1 An artist's impression of a Spartan hoplite

The navy

The strength of the city-states of Athens and Corinth was their navies – fleets of triremes that could be sailed or rowed. A trireme had three tiers of oarsmen on each side of the hull, sitting one above the other. The trireme was built so that it could sail close to the shore. A heavy **battering ram** protruded from the bow (the front of the boat). The idea was to ram this into the hull of an enemy vessel to sink it.



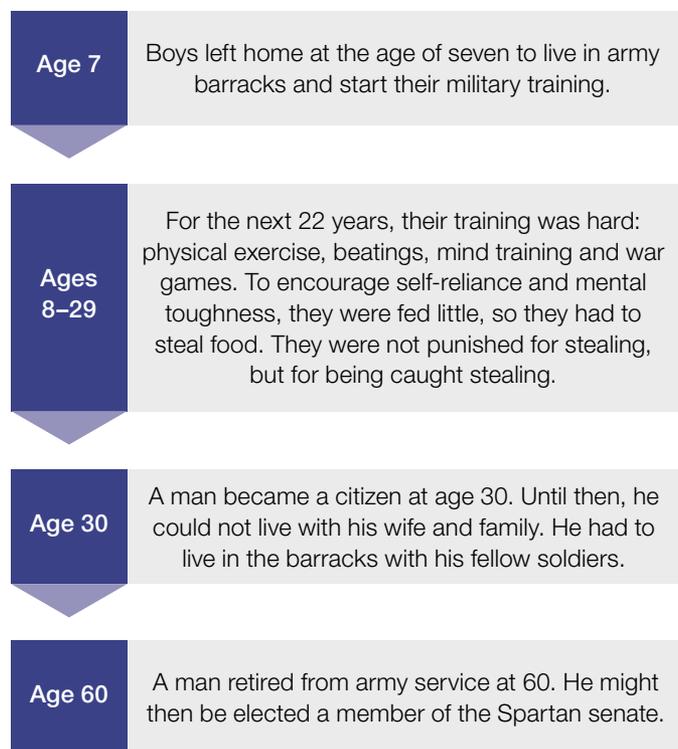
Source 2 An artist's impression of a typical sea battle during the times of the ancient Greeks. Ships were sunk by ramming into one another.

- 1 Helmet; some curved out at the bottom to deflect slipping blades away from the body. It covered everything but the eyes.
- 2 A chest plate called a *cuirass*, made from bronze or leather. Sometimes it was moulded to look like a bare chest (abs and all). Armour was heavy (about 30 kilograms) and hot to wear in the summer.
- 3 Double-edged sword, with a curved blade
- 4 Concave round shield, typically decorated
- 5 Metal greaves, which guarded the shins
- 6 Red cloak; some researchers suggest that this was not worn in battle
- 7 Spear, over 2 metres long, with an iron blade at one end and bronze spike at the other
- 8 Long hair, typically combed and decorated before a battle

Military structure in Sparta

Sparta became a military state with a professional army in the 7th century BCE. All citizens (only men could be citizens) had to be soldiers. Social roles such as farmers, merchants, potters and sculptors were not options for Spartan men. The woman's role was to have sons who would become strong warriors. All saw it as an honour to die for Sparta.

In Sparta, weak or sick babies were killed or left out in the open to die. Hence, Spartan children were healthy and tough. But Spartan families did not have the luxuries and leisure time enjoyed by families in Athens during its Golden Age. Spartans were driven by military obligations and duties.



Source 3 The life of a Spartan man

Warfare technologies and strategies

Technology in warfare was first used to great effect in ancient Greece. As well as battle formations such as the phalanx, the ancient Greeks used and developed many devices capable of attacking and scaling fortifications. These included:

- battering rams – used to slam into weaker spots in a city's fortifications, such as wooden gates
- catapults – big slings that were designed to throw heavy rocks great distances
- multi-storeyed wooden towers on wheels (later called belfreys) – these structures shielded attackers as they were pushed towards a city wall. Once in place, the attackers inside the towers were able to scale the wall.

Later, the Roman army went on to use these devices and ideas to become the best organised army in the ancient world.

Gods and heroes

As discussed earlier, oracles might be consulted before a battle. Prayers and sacrifices were made to the gods, both to plead for victory and to thank them in the event that this happened.

Heroes were valued too, and stories about them became part of the **mythology** of ancient Greece. They include Heracles, Jason and his band of Argonauts, and the key warriors of the Trojan wars such as Achilles, Odysseus, Hector and Paris.

One of the works said to have been written by Homer, the *Odyssey*, tells the story of Odysseus' long journey home from the Battle of Troy. It has been the inspiration for countless stories, novels and films.

Check your learning 9.10

Remember and understand

- 1 What was the main difference between the Spartan army and other ancient Greek armies?
- 2 How were hoplites different from earlier Greek soldiers?
- 3 How heavy was the armour worn by hoplites?

Apply and analyse

- 4 Use the Internet to find out more about the battle formation known as the phalanx. Why do you think it became such an important fighting strategy in ancient Greece?

Evaluate and create

- 5 Find out about the legend of Jason and the Argonauts. Decide whether you would consider Jason a Greek hero or not, and give reasons.

9.11 Significant individual: Leonidas

Leonidas, whose name means ‘lion-like’, was the king of Sparta between 490 BCE and 480 BCE. He became famous in Greek literature and legend because of his heroic and brave actions in leading a small force of Greeks against the much larger Persian army of Xerxes at the Battle of Thermopylae in 480 BCE. The story of his sacrifice has been an inspiration to many generations, and more recently has been portrayed in the film *300*.

Leonidas’ early life

Although little is known about the early life of Leonidas, many historians believe he was born in Sparta some time between 530 and 500 BCE. He was the son of the Spartan king Anaxandrius II. The Spartans did not leave much in the way of written records, so we do not know a great deal about how princes were treated compared to other youths. However, it is likely that Leonidas was put through the same rigorous training as other young Spartans.

Leonidas had an older half-brother, Cleomenes I, who became king when their father died. It is believed that, in 490 BCE, Cleomenes went mad and committed suicide. Leonidas became the next king of Sparta.

King of Sparta

When he became king, Leonidas adopted many of the policies of his half-brother, which included attacks on Athens, Sparta’s rival city-state. He also expanded Sparta’s foreign policy, leading to conflict with Persia to the east. Trouble with Persia had begun in 546 BCE when Greek city-states in the region of Ionia (see Source 3 on page 253) had been captured by the Persians.

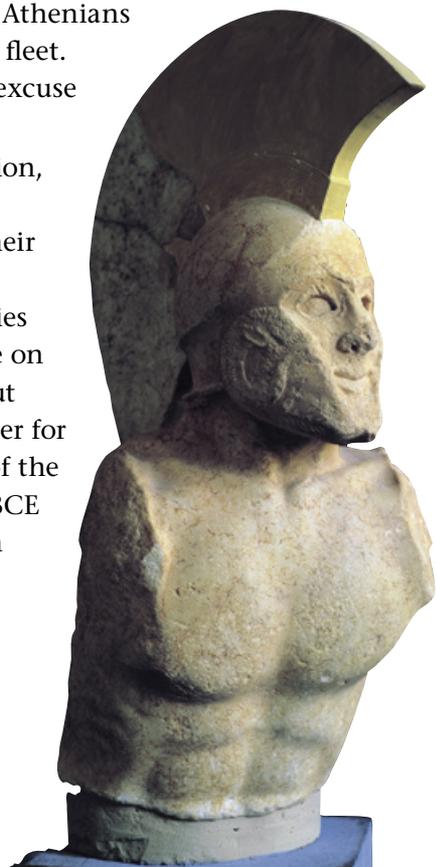


Source 1 British actor Gerard Butler playing Leonidas in the film *300*, which recounts the events of the Battle of Thermopylae and the heroic last stand of Leonidas

When Ionia rebelled in 500 BCE, the Athenians lent their support by sending a small fleet. Persia’s king, Darius, used this as an excuse to invade mainland Greece.

Persia’s first two attempts at invasion, which took place during the rule of Cleomenes, were unsuccessful. On their third attempt, Leonidas had become king. When word came that the armies of the new Persian king, Xerxes, were on the move, the city-states of Greece put aside their differences to work together for their common defence. An alliance of the Greek city-states was formed in 481 BCE and command of the army was given to Sparta.

Source 2 A marble bust of Spartan king Leonidas (c. 490–480 BCE)





Source 3 A 19th-century painting of Leonidas at the Battle of Thermopylae

Facing the Persians

When Leonidas realised that his army of about 6000 Greeks was up against a Persian army of over 200000, he had to rethink his planned defence. In the face of such overwhelming numbers, Leonidas decided that the extremely narrow terrain of Thermopylae would be a good place to block the Persian advance.

Unfortunately, Leonidas was forced to meet the Persians without the use of the full Spartan army. Xerxes had planned his invasion during important religious festivals for the Greeks. As the Persians approached, the Athenians were celebrating the Olympic Games and the Spartans were celebrating the Carneia.

Leonidas and his army were successful at holding the Persian advance for three days, until a traitor told the Persians how to go around the Greek lines. Surrounded, the Greeks had no chance. Leonidas sent most of his army away, remaining with only his 300 Spartans, their slaves and a few others. They were all killed in the ensuing battle.

Leonidas' legacy

Thermopylae may have been a defeat for the Greeks, but it was no great victory for the Persians. They lost a great number of men and were later defeated by the Greeks in a naval battle at Salamis. Persia never again attempted to invade Greece. It was the beginning of the end for the Persian Empire and the beginning of great things in Greece.

After the battle, Leonidas' body was taken to Xerxes, who mutilated it and presented the body as an example of what would happen to those who resist. Eventually, Leonidas' body was returned to Sparta where it was buried with full military honours. He was succeeded by his son Pleistarchus.

To this day, Leonidas of Sparta is remembered as the best example of Spartan bravery, courage and fighting spirit. This is summed up by the writing on his tomb: 'Go tell the Spartans, stranger passing by, that here obedient to their laws we lie.'

Check your learning 9.11

Remember and understand

- 1 During which years was Leonidas the king of Sparta?
- 2 Why did his rule end in 480 BCE?
- 3 Why was the size of Leonidas' army restricted at the time the Persians decided to attack?

Apply and analyse

- 4 Write a paragraph describing the effect that the actions of Leonidas and his small band at Thermopylae would have had on Greek morale.
- 5 With a partner, brainstorm the sounds likely to have been heard at the Battle of Thermopylae. Think about the way soldiers were dressed, the weapons used and the location. Conduct some extra research if you need to. Copy the table below into your notebook, then use it to compare and contrast the sounds you imagine would have been heard at Thermopylae with the sounds you might expect to hear in a modern battle. What has changed?

| Sounds of the Battle at Thermopylae in 480 BCE | Sounds of a 21st-century battle |
|--|---------------------------------|
| | |
| | |

Evaluate and create

- 6 Write a poem about Leonidas that conveys his characteristics as well as his heroic last stand against the Persians. You can also use your imagination and describe what you think he might have looked like and things he might have said to his wife or to members of his army leading up to or during the Battle of Thermopylae.

9.12 Death and funeral customs

Religious beliefs and traditions influenced what the ancient Greeks did when someone died. Death was thought to be the start of a long spiritual journey through Hades, the Underworld. This was the world of dead souls (called 'shades'). It was believed to be ruled by Hades, the god of the dead. A mythical river, the River Styx, separated it from the world of the living. Gaps and openings in the earth, such as cave tunnels and deep caverns, were seen as gateways to this gloomy realm.

Beliefs about death

The ancient Greeks believed that when a person died his or her destination after death was the decision of Atropos, one of three goddesses believed to control life on Earth. Dead souls were led into the Underworld by the messenger god, Hermes. A man called Charon (the ferryman) rowed those able to pay for the ride across the river to the Underworld (see Source 2). The fare was paid with a coin that was placed in the mouths of corpses.

Once they reached the other side, dead souls were judged by deities according to the life they had led on Earth. They ended up in one of three places (see Source 1). A three-headed dog named Cerberus guarded the entrance to Hades to stop the dead from leaving and the living from entering.

Source 1 The three possible destinations, for eternity, of dead Greek souls

| Destination | Description |
|-----------------|---|
| Elysian Fields | <ul style="list-style-type: none">• for the souls of heroes who had the favour of the god Zeus• a sunny, fragrant, peaceful and happy place |
| Asphodel Fields | <ul style="list-style-type: none">• for the majority of human souls, who were not heroes, nor all good or all wicked• a misty, grey, boring place where nothing much ever happened |
| Tartarus | <ul style="list-style-type: none">• for the souls of wicked people• a place of everlasting torment and misery, surrounded by a layer of night |

Source 2 An artist's impression of Charon the ferryman rowing the dead to the Underworld, which was known as Hades in ancient Greek times





Ancient Greek funeral rituals

- Wash body with seawater (if possible) and clean any wounds.
- Put a coin in the mouth and close mouth and eyes.
- Rub sweet-smelling oils into the skin and wrap the body in clean white (or grey) cloth.
- Display the body for at least a day in the main courtyard of the house, facing the door.

- Notify friends and relatives of the death so they can pay their respects.
- Make lots of noise, with loud displays of grief as people move around the corpse. This was regarded as a sign of respect for the dead. Hire professional mourners if necessary.

- Leave the house before daybreak for the burial plot or place where the body will be cremated (both outside the city walls).
- Transport the dead body using a horse and cart if this is affordable; otherwise organise some strong men of the family to carry the body on a stretcher. Men walk at the head of the funeral procession, women behind.
- Continue the loud wailing and crying, and have musicians add to the noise if available.

- Stand around until the body is burned away (if the body is being cremated) and then put out the flames with wine.
- Place burned bones in a funeral pot for burial.

- Men stay at the site to bury the body or burned remains, while women return to the house to organise a feast.
- If the corpse is not buried in a tomb, pile earth over the grave and cover it with a *stèle*.

- Family members return to the grave often to remember the loved one.
- Offerings of oil, food and wine are left and the *stèle* might be adorned with ribbons and flowers. A tube may be pushed into the dirt and wine poured into it to allow the dead person to 'drink' the wine offered.

Source 4 The steps to be followed when a person in ancient Greece died

Source 3 An ancient Greek vase showing funeral rituals being carried out

Funeral customs

When someone died in ancient Greece it was very important that others observe the correct rituals (see Source 4). Otherwise, it was believed, the dead person's soul would never find rest in the afterlife.

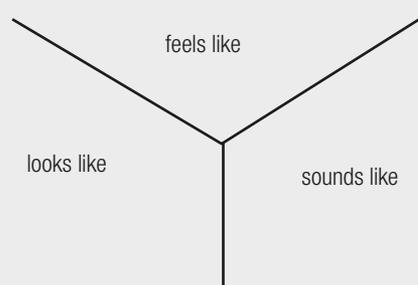
Check your learning 9.12

Remember and understand

- 1 Why was it common for funeral processions in Ancient Greece to be so noisy?
- 2 What beliefs influenced some other procedures that were undertaken when someone died?

Evaluate and create

- 3 In groups, create a game based on ancient Greek beliefs about the Underworld. Share the tasks involved in creating the game concepts and rules, and making the board and pieces.
- 4 Look carefully at Sources 1 and 2. Copy the Y-chart below into your notebook and use it to determine what you think the Underworld of the ancient Greeks might have looked like, sounded like and felt like.



Ancient Greek pottery

Ancient Greek pottery is a very useful historical source. Because it is so durable, many pieces have been recovered by archaeologists and studied by historians. The ancient Greeks used ceramics for cooking, serving, transporting and storing all kinds of food and materials. The amphora was the most common type of storage pot used in ancient Greece. Because the Greeks decorated pots in distinctive styles over different **time periods** (or **eras**), they can be used to work out when settlements were built, lived in or abandoned. The decorations also indicate the types of things that were important to these societies, and what life was like. In fact, much of what we know about education, festivals and daily life comes from scenes painted on pots.

Historians have identified four main styles of ancient Greek pottery (see Source 1), each with its own characteristics.



Source 2 An ancient Greek amphora in the black-figure style, 6th century BCE

Source 1 Development of Greek pottery over time

| Style | Approximate date | Characteristics | Image | Reliable URLs |
|---------------------|------------------|---|-------|---------------|
| Geometric | 900–700 BCE | <ul style="list-style-type: none"> Decorated with complex geometric patterns such as checks, meanders, zigzags and concentric circles. Painted in fine black lines. Angular stick figures of humans and animals. | | |
| Oriental | 700–620 BCE | <ul style="list-style-type: none"> Decorated with mythological and exotic creatures such as sirens, lions, sphinxes and phoenixes. Cartoon-like figures coloured with white, brown and purple slip (glaze). Details, such as hair and feathers, scratched into the clay, perhaps influenced by the ivory and bone carvings of Africa and Asia. | | |
| Black-figure | 620–480 BCE | | | |
| Red-figure | 520–330 BCE | | | |

skilldrill

Using the Internet to find relevant and reliable sources

Being able to locate relevant primary and secondary sources using the Internet is an important historical skill. However, you need to keep in mind that not all information you find on the Internet is necessarily true, accurate, reliable or credible. So, in addition to being able to find source material online, you need to be able to evaluate the reliability of the information you find.

Use the following steps to apply this skill:

- Step 1** Identify key words related to your topic and type these into a search engine such as Google. (Use only these keywords – do not type in whole sentences or questions.)
- Step 2** Add further relevant keywords to refine your search if you cannot find what you want on your first attempt.
- Step 3** Look beyond the first page of results. The best results do not always appear first.
- Step 4** Assess the reliability of each site by asking yourself the following questions:
- Who is the author or creator? If it is an individual, do they have any qualifications listed (e.g. a degree, title)? If it is an organisation, is it a reputable organisation such as a government or university department?
 - What is the purpose of the website? Is it trying to inform, persuade or sell?
 - Is the site objective? Is the author's point of view biased?
 - Is the information accurate? Can the information be verified if you cross-check it with other sources of information?

- Does the site contain spelling mistakes or grammatical errors? (If so, this is usually an indication that the site is not particularly reliable.)
- Is the information current? Can you find evidence of recent updates?

For a detailed description of this skill, refer to pages 174–175 of 'The history toolkit'.

Apply the skill

- Copy the table (Source 1) into your notebook. It outlines four different styles of Greek pottery and the approximate period in which each style was popular. Characteristics of the first two styles have been provided for you as examples.
- Conduct an Internet search to find relevant, credible and reliable source material about the other styles of ancient Greek pottery. You will need to locate information about the characteristics of the black-figure and red-figure styles, and record this information in dot points in your table.
- Find images of pots created in each of the four styles, in order to familiarise yourself with their features and appearance.
- In the final column of the table, record the URLs of the sites you have found and believe to be credible and reliable (using the four steps outlined on this page).



Source 3 An example of ancient Greek pottery in the geometric style, 8th century BCE

Extend your understanding

- Design a Greek amphora in one of the styles you have researched. Consider the following features before you begin:
 - type of decoration – patterns or people
 - colours
 - depiction of figures – stick figures, cartoon-like or realistic
 - amount of detail – hair, features, clothing.
- Imagine that your amphora was unearthed in 2017. What would it reveal about life in ancient Greece?

Depth study 2: Investigating one ancient society

Ancient Rome

The civilisation of ancient Rome lasted about 1300 years. At its heart was the city of Rome, a city first founded by the ancient Etruscans 2800 years ago. In 509 BCE, the inhabitants of Rome set up a republic. Fuelled by trade, alliances and the victories of its army, the republic of Rome grew in size and strength. By 201 BCE, it included today's mainland Italy and the islands of Sicily, Sardinia and Corsica. Within another 300 years, the Roman army had conquered lands as far north as today's England and as far east as Azerbaijan. Many of Rome's traditions, beliefs, cultural practices and technical skills have heavily influenced Western civilisation.



10A

How did physical features influence development in ancient Rome?

- 1 Ancient Rome's position at the centre of the Mediterranean world made it easy for the Romans to make contact with other societies. How might this have influenced the development of ancient Rome?

10B

What shaped the roles of key groups in ancient Rome?

- 1 Only certain people could be citizens in ancient Rome. Who do you predict might not have been allowed to be citizens?



chapter 10

Source 1 A stone carving of members of the Praetorian Guard, a highly trained group of officers and soldiers assigned to protect emperors in ancient Rome

10C

How did beliefs, values and practices influence ancient Roman society?

- 1 The ancient Romans valued *virtus*, which means courage, honour and toughness. How do you think this might have influenced the development of the Roman army and its warfare practices?

Investigating one ancient society

This depth study offers a choice of five topics:

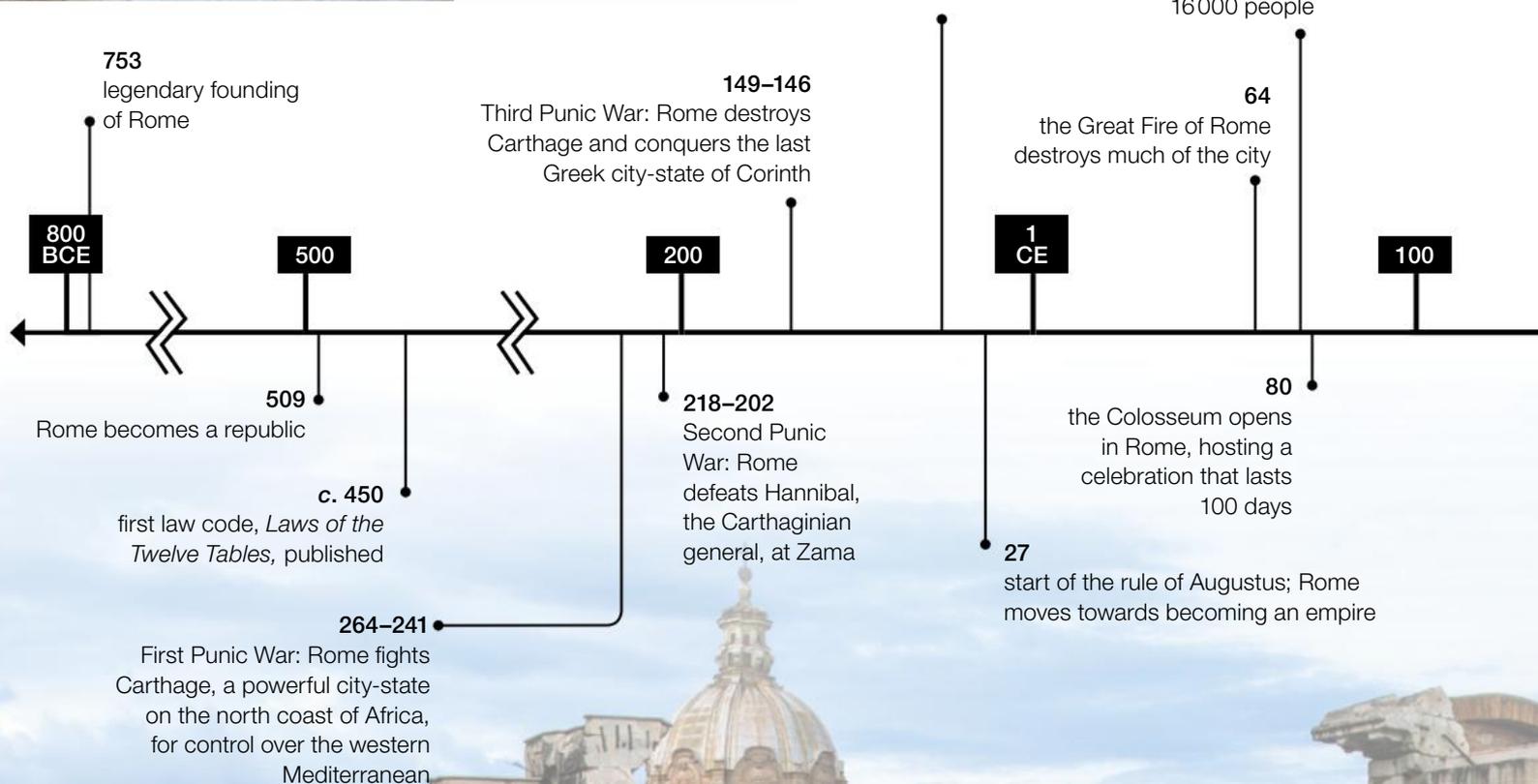
- Ancient Egypt
- Ancient Greece
- Ancient Rome
- Ancient India
- Ancient China

You must choose AT LEAST ONE of these topics for study.

10.1 Ancient Rome: a timeline



The foundation myth of Rome tells the story of Romulus and Remus – sons of the war god, Mars. The brothers were saved by a she-wolf before being raised by a shepherd and his wife. Romulus is said to have killed his brother Remus before founding the city of Rome and making himself king – hence the name Rome.

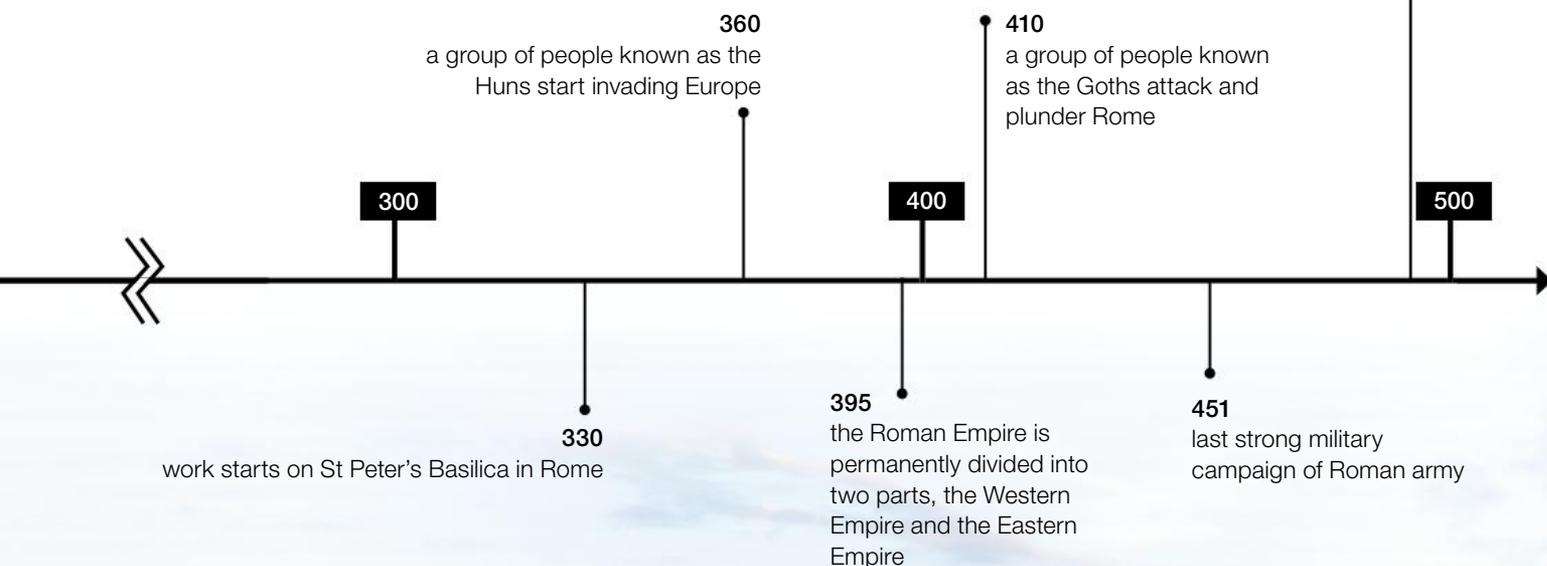


Source 1 A timeline of some key events and developments in the history of ancient Rome



476 CE
 'barbarian' forces
 remove the last
 Western emperor
 from power, marking
 an end to the Western
 Roman Empire

An artist's impression of the sacking of Rome by invading 'barbarians' – a term used by Romans to describe people from outside the empire



Check your learning 10.1

Remember and understand

- 1 In what year does legend say Rome was founded, and who is said to have founded the city?
- 2 When did Rome become a republic?
- 3 When was the Roman Empire permanently divided into the Eastern Empire and the Western Empire?
- 4 Who was Julius Caesar, and in what year was he assassinated?

Apply and analyse

- 5 Use the timeline to calculate how many years in total the Punic Wars lasted.

Evaluate and create

- 6 Select four events on the timeline that you think might have been particularly significant in the history of ancient Rome. For each event, generate one or two related questions that you would like to find out the answer to. For example, if you select the Great Fire of Rome in 64 CE, you might ask:

- What caused the fire?
- How many people were killed in the fire?

Record these questions in your notebook. Once you have finished working through the chapter, return to these questions and see if you are able to answer them. You may need to carry out some further research to find all the answers.

10.2 The Mediterranean Sea and the Tiber River

THE MEDITERRANEAN SEA AND SURROUNDING AREAS



Source 1

Source: Oxford University Press

The ancient Roman civilisation began in the region of Latium, in the central west of the Italian peninsula, around the 8th century BCE (see Source 1). A range of physical and geographical features contributed to people settling in Latium and establishing the city of Rome, which became the heart of the ancient Roman civilisation.

Most of the Italian peninsula is mountainous, but there is good farming land in a region known as Latium in the central west. The climate there is mild and wet in winter, and hot and dry in summer. The region is protected by the Apennines, a rugged mountain range that stretches down the centre of the peninsula (see Source 2).

The site on which the city of Rome was built was a strategic choice – it had seven hills that could be easily defended. The first settlers built their homes on these hilltops and farmed at the base of the hills. To the west of the city lay the Tiber River, which gave the Romans a vital trading route and, more importantly, easy access to the Mediterranean Sea.

THE ITALIAN PENINSULA



Source 2

Source: Oxford University Press

The Mediterranean Sea

The Mediterranean Sea covers an area of about 2.5 million square kilometres. It has little tidal movement and mostly stable wind patterns, so it has very few bad storms. This made sailing and navigation very easy. Ancient Rome's position at the centre of the Mediterranean Sea allowed it easy access to a range of seaports and markets around the Mediterranean region. Trade made seaports busy centres, where people of different cultures exchanged goods, ideas, technologies and processes.

The Romans became expert seafarers and they developed a strong navy, which helped them conquer new territories. At its peak, ancient Rome grew to control all the ancient civilisations located around the Mediterranean coast. These included the Carthaginians in north Africa, the Celts on the Iberian peninsula (modern-day Spain and Portugal), the Greeks and the Egyptians. The ancient Romans became so dominant in the region that they called the Mediterranean Sea *mare nostrum* – meaning 'our sea'.

The Tiber River

The Tiber River begins as freshwater springs in the Apennines. It then flows west 400 kilometres across the Italian peninsula to the Tyrrhenian Sea (see Source 2). The city of Rome developed on the eastern bank of the Tiber.

At first, the river did little more than mark off the territory of tribes in the region. As the city of Rome developed, the river became more important as a transport route. Upstream from its mouth it could be navigated for about a quarter of its length. Vessels that sailed its waters included boats propelled by oarsmen and barges dragged along by men walking the banks.

The river also served as an outlet for a huge sewer, the Cloaca Maxima, built around 600 BCE. The sewer's remains can still be seen in Rome today.

A port, Ostia, was built at the river mouth. Later it became an important naval base. Through Ostia and other ports such as Pozzuoli and Portus, trade goods poured into and out of Rome.

The Tiber also caused some problems for Rome. Each year it flooded with snow melt from the Apennines, sometimes seriously. This led successive Roman rulers to erect structures to strengthen riverbanks to protect areas of the city from floods. Wharves were also built.



Source 3 The Tiber River in Rome, with the Vatican in the background

Check your learning 10.2

Remember and understand

- 1 Where did the civilisation of ancient Rome begin?
- 2 What did the ancient Romans call the Mediterranean Sea, and why?

Apply and analyse

- 3 In your notebook, construct an acrostic poem using the word TIBER. Your poem should reflect the impact of the river on ancient Rome. Here is an example to give you an idea of what is required:

Tumbling from the mighty mountains
 Into the Mediterranean Sea
 Barges on its waters
 Enters the mighty Tiber –
 Rome's lifeblood.

Evaluate and create

- 4 Conduct photo research to create a four-page paper or digital album of *one* of the following: the Alps, the Tiber River, the Apennines, the Nile River or the Mediterranean Sea. Add suitable captions that help to explain how you think this feature may have influenced the growth of ancient Rome, and why.

10.3 Earthquakes and volcanoes

The moving tectonic plates under the Mediterranean region make it prone to earthquakes and volcanic eruptions. One fault line travels the length of the Apennines. Another runs across the Italian peninsula north of Naples (see Source 1).

Over the course of history, a number of earthquakes and the eruptions of volcanoes such as Mount Vesuvius and Mount Etna have had major impacts on the human settlements of ancient Rome. One of the most significant volcanic eruptions took place in 79 CE, when Mount Vesuvius erupted and destroyed the ancient Roman towns of Pompeii and Herculaneum. An estimated 16 000 people were killed.

Pompeii and Herculaneum

Pompeii and Herculaneum were situated about 220 kilometres south-east of Rome. People settled in the area because it had a mild climate and some of the most fertile land in the Italian Peninsula, thanks to the minerals in the volcanic ash deposits from previous eruptions. There was a rich agricultural industry based on olive oil, wine, fruit, vegetables, wool and textiles. Fishing was also an important industry.

Many rich Romans had built luxurious houses there to enjoy the climate and the spectacular views across the Gulf of Naples.

Mount Vesuvius

Mount Vesuvius was only 9 kilometres away from Pompeii and 7 kilometres from Herculaneum. In 79 CE, local people did not see the volcano as a threat because it had not been active within living memory. On 24 August that year, however, Mount Vesuvius unexpectedly erupted.

It was a massive eruption, lasting up to 24 hours and consisting of two phases. During the first phase, the volcano spewed huge clouds of ash and pumice (light volcanic rock) high into the sky. The wind blew these clouds towards Pompeii, depositing a layer about 2.5 metres thick across the town. The

MAJOR FAULT LINES ON THE ITALIAN PENINSULA



Source 1

Source: Oxford University Press

second phase involved avalanches of extremely hot ash, pumice and poisonous gases moving across the land at 100 kilometres per hour or more. These flows destroyed everything in their path. People suffocated and burned to death.

Pliny the Younger (c. 61–113 CE), a Roman writer, witnessed the eruption from the town of Misenum. He described the events in two letters to his friend Tacitus, a Roman historian (see Source 3).

By the end of the eruption, Pompeii was covered in up to 5 metres of ash and pumice, and Herculaneum was buried in 20 metres of volcanic deposits. After the eruption, Pompeii and Herculaneum were abandoned and never rebuilt.



Source 2 Part of the excavated city of Pompeii, with Mount Vesuvius in the background

Source 3

We [Pliny and his mother] had hardly sat down when darkness fell, not like the dark of a moonless night, but as if a lamp had been put out in a closed room. You could hear the shrieks of women, the wailing of babies and the shouts of men ... Some were so terrified that they prayed for death. Many prayed to the gods for help, but even more were of the view that there were no gods left, and that the universe

had been plunged into eternal darkness ... The flames continued for a while, some distance away. Then the darkness returned and the ashes began to fall again, this time in heavy showers. We stood up every now and then to shake the ash off or we would have been crushed under its weight.

Translated extract of a letter to Tacitus from Pliny the Younger

keyconcept: Evidence

The excavation of Pompeii

Today, Pompeii is a protected **World Heritage Site** and one of Italy's most popular tourist destinations. This is because its ruins, when found, showed the city more or less exactly as it was in 79 CE. The excavations have provided a wealth of evidence for historians about ancient Roman lifestyles.

The excavation of Pompeii started in 1860. The excavated ruins provide evidence that Pompeii had a **forum** (with temples and markets) and paved streets. It also had a stone **amphitheatre** for gladiatorial shows and two theatres for drama performances. There were four public baths, two of which also had public toilets. In addition to these buildings, there were many luxurious villas.

During his dig, the archaeologist Giuseppe Fiorelli found many strange cavities. He soon realised they had contained human and animal remains. Over time, the bodies had been reduced to dust and bits of bone. He poured a type of plaster into the cleaned-out cavities to reveal shapes such as those shown in Source 4.

For more information on the key concept of evidence, refer to page 167 of 'The history toolkit'.



Source 4 These plaster casts show Pompeians at the moment of their death.



Source 5 A paved street in Pompeii

Check your learning 10.3

Remember and understand

- 1 What physical feature caused the devastation of Pompeii in 79 CE? Explain in a few sentences what happened and how the geography of the region made such an event likely.
- 2 Who was Pliny the Younger? Why is he important in terms of our understanding of the eruption of Mount Vesuvius.

Apply and analyse

- 3 Read Source 3 carefully. What evidence does this source provide about the reaction of the people of Pompeii to the eruption?

10A rich task

The legend of Romulus and Remus

The Tiber River was very important to the ancient Romans, for both transport and trade. The Tiber was also the setting for the famous legend of Romulus and Remus, which many ancient Romans believed explained how Rome was founded, and why it had the right to rule over other civilisations.

According to legend, Rhea Siliva, the daughter of King Numitor, was married to Mars, the Roman god of war. Rhea had twin sons named Romulus and Remus. She loved them, but soon discovered that there were plots by other deities to harm her father and her sons. To protect the boys, she set them adrift in a basket on the Tiber, hoping someone would find and care for them. After a time, the boys were rescued from the river by a she-wolf who fed them with her own milk until a shepherd named Faustulus and his wife found them and raised them. Eventually they became shepherds like Faustulus.

One day, the boys discovered who they really were. They decided to build a city on the banks of the Tiber where they had been rescued by the she-wolf. Here they would rule as kings. They both wanted to be sole king of their city. They argued and, in a rage, Romulus picked up a rock and killed his brother. From this time on, Romulus ruled as king, naming the city Rome after himself.



Source 1 An artist's impression of a she-wolf nursing Romulus and Remus as they are discovered by Faustulus and his wife on the banks of the Tiber

skilldrill

Creating a historical storyboard

A storyboard is the director's plan for a film. Storyboarding is also an important skill for any historian who is interested in communicating historical events in pictures or graphical form especially when retelling events from the past in a film.

A storyboard looks a bit like a comic book, but it provides a lot of important details about the planned filming process. Each panel of a storyboard represents a scene in the film and should contain the following elements:

- scene number – ensure that a finished storyboard has scenes in numbered order. Panels may be drawn on cards that are shuffled around until you are satisfied with the order of scenes.
- description – a description of what or who the camera is focused on in the scene
- dialogue – details of any dialogue (if required) that takes place in the scene
- length – an indication of the number of seconds or minutes the scene should run for
- audio – sound effects that will enhance the viewing experience for the audience

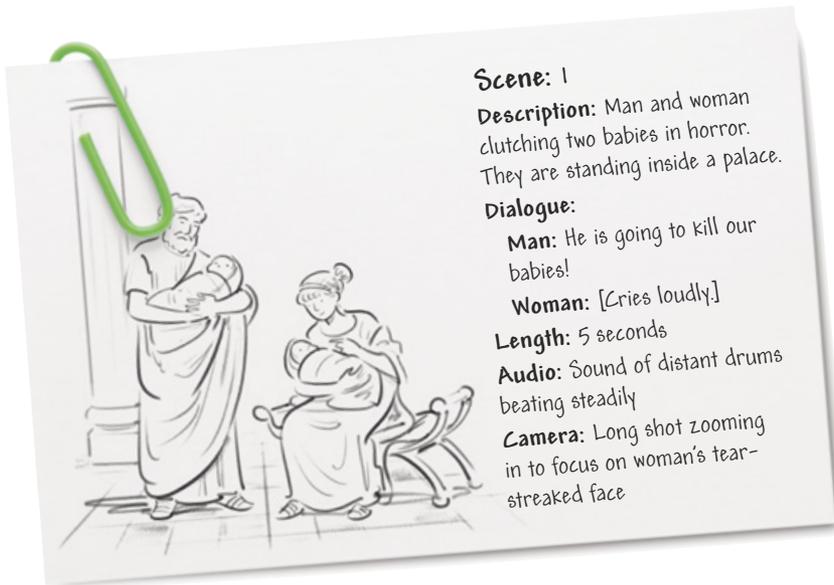
- camera – provide notes and instructions on how the camera operator is to film the scene. Source 2 contains a few tips on how to get the most out of a number of different camera techniques.
- sketch – sketch only basic figures and props. Storyboards are not meant to be works of art!

Source 2 Camera techniques

| Camera angle or movement | Effect produced |
|--|---|
| Close-up – focuses on an object or part of a person, such as the face | Gives importance to the object or expression |
| Long shot – shows entire characters or objects in their surroundings | Makes audience feel part of the scene |
| High-angle shot – looks down on subject or action | Reduces significance of subject or action |
| Low-angle shot – looks up at subject or action | Magnifies size or importance of subject or action |
| Pan – films a scene by moving camera horizontally | Shows the vastness or size of something |
| Fade out – scene dissolves into nothing | Provides a way to move to a new scene or to create an emotional effect (e.g. a death) |
| Dolly shot – camera tracks the action along wheeled tracks, or from a moving vehicle | Films action (e.g. a person running); increases tension and sense of action |

Apply the skill

- 1 Using the legend of Romulus and Remus, complete a storyboard of six panels for a short historical film. The first panel has been completed (Source 3) to show you what is required. Create each panel on a separate card.



Source 3 Panel 1 of a sample storyboard

Extend your understanding

- 1 There are many famous myths and legends about ancient civilisations such as Rome and Greece. Myths are ancient traditional stories about gods, heroes and magic. Legends are old stories about real people and events in the past, which may have been exaggerated over time.

Develop your own legend about how Rome might have been founded and why it had the right to rule. Use another one of the geographical features discussed in this section (for example, the Mediterranean Sea or Mount Vesuvius) as the setting for your legend.

Make sure your legend uses the following structure:

- an orientation – the main characters are introduced and the setting is described
- a complication – the main character faces some sort of problem or conflict
- a series of events – these occur while the character deals with the problem or conflict
- a resolution – the problem or conflict is resolved
- an ending – the outcome of the legend is summarised.

10.4 Key groups in Roman society

The social hierarchy of ancient Rome was guided by a complex set of rules and customs. There were clear distinctions between rulers and those they ruled; between free-born people and slaves; between the wealthy and the poor; and between men and women. Arguably, the biggest distinction was made between those who were citizens and those who were not.

Citizens

Only certain people in society could be citizens. Under Roman law, a boy was born a citizen if his father was a citizen and his parents were legally married. Roman citizens were divided into classes based on birth and property (that is, how much land they owned). This determined their role in society and, in turn, the type of lifestyle they could lead. Broadly, citizens were made up of two groups – **patricians** and **plebeians**.

Patricians

Patricians were usually people who could trace their line of descent back to the heads of those influential families that made up the original **Senate** of Rome. Patrician families were wealthy and typically owned huge estates. For a long time they held all the positions of political importance. Only they could interpret the laws. It was considered beneath them to be involved in commerce and trade.

Plebeians

Plebeians were the ordinary citizens of ancient Rome. They made up the bulk of the population and the army. They also included those who were involved in commerce and trade. They had some say in how they were ruled through their membership of the **Citizen's Assembly**.

However, this body was in reality dominated by patricians.

Wealthier plebeians were often responsible for government or administrative duties and finance. They were also commonly artisans and moderately rich landowners. The poorest of the plebeians owned no property at all.

Over time, the plebeians began to challenge the long-held authority of the patricians. Unrest grew. They made their first threat in 494 BCE when they refused Senate orders to attack an enemy force. Instead, they retreated to another hill near



Source 1 This statue of a patrician shows him wearing a toga and holding busts (stone heads) of his **ancestors**. Such busts were regarded with great respect.



Source 2 An artist's impression of the Roman Senate



Source 3 A wall painting showing a Roman carpenter at work

Rome. The patricians were very concerned because the plebeians greatly outnumbered them. They needed plebeian support and services to survive. And so began the first of many concessions made to the plebeians over the next 200 or so years. These included changes to the law.

The rulers of ancient Rome

During the years of the Roman Republic (509–27 BCE), ancient Romans were ruled by two elected **consuls** (comparable to prime ministers), who were advised by a Senate (see Source 2). New consuls were elected every year. One of the most famous and powerful consuls was Julius Caesar.

The transition of Rome from a republic to an empire did not happen on any particular date but is traditionally recognised as occurring in 27 BCE, when Julius Caesar's heir and successor Octavian (who later became known as Augustus) assumed total power. The Senate, which had been the supreme body during the



Source 4 An artist's impression of a consul following behind his guard of honour. His guards are 12 *lictors* (civil servants acting as bodyguards) who each carry the fasces – the symbol of the consul's power. The fasces was a bundle of rods encasing an axe, bound by a strip of leather. The fasces symbolised the consul's power to punish criminals by flogging (the rods) or beheading (the axe).

republic years, had lost much of its influence by then, and ruling power became increasingly concentrated in one person.

Historians often talk about the Roman Empire being ruled by 'emperors'. This is because it is the easiest way to refer to the role they had. However, the ancient Romans never used the word 'emperor'.

These rulers (hereafter called emperors) became so powerful because they took on – or were given by the Senate – so many rights, titles and official roles.

Many emperors ruled well and worked well with the Senate. Others were corrupt and brutally abused their power. Some, such as Augustus, were declared to be gods after their death. Others, such as Nero, declared themselves to be gods!

Check your learning 10.4

Remember and understand

- 1 Why were the patricians such a powerful social group?
- 2 Why would the patricians have feared the strike action of the plebeians in 494 BCE?
- 3 How did changes to the law and governing arrangements change the role of the plebeians over time?

10.5 Significant individual: Julius Caesar



Source 1 A bust of Julius Caesar

Julius Caesar was born into a patrician family in 100 BCE. He was a gifted Roman general and politician. Through various successful military campaigns he increased Rome's territories and power, especially in Western Europe. He played a critical role in the transformation of the Roman Republic into the Roman Empire. He was also responsible for social and governmental reforms.

The early years

Caesar's father, Gaius Julius Caesar, was a *quaestor* (a financial officer) and governor. His mother, Aurelia Cotta, came from a politically influential family. Very little is known about Caesar's childhood. As the son of a patrician, he would have received a good education and would have been expected to follow his father into a political career.

Caesar became the head of his family at 16, on his father's sudden death. Though still young, Caesar already knew that in order to succeed in Roman politics he needed to increase his personal wealth and know influential people. In 84 BCE, at the age of 18, he married Cornelia Cinilla, who came from a distinguished family. Unfortunately, Caesar and his family were considered to be enemies of Sulla, the dictator of Rome at the time. Caesar was forced to leave Rome to avoid being persecuted and killed. While in exile, he joined the army, and for the next few years distinguished himself as a capable and courageous soldier.

On Sulla's death in 78 BCE, Caesar returned to Rome to build his political career. He quickly gained popularity and powerful positions by using his excellent oratory (public speaking) skills, and also by bribing the right people. By 68 BCE, he was elected as a *quaestor*. About four years later, he was made a *praetor* (an official who ran the law courts) and governor of the province of Spain.

Caesar's rising popularity

On his return to Rome from Spain in 60 BCE, Caesar made a pact with two other leading political figures, Pompey and Crassus. They agreed to help get Caesar elected as a consul, one of two top governing positions in the Republic of Rome. They succeeded in 59 BCE, when Caesar was made a consul.

Consuls could only serve for one year. Once his consulship had ended, Caesar took up the position of governor of the Roman province of Gaul. This marked the beginning of his military career.

Caesar's military career

Caesar was considered a brilliant military commander who was popular with the people and his troops. As governor of Gaul (most of modern-day France), he fought the barbarian Celts. His victories in Gaul and elsewhere added large amounts of new territory to the Roman Republic.

THE REPUBLIC OF ROME AFTER CAESAR'S MILITARY CONQUESTS



Source 2

Source: Oxford University Press

Caesar's conflict with the Senate

The Senate in Rome was now led by Pompey. Pompey, however, no longer supported Caesar. He had begun to worry about Caesar's rising popularity and his military successes in Gaul. Caesar was also beginning to act without consulting the Senate! In 49 BCE, Caesar was ordered by the Senate to give up his command in Gaul, but he refused. Instead, he returned to Rome with his strong army to confront his enemies there. Pompey fled from Rome to what he thought would be refuge in Egypt, but Caesar and his men followed him there. Instead of being protected by the king of Egypt, Ptolemy III, Pompey was killed by him, and his head was presented to Caesar upon his arrival in Egypt. Ptolemy had hoped to gain Caesar's favour by presenting the head of Pompey to Caesar, but Caesar was disgusted by the murder instead.

Caesar and Cleopatra

King Ptolemy's older sister and co-ruler of Egypt, Queen Cleopatra, was more successful in winning Caesar's favour. They became romantically involved, and Caesar helped Cleopatra in her power struggle to gain the Egyptian throne for herself. Caesar and Cleopatra had a child, a boy named Caesarion, born in 47 BCE. The three of them returned that year to Rome to live. There, Caesar threw himself into reforms. He introduced a new currency and a new calendar (called the Julian calendar). He ordered that new Roman colonies be set up in Africa, Gaul and Greece, and started building what would become Rome's chief law courts – the Basilica Julia.

Caesar's death

In February 44 BCE, Caesar was appointed as 'dictator for life'. His success and ambition were too much for some republican senators. On 15 March in 44 BCE, a group of about 60 senators, which included some of his friends and former allies (such as Brutus), stabbed Caesar 23 times when he entered the Senate House – killing him. Caesar's death led to the outbreak of a civil war in Rome that lasted for about 15 years. His death marked the end of the Roman Republic.

Caesar's achievements

During his lifetime, Caesar held many important positions, including consul, tribune of the people,



Source 3 An artist's impression of the assassination of Caesar

high commander of the army and high priest. He made new laws, reorganised the army and improved the way the Roman provinces were governed. On the new Julian calendar, the month of July was named in his honour.

Although he had many political enemies, Caesar was popular with the ordinary people. He spoke publicly to them, promising to solve problems such as rising crime, high taxes and unemployment. Their support gave Caesar more power. In 42 BCE, he was officially deified (made a god) and a temple was dedicated to him in Rome.

Check your learning 10.5

Remember and understand

- 1 When was Julius Caesar born?
- 2 Why do you think historians regard Julius Caesar as a significant person in history?
- 3 Describe the roles of a *quaestor* and a *praetor*. You will need to use the glossary to do this.

Apply and analyse

- 4 Put yourself in the position of one of the senators who assassinated Julius Caesar. Try to understand his motives. Prepare and deliver a short oral presentation for the class, explaining why you participated in such a gruesome deed.

Evaluate and create

- 5 Based on what you have learnt about Caesar, would you say he was a strong leader? Justify your answer by:
 - a creating a list of characteristics that you believe all good leaders have
 - b deciding which of these characteristics Julius Caesar possessed.

10.6 Other key groups in Roman society

Non-citizens

In addition to the citizens of Rome, there were also large numbers of non-citizens. These people could not vote and had very few rights.

Foreigners

Free men born outside the city of Rome had some rights, but they were not considered full citizens until the law was changed in 212 CE to allow this. A man in one of Rome's colonies, for example, could not vote even though he held citizenship.

Slaves

Slaves in ancient Rome were not citizens and had no rights at all. However, if slaves were freed they were given a limited form of Roman citizenship and their sons could become citizens. Freed slaves were called freedmen, or *liberti*. Some *liberti* became wealthy and influential.

Most slaves were prisoners of war, though some were bought as 'goods'. A few were abandoned children or people who could not pay their debts. Slaves had no choice in what they did. The less fortunate might be forced to fight to the death as **gladiators**, or to work in Rome's mines or quarries. Punishments could be cruel.

As in most ancient societies, slaves provided a vital source of labour. Their efforts helped to increase the prosperity of Rome.



Source 1 These slaves are attending to their mistress's hair. Domestic female slaves in ancient Rome could be asked to attend to every need of their mistress.

Women in ancient Rome

Although women in Rome were technically considered citizens, they had few rights when compared to men. Much of what we know about the lives of Roman women was written by men. According to many of the available sources, the main role of women in Roman society, especially those of the higher classes, was to raise children and run the household. In general, there are very few sources about the lives of poor women. We do know that the *paterfamilias*, a Latin term meaning 'father of the family' that refers to the oldest male in the household, had all the power.

A household in ancient Rome typically included parents, married and unmarried children, and slaves. The *paterfamilias* decided whom his daughters married and whether any newborn children in the house lived or died. Women had to obey their husbands in nearly every aspect of their lives. Any property or money they brought to the marriage automatically belonged to their husbands.

The Punic Wars did much to change the lives of many women in Rome. With the men away fighting, many had to manage on their own (with their slaves). After these wars, the widows of soldiers often received large sums of money – similar to a war pension today. This further boosted their self-reliance.

Around the 2nd century BCE, conditions of marriage for women in ancient Rome changed, giving women more financial advantages and social freedom. With their husbands, many women attended dinner parties, gladiator fights, chariot races and religious festivals, and regularly went to the public baths. Not all men were happy about this.

Source 2

If you give women equal freedom with men, do you think this will make them easier to live with? Far from it! If women have equality, they will become men's masters.

Translated extract from the writing of Livy, a Roman historian (59 BCE to 17 CE)

Source 3 The status of women in ancient Rome

| Restrictions on women | Opportunities for women |
|---|--|
| Could not vote or own property | Had greater personal freedoms than the women of other ancient civilisations, such as ancient Greece |
| Had no legal control over their children | Were taught how to read and write |
| Had to be escorted by a male guardian in public | Could become highly respected figures (e.g. Cornelia Gracchus – see Key concept: significance) |
| Most had a less formal education than boys (e.g. spinning and weaving rather than maths, history and philosophy). | Some were able to work or run their own businesses, or helped their husbands with their business, unlike Athenian women who were largely shut away in their homes. |
| Had no active role in civic or political life | Could play an active role in preparing sons for civic life |



Source 5 A painting of Roman magistrate Terentius Nero and his wife from Pompeii (1st century CE)

Many upper-class women soon achieved a new prosperity and social standing. This encouraged many to further challenge the rules about women’s behaviour. This development worried Rome’s ruler Augustus (63 BCE to 14 CE). He believed Rome would be strong only if its people were moral. As part of his reforms, he introduced strict laws to restrict women’s behaviour. For example, women were banned from attending public spectacles. There were also harsh penalties for adultery (sexual relationships outside of marriage). The laws he created saw even Augustus’ own daughter, Julie, exiled.

keyconcept: Significance

Cornelia Gracchus

Cornelia Gracchus (190–100 BCE) was a remarkable trailblazer for women’s independence in her time. She was the daughter of the Roman general Scipio. She and her husband, Tiberius Gracchus Major, had 12 children, only three of whom (two boys and a girl) survived.

When her husband died, Cornelia refused to remarry. Instead she took total control of her husband’s estate and her sons’ education. Later in life, she studied Latin and Greek language and literature, learning from Greek scholars she brought to Rome. She even set up a club where important literary and political figures could gather to share ideas. Cornelia also supported and advised her sons in their political careers.

She is significant because she was a woman ahead of her time. She was well regarded as a virtuous, ideal mother figure by ancient Romans. Yet she was also strong-minded and independent.

For more information on the key concept of significance, refer to page 169 of ‘The history toolkit’.



Check your learning 10.6

Remember and understand

- 1 How did the *paterfamilias* influence the role of women in ancient Rome?
- 2 What evidence does Source 3 provide of the limits placed on women in ancient Rome?
- 3 How did the Punic Wars help to change the role of women in ancient Rome?

Apply and analyse

- 4 The magistrate and his wife shown in Source 5 both hold writing materials. What do you conclude from this evidence?

Evaluate and create

- 5 Write a short letter that a modern women’s rights supporter might send to Cornelia Gracchus (if that were possible) explaining why she is regarded today as such a ‘trailblazer’.
- 6 Frame two questions that would guide your research in finding out more about Cornelia Gracchus.

Source 4 A sculpture of Cornelia Gracchus and her two sons

10B rich task

Four Roman emperors

The emperors of ancient Rome possessed great power and wealth. Some were great leaders and brave soldiers, while others were corrupt and abused their power. Four of the most famous emperors of Rome are profiled here. Some were celebrated for their achievements; others despised for their wickedness.

Augustus

I am Augustus, Rome's first emperor (though I never called myself that). After my great-uncle Julius Caesar was assassinated in 44 BCE, I changed my birth name to Gaius Julius Caesar Octavianus. Julius Caesar was like a father to me and I was very upset that he was killed. My rule began in 27 BCE when I was 36 years old. The Senate renamed me Augustus, meaning 'exalted one'. As Rome's leader, I made it a better place to live. For a while, there was peace (after many years of civil war). I increased its territory to include countries you now know as France, Egypt and Spain. I built many roads, bridges and aqueducts, and encouraged trade (including with the country you would know as India). Art and literature flourished under my rule. After my death in 14 CE, the people worshipped me as a god.



Source 1 Augustus

Caligula

I am Caligula – Gaius Julius Caesar Augustus Germanicus to be precise. I was Rome's third emperor, ruling from 37 CE until my death in 41 CE. Historians say I started well. I abolished sales tax, worked well with the Senate and put on lots of games at the Colosseum. I even fought a whale once during sea games there. In 37 CE I became very ill with what my doctors described as a 'brain fever'. Some historians think that's when I went mad. I suppose I did try to get my horse elected as consul. I loved money and riches, so much so that my extravagance caused a financial crisis in 39 CE. I had to introduce a lot of new taxes to raise more money and even made it law for wealthy men to leave their fortunes to me in their wills. In 40 CE I announced myself as a god and ordered several temples and statues in my honour. I was 29 when the Praetorian Guards murdered me, even though I paid them to protect me!



Source 2 Caligula

Nero

I am Nero. I became emperor in 54 CE when I was only 17. The first few years of my rule went smoothly. I was very interested in the arts, but I was also an excellent chariot racer, so good that I found it necessary to kill those I thought might be better than me. I had my mother killed when I was 21, but I made it look like a suicide. Then there were the military campaigns in Britain (60 CE) and Judea, modern-day Israel (66–70 CE). I'm probably remembered most for the fire in Rome that broke out in 64 CE. It almost destroyed the entire city. Some people said I started it, but I blamed the Christians – they made an excellent scapegoat. I ordered some of them be fed to the lions and had others painted with tar before setting them alight. I built a new palace for myself on Rome's burned ruins. In 65 CE, the Senate plotted to remove me from power, but did not succeed. A number of army revolts in 68 CE were the final straw. I lost the throne. I was so humiliated that I took my own life that year.



Source 3 Nero

Marcus Aurelius

I am Marcus Aurelius. I was 40 years old when I became emperor of Rome, ruling from 161 CE until my death in 180 CE. Historians say I ruled well – the last of five good rulers they say. I increased the size of the army and introduced many social reforms, such as giving more rights to women and slaves. I was a thinker and philosopher but, like other emperors before me, I persecuted Christians because their beliefs were undermining ours. In 162 CE, the second year of my reign, the Tiber broke its banks and destroyed much of Rome, causing a famine in the city. From 161 until 166 CE, I fought the Parthians with my co-emperor and stepbrother Lucius Verus. Unfortunately, his troops brought the plague back to Rome from Parthia (a region close to what you know as the Middle East). It spread through the empire from 165 CE until 180 CE, killing thousands of people. My son Commodus ruled after me, although he had already been appointed as co-emperor in 177 CE.



Source 4 Marcus Aurelius

skilldrill

Plotting events on a timeline

Timelines are a very important tool for historians. They allow the reader to quickly identify what happened when, and how much time went by between events.

Follow these steps when creating a timeline:

- Step 1** Determine the type of timeline required, i.e. horizontal or vertical.
- Step 2** Establish the total time span you need to cover with your timeline. Consider:
 - the starting date of the timeline
 - the end date of the timeline.
- Step 3** Enter the most significant dates on the timeline and provide key facts and information about the events that took place on each date. Be sure your written text is clear and concise.
- Step 4** Make sure each event date is entered chronologically (in order) from left to right (for horizontal timelines) or bottom to top (for vertical timelines).

For a detailed description of this skill, refer to page 177 of 'The history toolkit'.

Apply the skill

- 1 Following the steps provided, create a timeline for two of the Roman emperors discussed, including:
 - the date they were born
 - the date they died
 - key events in their lives or reign.
 Plot as many dates as you can identify from the information provided.

Extend your understanding

- 1 Create two Venn diagrams in your notebook to compare and contrast the profiles of:
 - a the emperors Augustus and Marcus Aurelius
 - b the emperors Nero and Caligula.
 To create a Venn diagram, features that are specific to one thing you are looking at should be recorded in the left circle. Features that are specific to the other thing you are looking at should be recorded in the right circle. Features that they have in common should be recorded in the overlapping area of the circles. (See 9A rich task for more information on creating Venn diagrams.)
- 2 What do you conclude about these four rulers? Write a paragraph to explain your findings.

10.7 Religious beliefs and practices

The values, customs and beliefs of ancient Romans were often a mix of those they had inherited from their ancestors and those adopted from societies they conquered. Together, these beliefs, values and practices had an impact on how the people of ancient Rome lived.

Beliefs and values in ancient Rome

The rulers of ancient Rome did not believe in one god, as Jews, Christians and Muslims do; instead, they believed in many. Most of their deities (gods) were adapted from ancient Greek gods and goddesses (see Source 2). It is believed that the Romans adopted many of the Greek deities because they much admired Greek traditions and culture. They also included deities of other conquered peoples, such as the Persian god Mithras and the Egyptian goddess Isis.

Roman deities were worshipped in temples and in the home. Sacrifices and offerings were made and festivals were held in their honour. Rituals and ceremonies were the most important part of Roman religious practice. For example, certain parts of sacrificed animals were burned as an offering to the gods. The Romans believed such practices would keep the gods happy.

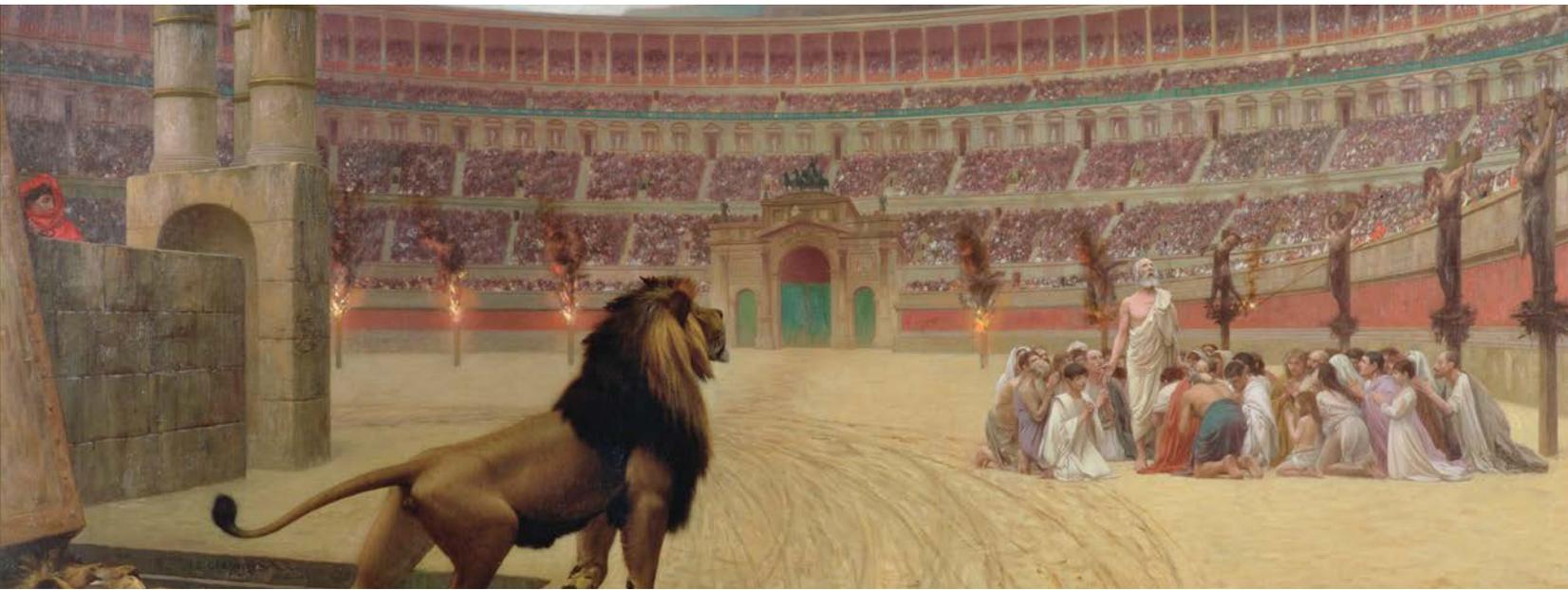
The fact that Romans had traditionally worshipped many gods was the main reason why Roman rulers such as Nero feared Christianity with its worship of one God. This fear motivated Roman leaders to try to stamp out Christianity. For about 300 years, Romans who converted to Christianity were often tortured or killed. They might be crucified, burnt alive or fed to the lions, often in front of cheering crowds in the Colosseum (see Source 3).



Source 1 This Roman mosaic entitled *Triumph of Neptune* shows the god of the sea as the central image

Source 2 Some Roman deities and their Greek equivalents

| Ancient Roman deity | Role | Ancient Greek deity |
|---------------------|---------------------------------|---------------------|
| Jupiter | king of the gods | Zeus |
| Juno | goddess of women and childbirth | Hera |
| Neptune | god of the sea | Poseidon |
| Mars | god of war | Ares |
| Venus | goddess of love and beauty | Aphrodite |
| Bacchus | god of wine and pleasure | Dionysus |
| Vesta | goddess of the hearth | Hestia |



Source 3 An artist's impression of Christians being burned at the stake and fed to lions in ancient Rome

Despite the efforts of many Roman emperors, Christianity continued to spread. By 380 CE, Emperor Theodosius had made it Rome's official religion. Today, the traditions of Rome's early Christian church have gone on to influence the beliefs and practices of many people in the modern world. The Vatican (the seat of the Roman Catholic Church) and the Pope are located in Rome to this day.

Values

The ancient Romans lived by an unwritten (but very important) code of values that influenced their behaviours and attitudes in all aspects of their daily life (see Source 4). Every Roman was expected to practise these values at all levels of society – private, political and military.

Key values in ancient Rome

- *Industria* – willingness to work hard; diligence
- *Dignitas* – a sense of personal pride and self-worth
- *Virtus* – courage, honour, toughness, desire to excel
- *Fides* – honesty, trustworthiness, dependability
- *Gravitas* – self-control, dignity, seriousness, responsibility
- *Pietas* – respect, dutifulness, good living, devotion to worship and others

Source 4 These key values of ancient Rome formed an unwritten code on which Romans based their behaviours and attitudes.

Check your learning 10.7

Remember and understand

- 1 Which Roman deities were equivalent to the Greek deities Poseidon, Dionysus, Hestia and Zeus?
- 2 Explain how the ancient Romans initially treated Christians. What did this have to do with Christian beliefs?
- 3 How did the ancient Romans attempt to keep the gods happy?

Evaluate and create

- 4 Conduct some Internet research into the spread of Christianity in ancient Rome. Write a brief report, ensuring you include information that answers the following questions:
 - a Who was Saint Paul, and what was his role in spreading the message of Christianity?
 - b Which emperor eventually made Christianity legal, and in what year?
 - c Which emperor later declared Christianity the state religion, and the worship of all other deities illegal?

10.8 Everyday life

Options

How beliefs, values and practices influenced the lifestyle of the ancient Romans is discussed in respect to the three topic areas listed below:

- everyday life
- warfare
- death and funeral customs.

Choose only ONE of these topic areas to study.

Everyday life in ancient Rome varied widely according to people's position in society – whether they were citizens or not, free-born people or slaves, wealthy or poor, and whether they were male or female.

Roman families

The society of ancient Rome was organised around the family (and extended family). As mentioned, it was headed and controlled by the *paterfamilias* (the oldest male, or 'father', of the family). Ancient Romans had great respect for the father figure. The emperor and senators of Rome were seen as 'fathers' of the people. The dominant role of men in Roman society was shaped by the religious belief that women, children and slaves did not have souls. They were therefore dependent on free-born men for their social status and protection.

Women in ancient Rome were expected to be good wives and mothers. They had no active role in public or political life.

Roman housing

Wealthy Romans lived very differently from the poor, who usually lived very hard lives. In urban areas, the poor crammed into dark, tiny rooms in multi-storey apartment buildings called *insulae*. These rooms were often smelly and badly maintained. Water had to be carried in pots from wells that might be some distance away. People had to walk to a public toilet where, instead of toilet paper, they shared a communal sponge that was washed out after each use (see Source 2).

In contrast, the wealthy lived very privileged lives. Many wealthy families maintained homes in Rome as well as spacious country estates known as villas. The homes of the wealthy featured many modern conveniences such as running water and toilets. They often had many rooms, private baths and courtyards, and were decorated with beautiful artworks, mosaics and marble statues. They were surrounded by gardens and pools.

keyconcept: Continuity and change

Weddings

Weddings in ancient Rome played a central role in the lives of many families – in much the same way they do today. The type of ceremony often depended on people's social status. Many of the traditions that we follow today date back as far as ancient Rome. Roman brides married in white, wore veils and carried flowers. A marriage contract was also drawn up and sealed with a kiss.

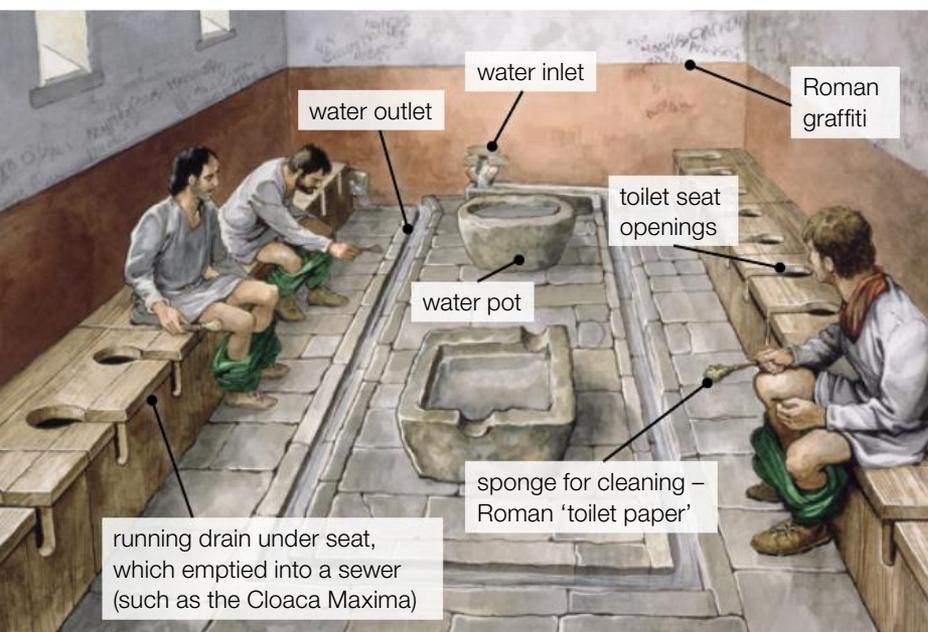
Many other Roman wedding traditions have changed. Generally, girls in ancient Rome were married

at around 14 years, sometimes younger. Marriages were arranged by the father of the bride, or the *paterfamilias*. The bride had no say in the matter. Fathers handed control of their daughters to their husbands on marriage. Echoes of this continue today – when the priest or minister asks, 'Who gives this woman away?', the father of the bride answers, 'I do'.

For more information on the key concept of continuity and change, refer to page 165 of 'The history toolkit'.



Source 1 A stone carving of a wedding ceremony in ancient Rome. The groom holds the marriage contract.



Source 2 An artist's impression of a public latrine (toilet) in ancient Rome

Education

Education was a privilege of the wealthy, and then usually only for boys. Girls did learn to read and write, but most of their training related to domestic skills such as spinning cloth and weaving. Teachers in the home were often educated slaves (and frequently Greek). Subjects studied typically included music, history, geography, astronomy, mathematics, reading, writing, along with Greek and Latin. They were also taught the Roman values (see Source 4 on page 311) that would guide their behaviour and attitude throughout their life.

Boys generally completed their schooling around the age of 16. Their 'graduation' was celebrated by putting on a new toga and going out to register on the **census** (an official count of the population) as a full Roman citizen. The occasion was a family celebration.

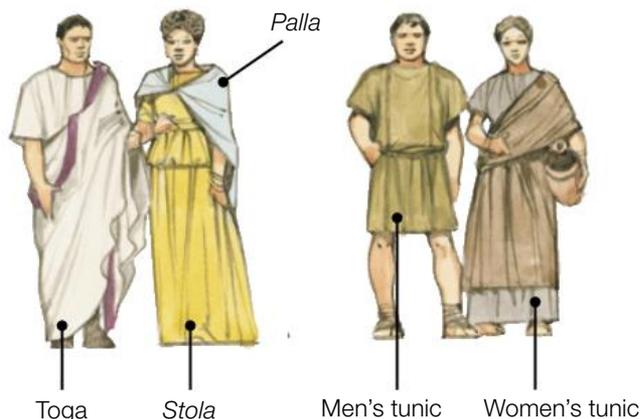
Fashion and grooming

The men and women of ancient Rome wore tunics (simple garments of various lengths both with and without sleeves). Tunics were made from linen or wool and could be a number of different colours. Women's tunics were ankle length; men's were shorter. Only male citizens could wear a **toga** over this. Togas consisted of around six metres of cloth that was wrapped around the body over a tunic. Togas were only worn in public.

Wealthy women wore *stola* (a garment similar to a toga) over their tunics. When in public they also wore a *palla* (cloak) and often covered their heads with a veil or part of the *palla* to mark their lower social status.

Slaves wore only tunics.

Wealthy women spent time caring for their hair and skin. Complexions were lightened with chalk and lips coloured with mulberry juice or the sediment from red wine. Wigs, made from the hair of slaves, were often worn by men and women. Blond and red were popular hair colours. The clean-shaven 'short back and sides' look for men became the fashion after the 2nd century BCE.



Source 3 Clothing of Roman men and women

Check your learning 10.8

Remember and understand

- 1 Name three wedding traditions today that are examples of continuity from those in ancient Rome.
- 2 Explain the differences between togas and *stolas*.

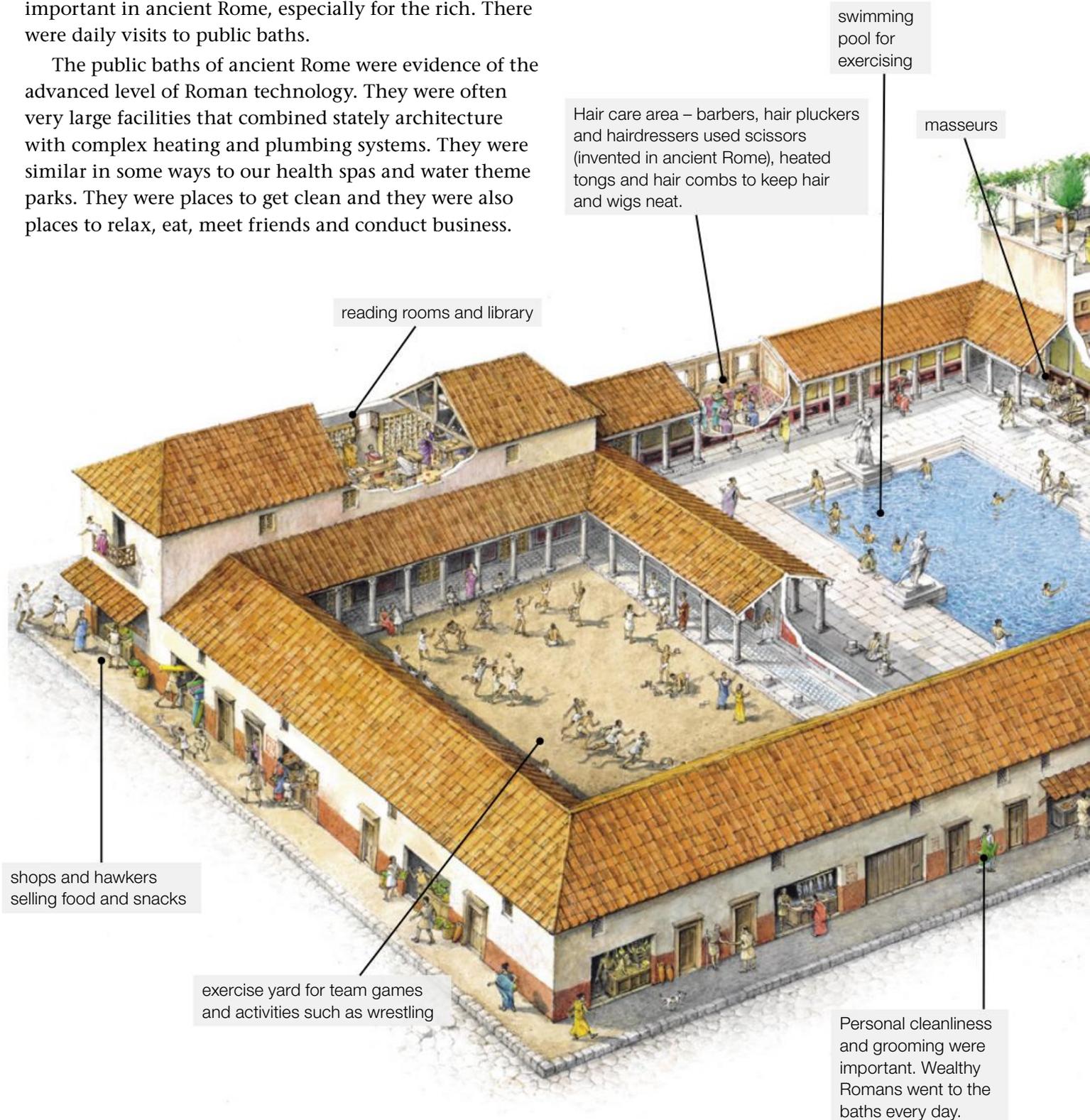
Apply and analyse

- 3 Study Source 2. What has changed in public toilet design since the days of ancient Rome? What has stayed the same?

10.9 Roman baths

Personal cleanliness, hygiene and grooming were very important in ancient Rome, especially for the rich. There were daily visits to public baths.

The public baths of ancient Rome were evidence of the advanced level of Roman technology. They were often very large facilities that combined stately architecture with complex heating and plumbing systems. They were similar in some ways to our health spas and water theme parks. They were places to get clean and they were also places to relax, eat, meet friends and conduct business.



Source 1 An artist's impression of a Roman public bath

Check your learning 10.9

Remember and understand

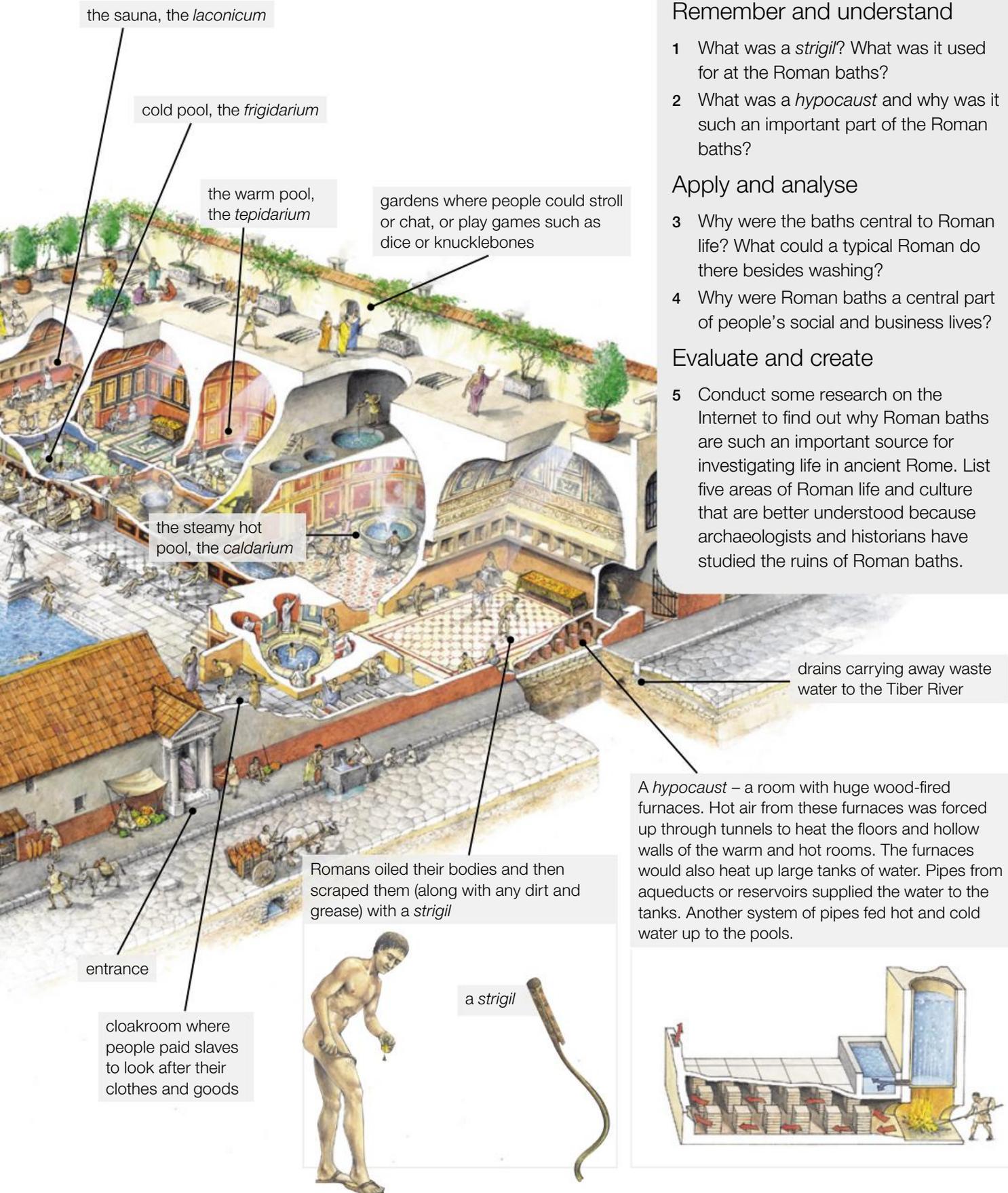
- 1 What was a *strigil*? What was it used for at the Roman baths?
- 2 What was a *hypocaust* and why was it such an important part of the Roman baths?

Apply and analyse

- 3 Why were the baths central to Roman life? What could a typical Roman do there besides washing?
- 4 Why were Roman baths a central part of people's social and business lives?

Evaluate and create

- 5 Conduct some research on the Internet to find out why Roman baths are such an important source for investigating life in ancient Rome. List five areas of Roman life and culture that are better understood because archaeologists and historians have studied the ruins of Roman baths.



10.10 Public entertainment

Most ordinary Romans lived hard lives. At times, it was a source of envy and irritation for the poor to see how the rich lived and the privileges they enjoyed. To combat this, and keep the peace, Roman rulers organised free entertainment for the common people. This ensured that they did not become restless and rebellious.

By the end of the 1st century BCE, entertainment was provided for the people on 159 days of each year in Rome. A day out at the **Circus Maximus**, which could seat close to a quarter of a million people, meant watching horse-drawn chariots thunder around the track. Death and terrible injuries were common, but this was seen as part of the fun.

Fronto, an ancient Roman writer, said the people were kept happy and peaceful by two things – grain supply and shows. Another Roman writer, Juvenal, later expressed this as ‘bread and circuses’.

Gladiator games

Perhaps one of the most popular forms of ancient Roman entertainment were the gladiator games. The massive Colosseum, in the heart of ancient Rome, was the place to go for gladiator fights (see Source 1). Romans flocked here to watch gladiators fight and kill animals or each other. Gladiators were forced to fight to the death.

Most gladiators were unwilling participants. They were slaves, criminals or prisoners captured from around the empire. Popular gladiators who won many fights became famous in Rome and were treated in a similar way to sporting stars today. They were often granted their freedom after a time and became trainers of other gladiators.

Types of gladiators

In order to make fights interesting for the Roman audiences, there were several different types of gladiators. Most fought on foot. Others, such as the *equite*, fought on horseback. Some were heavily armoured, while others fought almost naked. Some gladiators were female. Often, female gladiators fought before the men. There were even ‘clown’ gladiators, known as the *andabatae*. Their helmets had no eye holes. They would be pushed towards each other, hacking wildly with their weapons, for the enjoyment of the crowd. Source 2 shows four of the most common types of gladiators.

keyconcept: Contestability

Origins of the gladiator games

Some historians believe that the origins of gladiator fights in Rome date back to an Etruscan practice of holding fights to the death at the funerals of great rulers and kings.

Other historians contest this claim as there is little evidence to support it. Other scholars claim that the games began in 264 BCE when two brothers arranged for six slaves to fight to the death. This was done as a religious ritual to honour their dead father, Junius Brutus.

Regardless of how they began, the tradition of entertaining people with free gladiator fights was well established by the time Rome became an empire.

For more information on the key concept of contestability, refer to page 170 of ‘The history toolkit’.



Source 1 The remains of the Colosseum. Gladiators, soldiers and animals were housed in the rooms and corridors under the arena until it was time to perform for the crowds.

A *retiarius* was armed with a short dagger, a trident and a weighted net. The mesh was used to entangle the opponent's weapons, hands or feet. He had no armour but an arm guard. If he won the fight, he would kill his opponent with the dagger or trident.



A *secutor* carried a short sword or dagger and a shield. His right arm and left leg were covered. His helmet had small eye holes, a rounded top and protective lips at the neck. A *secutor* had to kill quickly before he tired from the lack of oxygen inside the helmet.

The *murmillo* was usually pitted against the *thraex*. His broad-brimmed helmet was fish-shaped. His left lower leg was protected by padding and a metal greave, and his right arm by armour. He carried a short, straight sword and a large curved shield.



A *thraex* carried a short, curved sword and a small shield. His lower legs were protected by greaves and his thighs with padding. The head of an eagle topped his brimmed helmet. The helmet's grille protected his face and eyes, and a deep collar protected his neck.

Source 2 An artist's impression of typical gladiator duels. Pairs were typically matched to make the fight fair. One gladiator's advantage was the other's disadvantage.

Check your learning 10.10

Remember and understand

- 1 Why did Roman rulers provide free entertainment for the common people?
- 2 For how many days per year was entertainment provided in Rome?

Apply and analyse

- 3 Historians disagree about when and where the tradition of gladiator fighting began.
 - a Why is this?
 - b What theories do different historians have?
 - c What theory do you believe is most reliable? Why?

- 4 Explain the meaning of the phrase 'bread and circuses'.

Evaluate and create

- 5 Conduct some research into the different types of gladiators that fought for the entertainment of Roman crowds. Consider the different weapons and armour each gladiator had.
 - a If you were forced to fight in the Colosseum in Rome, which of these gladiators would you choose to be?
 - b Compare your choice with other students in your class. Which was the most popular choice? Why?

10.11 The Colosseum

The Colosseum building was started in 72 CE and completed in 80 CE. It could hold up to 80 000 people, and its external dimensions are longer and wider than Australia's largest stadium, the Melbourne Cricket Ground.

Gladiators often entered through gates at the arena level.

A high wall was built around the arena to stop gladiators or animals from escaping.

Spectators entered through tunnels and climbed steps, much as spectators do at major sports events today.

Sometimes sand on the floor of the arena was coloured to make the spilt blood less obvious; vats of perfumed incense were often placed around the arena to cover the smell.

There were 80 entrances to the Colosseum – four of these were unmarked and were used by the emperor, wealthy patricians, senators and visiting dignitaries; the other 76 were public entrances.

Animals were kept caged under the Colosseum. They were hoisted up to ground level in cages on pulleys and entered the main arena via a number of ramps and trapdoors. Hunters trapped and transported wild animals from all over the empire for the shows. Animals slaughtered during the games included tigers, lions, elephants, bears, hippopotamuses, giraffes, ostriches, wolves and crocodiles.

Source 1 An artist's impression of games being held at the Colosseum

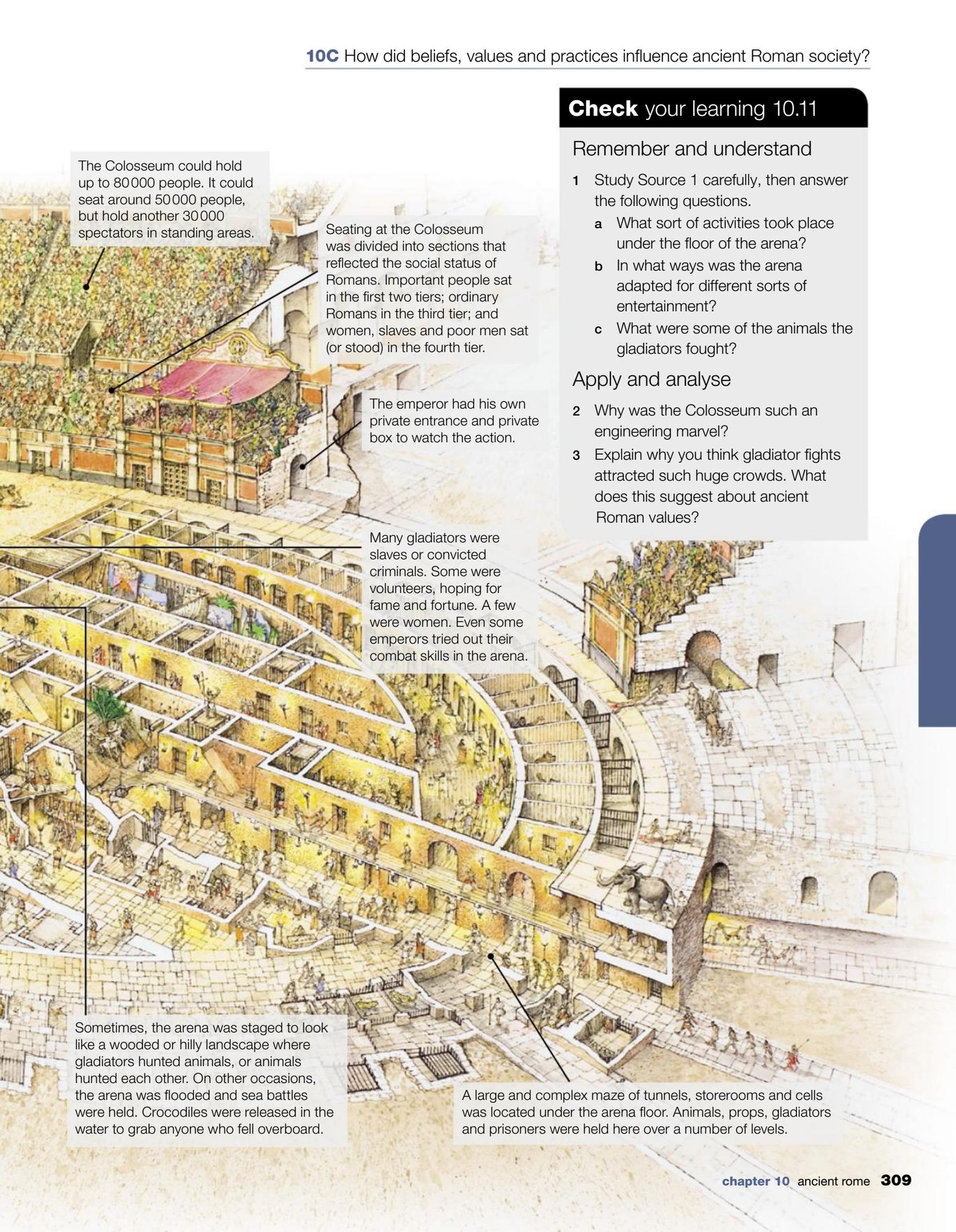
Check your learning 10.11

Remember and understand

- 1 Study Source 1 carefully, then answer the following questions.
 - a What sort of activities took place under the floor of the arena?
 - b In what ways was the arena adapted for different sorts of entertainment?
 - c What were some of the animals the gladiators fought?

Apply and analyse

- 2 Why was the Colosseum such an engineering marvel?
- 3 Explain why you think gladiator fights attracted such huge crowds. What does this suggest about ancient Roman values?



The Colosseum could hold up to 80 000 people. It could seat around 50 000 people, but hold another 30 000 spectators in standing areas.

Seating at the Colosseum was divided into sections that reflected the social status of Romans. Important people sat in the first two tiers; ordinary Romans in the third tier; and women, slaves and poor men sat (or stood) in the fourth tier.

The emperor had his own private entrance and private box to watch the action.

Many gladiators were slaves or convicted criminals. Some were volunteers, hoping for fame and fortune. A few were women. Even some emperors tried out their combat skills in the arena.

Sometimes, the arena was staged to look like a wooded or hilly landscape where gladiators hunted animals, or animals hunted each other. On other occasions, the arena was flooded and sea battles were held. Crocodiles were released in the water to grab anyone who fell overboard.

A large and complex maze of tunnels, storerooms and cells was located under the arena floor. Animals, props, gladiators and prisoners were held here over a number of levels.

10.12 Warfare

Military service was a part of life for Roman citizens. It was needed at first to help to increase Rome's territory and then to defend it. In fact, for a time the most important Roman god was Mars – the god of war.

Through intense and disciplined training, Rome's army became very strong. Later, the breakdown in order and self-discipline in the army was one of the reasons Rome's Western Empire eventually crumbled.

Early days

In the early days of the republic, men had to be landowners before they were allowed to enter the army. Some were wealthy enough to own horses and buy armour and weapons. These men formed the cavalry. By 260 BCE, the army gained control of the country that we now know as Italy. As its territory grew, Rome needed a larger and more permanent army. Around 10 BCE, a Roman consul, Marius, declared that men no longer had to own land to join the army. Consequently, thousands of men (including the very poor) joined up.

Army organisation

The Roman army was a very hierarchical and disciplined organisation. Roman soldiers were known as legionaries. The army itself was made up of around 30 **legions**. Each legion had between 4000 and 6000 soldiers led by a *legatus* (general). Each legion was made up of 10 groups known as cohorts. Each cohort was then broken down into six smaller groups of 80 to 100 troops. These groups were known as centuries. Each century was led by a soldier known as a centurion.

At first, only Roman citizens could be legionaries, the best soldiers and the best paid. Later, soldiers who were not Roman citizens were also allowed to join. These soldiers were known as **auxiliaries**. Auxiliaries often had special skills such as archery, and were expected to fight on the front line where it was most dangerous.



Source 1 A Roman legionary (soldier) in uniform



Source 2 The *testudo* (from the Latin word for 'tortoise shell') provided Roman soldiers with protection against enemy attacks. Their shields were sometimes held above their heads when approaching the walls of an enemy fort.

Roman soldiers in the 2nd century BCE were organised for battle according to age. At the front were the young men, the spearmen. Behind them were the *principes*; these were soldiers in the prime of their lives. At the rear were the older soldiers.

A typical Roman foot soldier would be dressed in a red woollen tunic over which would be worn body armour. The armour for the torso was made up of overlapping iron plates. They also wore a helmet, a scarf to protect against chafing from their helmet and armour, a belt with studded leather strips for groin protection, and leather sandals. Their weapons generally consisted of a dagger, a sword, a javelin (spear) and a large shield (see Source 2).

Standards and standard-bearers

Each legion of the Roman army carried a standard into battle. A standard was a silver eagle called an *aquila* mounted on a pole that identified each legion. It was a symbol of their strength and therefore a matter of great shame if the standard was lost or captured. This could destroy the morale and discipline of a legion on the battlefield.

There were a number of **standard-bearers** in Rome's army who were chosen for their leadership qualities. They were known as *aquilifer*, because they carried the *aquila* (see Source 3).



Source 3 A modern artist's impression of an *aquilifer*, or standard-bearer, leading his men into battle



Source 4 A modern re-enactment of Roman soldiers loading a ballista, a type of catapult

Siege warfare

Roman soldiers were very disciplined and many Roman generals were highly skilled military strategists. One military strategy that gave the Roman army an advantage over its enemies was siege warfare tactics. Siege warfare involved surrounding an enemy city and starving those inside into submission. It often involved slaughtering the enemy after they surrendered. A common approach was to build two parallel walls around the city. The inner wall was a barrier to stop food being brought into the city. The outer wall provided protection for the Roman troops in case warriors or supporters of those inside the city tried to attack.

Equipment such as catapults and battering rams was used during sieges. Catapults launched large stones, and even rotting carcasses of animals, over city walls in order to spread disease and force a surrender. Battering rams were long heavy logs with ram-shaped heads carved into the end – useful for breaking down the wooden gate of enemy forts and city walls.

Another strategy was to dig tunnels under a weak section of a wall to undermine it. The tunnel was propped up with wooden supports that were then set on fire. When the supports collapsed, so did the tunnel and the wall above it.

Check your learning 10.12

Remember and understand

- 1 Which god was, for a time, the most important god of Rome? What does this suggest?
- 2 How did the decision of the consul Marius in 10 BCE change the make-up of the Roman army?
- 3 a Who were the *principes*?
b Why might they have fought where they did when in battle formation?
- 4 Why were auxiliaries sometimes called on to fight with the Roman army?

Apply and analyse

- 5 List some of the things that might have motivated those who were part of the Roman army.
- 6 Sometimes battering rams were pushed on wheeled devices. These devices were often covered with a long 'roof' layered with wet hides from freshly killed animals. What purpose do you think such a roof served?

Evaluate and create

- 7 Find out what a maniple was and how it worked as a strategy on the battlefield. Draw a sketch to illustrate your findings.
- 8 How were the standards of Rome's army like the flags carried by modern armies?

10.13 Death and funeral customs

Many Romans had no set beliefs about what happened after they died. At least this was the case until Christian beliefs began to dominate in the 4th century CE under Emperor Constantine. The beliefs and customs of the civilisations Rome conquered influenced some Romans in the way they dealt with death. These included the cults of Egypt's goddess Isis and Persia's god Mithras. Ancient Romans also had great respect for their ancestors. Often they kept wax death masks (or stone busts) of them in their homes, which they might display on special occasions (see Source 1 on page 292).

The influence of beliefs and traditions

A key influence on Roman beliefs about death was Greek mythology. Like the Greeks, many Romans believed that their souls were transported into the afterlife once they died. The souls of the dead went to the Underworld, known as Hades. There were several sections in Hades. For example, wicked souls ended up in Tartarus – a place of everlasting torment and misery. The souls of the brave went to the Elysian Fields – a peaceful and happy place. Dead souls reached Hades by paying the ferryman, Charon, to row them across the River Styx.

Despite having no fixed beliefs about life after death, the ancient Romans were generally uneasy about death. Many believed the spirits (or souls) of the dead roamed the Earth, haunting them, if certain rituals were not carried out. Hence, the people showed a great deal of respect towards those who had died.



Source 1 An artist's impression of the ferryman, Charon, rowing the soul of a dead Roman over the River Styx to Hades

Dealing with the dead

The ancient Romans regarded dead bodies as pollution, and those who tended to them as 'polluted'. Polluted people could not perform certain civic and religious duties until they had carried out purification rituals. This meant that funeral workers and executioners were constantly 'unclean'. As a result, they became social outcasts and had to live outside their cities and towns.

Cremation

Cremation (the burning of corpses) was the preferred method for disposing of dead bodies up until the end of the 1st century CE, when burial became more common.

Often, a person's belongings were burned with their body. The ashes and remains of bone were then placed in an urn, which was buried or placed in a tomb. Sometimes many people were cremated at once.

Graves

Those who could not afford a burial plot or tomb were usually buried in a mass grave on the Esquiline Hill outside Rome. Typically, the corpses of the poor were carried there at night, often by slaves. Each corpse might be wrapped in cloth or covered with a sack. They were not placed in coffins. When the grave started to fill up with corpses, it was filled in with dirt. Mass graves were also used for Roman soldiers who died bravely in battle, and a long way from home.



Source 2 Burial urns in a Roman tomb in Naples

Some people, though, did not receive the respect of even a 'bulk burial'. The corpses of outcasts, such as prostitutes and people who took their own lives, were left out in the open for wild animals to eat.

Funeral clubs

Poor people in ancient Rome often belonged to funeral clubs called *collegia*. Membership gave Rome's poor some comfort that they would have the honour of a decent burial. While still alive, members enjoyed social occasions, perhaps getting together for a few glasses of wine while discussing their funeral arrangements. The ashes of members, after being placed in an urn, were often stored in one tomb. Each person had a pre-arranged spot for their remains.

The influence of the law

One of the *Laws of the Twelve Tables* (a code of laws written in about 450 BCE) stated that people, other than small children, could not be buried or cremated within the city borders. This was partly for reasons of health, but also because burial spaces were very limited. This law was also designed to avoid excessive air pollution from cremations. As towns and cities grew, and their borders expanded, burial and funeral rites were pushed further and further away from built-up areas. Grave sites (and tombs) of the wealthy began to line roads outside towns and cities, especially the *Via Appia* (one of Rome's most important roadways).



Source 3 Monuments marking ancient grave sites along the Via Appia

The law also made it illegal for mourners to create too much noise and public spectacle at funerals. For example, women were forbidden to gouge their cheeks with their fingernails and wail for too long. The punishment for vandalising a grave or mutilating or disrespecting a corpse was death.

Festivals

Two festivals of ancient Rome honoured the dead. The *Parentalia* was a time in February when people remembered their ancestors, particularly dead parents. The *Lemuria* was an occasion on which to remember all those who had died.

Check your learning 10.13

Remember and understand

- 1 Where were the graveyards and crematoriums in ancient Rome? Why?
- 2 What was the purpose of the *Parentalia* festival?
- 3 a What might be the lot of a poor person who died in Rome?
b Why might a poor person fear such a fate, given Roman beliefs?

Evaluate and create

- 4 Make a papier-mâché or clay model of a mausoleum or monument you would have built in honour of an influential and respected person in society today. Explain what influenced your design.

10C rich task

Gladiators

Gladiator contests were bloody and violent, something that most of us today would find much less enjoyable than the Romans did. Yet the subject of gladiators is still one that intrigues us. Many books, TV programs, graphic novels and films have been created about the gladiators' endurance and spirit. Award-winning films such as *Gladiator* (2000), for example, tell the stories of brave and honourable men who fought against injustice and cruel leaders.

As well as entertainment, films can be very useful secondary sources that give us a sense of historical periods or events. Writers, directors, set and costume designers – and even actors – often do a lot of research when making a film to gain as much accurate detail as possible.

skilldrill

Identify and locate relevant sources

Although historical films can be useful secondary sources, sometimes decisions are made to change the facts in order to make a better story; at other times, errors or oversights can lead to small inaccuracies. Therefore, it is very important that you also use a range of other sources when conducting a historical inquiry. These will provide you with a more balanced picture of the topic you are investigating. To do this, refer to the list of possible primary and secondary sources provided. For each source listed, brainstorm an example that relates to the question or topic you are investigating.

Primary sources:

- physical remains of buildings or houses
- weapons
- armour or costumes
- remains of clothing
- tools
- official documents such as laws and treaties
- personal documents such as diaries and letters
- paintings and artworks



Source 1 A still from the 2000 film *Gladiator*. Maximus, the hero of the film, fights an opponent in the Colosseum.

Secondary sources:

- writings of historians
- encyclopaedia entries
- documentaries
- history textbooks
- websites
- photographs

Take the first type of primary source listed above (physical remains of buildings or houses). If you were researching gladiators, an example of this type of primary source might be the remains of the Colosseum.

An example of the second type of primary source listed (weapons) might be gladiatorial equipment such as swords.

For a detailed description of this skill, refer to page 179 of 'The history toolkit'.

Apply the skill

- 1 Imagine you are making a film or TV program about gladiators. What sort of information would you need to make it as historically accurate as possible? Use the process described to brainstorm possible examples of sources about gladiators. Copy the table below into your notebook. Provide at least one example for each source. The first two examples have been done for you.

| Types of sources | Possible examples of this type of source related to gladiators |
|--|--|
| Primary sources | |
| • physical remains of buildings or houses | • remains of the Colosseum |
| • weapons | • swords |
| • armour or costumes | |
| • remains of clothing | |
| • tools | |
| • official documents such as laws and treaties | |
| • personal documents such as diaries and letters | |
| • paintings and artworks | |
| Secondary sources | |
| • writings of historians | |
| • encyclopaedia entries | |
| • documentaries | |
| • history textbooks | |
| • websites | |
| • photographs | |



Source 2 A still from *Gladiator*. Set and costume designers do a lot of research to achieve historical accuracy in modern re-enactments.

Extend your understanding

Once you have brainstormed possible sources of evidence, you can begin your Internet search. For a detailed description of this skill refer to page 174–175 of 'The history toolkit'.

- 1 Work with a partner and use your ICT skills to locate examples of the types of sources you have listed above. Try to use a variety of websites to locate these sources – for example, don't just use free online encyclopaedias; instead, try some more reputable sites such as the ABC or educational institutions. Simply typing 'gladiators' into a search engine might not locate the best source. Use other key words to make your search more specific.
- 2 Find five sources online that provide relevant and accurate information about gladiators. For each site, record:
 - a the title, author, date of publication and URL (web address)
 - b a brief outline of the kind of information it contains
 - c a brief evaluation of the reliability and usefulness of the source.
- 3 Choose the best site you were able to find. What factors make it the most relevant and reliable?

Depth study 2: Investigating one ancient society

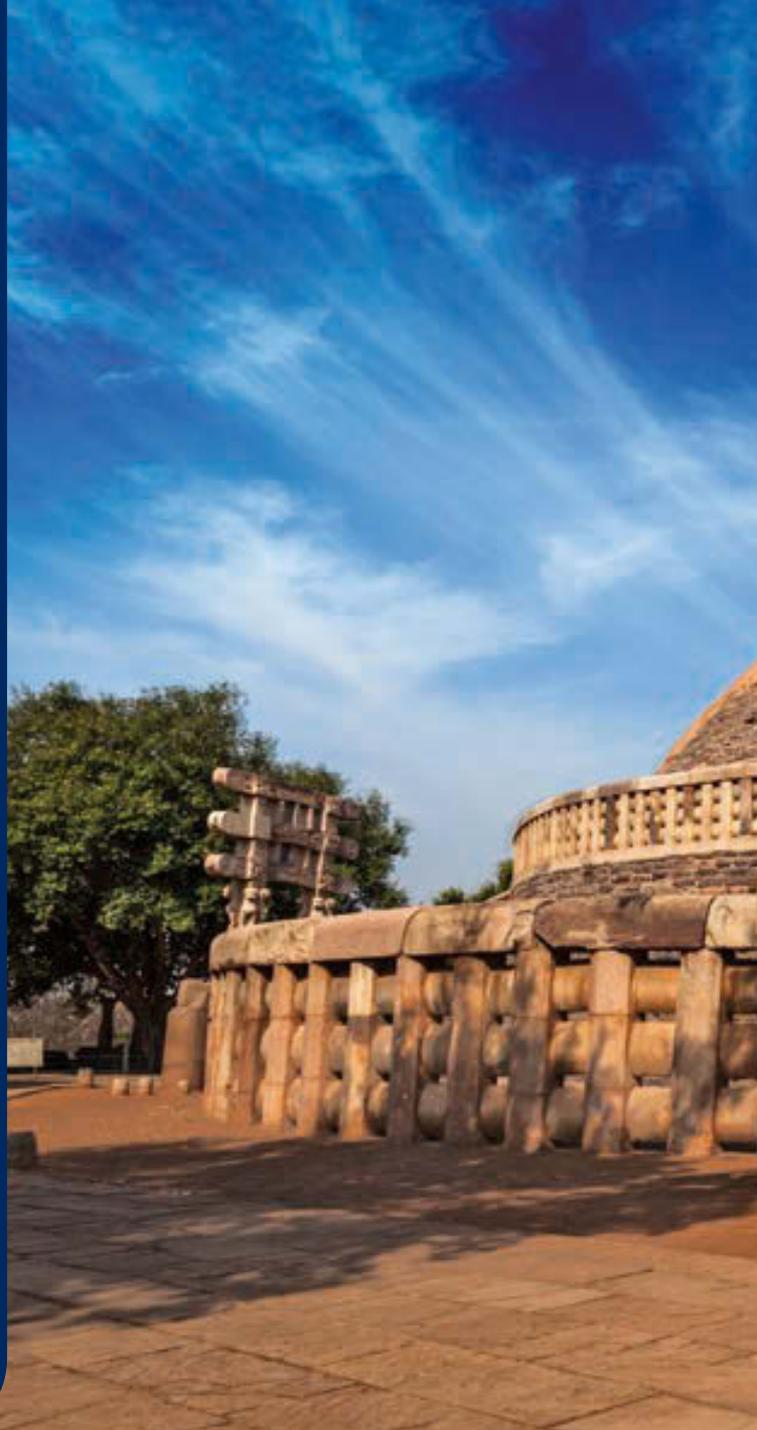
Ancient India

Modern-day India can trace its beginnings back to two of the oldest civilisations on Earth – the Indus Valley civilisation and the Mauryan Empire.

The Indus Valley civilisation began from around 3500 BCE in a fertile river valley in north-west India. Here, well-planned cities developed along the banks of the Indus River, while people across Europe still lived in primitive huts.

Much later, around 321 BCE, the Mauryan Empire, developed along the banks of India's holiest river, the Ganges. Inscriptions left by Mauryan kings have given historians a unique insight into this ancient civilisation.

Two of the world's major religions came into being as a result of these ancient civilisations – Hinduism and Buddhism. The people of ancient India are also believed to have begun the development of modern mathematics.



11A

How did physical features influence the development of ancient India?

- 1 Modern-day India is surrounded by mountains, deserts, river valleys and a coastline. How might these physical features have influenced the development of ancient India?

11B

What shaped the roles of key groups in ancient India?

- 1 Two of the world's major religions originated in India – Hinduism and Buddhism. How do you think religion might have shaped the role of key groups in India?



chapter 11

Source 1 This building, known as the Great Stupa, is located in the town of Sanchi in central India. It was built by Emperor Ashoka in the 3rd century BCE during the rule of the Mauryan Empire. A stupa is a dome-shaped building that contains relics (religious artefacts).

11C

How did beliefs, values and practices influence ancient Indian lifestyles?

- 1 Walking around ancient India one would see a Hindu temple, a Buddhist stupa (religious building) and a pavilion containing a ritual fire and a sacred tree. What does this tell us about the lifestyles of ancient Indians?

Investigating one ancient society

This depth study offers a choice of five topics:

- Ancient Egypt
- Ancient Greece
- Ancient Rome
- Ancient India
- Ancient China

You must choose AT LEAST ONE of these topics for study.

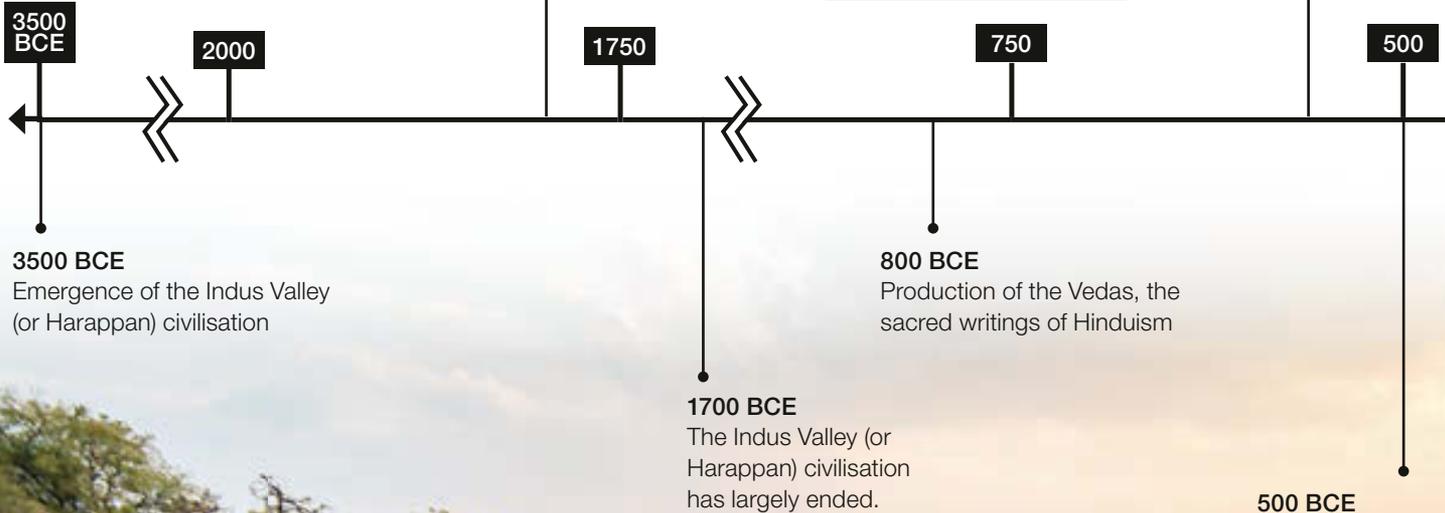
11.1 Ancient India: a timeline



The remains of the Great Bath in Mohenjo-Daro, the largest city of the Indus Valley (or Harappan) civilisation. It is thought to have been a centre for ritual bathing.



The Hindu god Vishnu's four arms indicate that he is everywhere and all powerful.



Source 1 A timeline of the key events in ancient India

11A How did physical features influence human settlement in ancient India?

327 BCE

Alexander the Great crosses the Indus River, intent on invasion.

269 BCE

Ashoka Maurya, Chandragupta Maurya's grandson, becomes emperor of the Mauryan Empire.

232 BCE

Death of Emperor Ashoka

185 BCE

Mauryan Empire ends, marking the start of a 500-year period of small kingdoms.

320 CE

Beginning of the Gupta Empire, a period in which the arts and sciences flourish

470 CE

Birth of Aryabhata, the first in a long line of great Indian astronomers and mathematicians

550 CE

End of Gupta Empire

250

1 CE

500

700 CE

250 BCE

Ashoka sends missionaries across Asia to spread Buddhist beliefs.

50 BCE

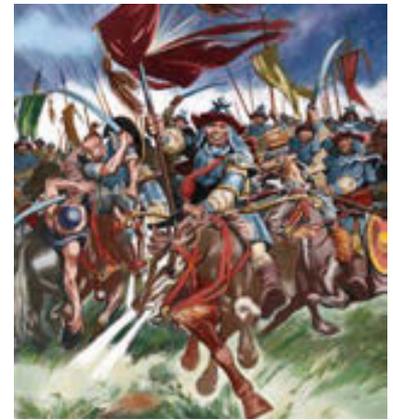
The first Buddhist stupa (religious building) constructed at Sanchi in India – it becomes known as the Great Stupa

321 BCE

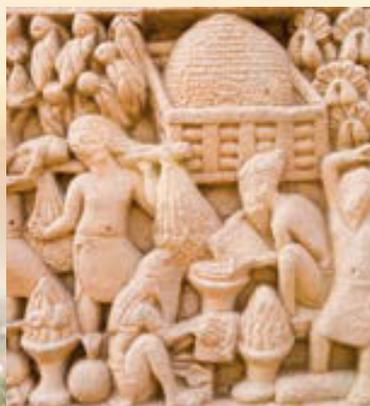
A northern king, Chandragupta Maurya, founds the Mauryan Empire.



The four lions on Ashoka's stone pillar at Sarnath. They are now the official symbol of the modern Republic of India.



An artist's impression of invading Huns (a rival civilisation from the West) who helped bring an end to the Gupta Empire.



Part of a stone relief from Great Stupa at Sanchi Bhopai, India

Check your learning 11.1

Remember and understand

- 1 What is the name for the sacred writings of Hinduism?
- 2 What religion is associated with a man called Siddhartha Gautama?

Apply and analyse

- 3 Use the timeline to calculate how many years in total the Mauryan Empire lasted.

Evaluate and create

- 4 Select two individuals that feature on the timeline. Conduct some Internet research to find out the significance of these individuals to ancient India.

11.2 Landscape and climate

India's geography and climate have helped to shape its history. Like most major civilisations across the ancient world, the earliest settlements in India developed in river valleys. The Indus Valley, a vast flood plain, became the location of many of ancient India's earliest and largest communities (see Source 2). The Indus River lies in the north-west of the subcontinent, in modern-day Pakistan. It begins high in the Himalayas and flows south 3180 kilometres to the Arabian Sea. The Thar Desert lies to the south-east

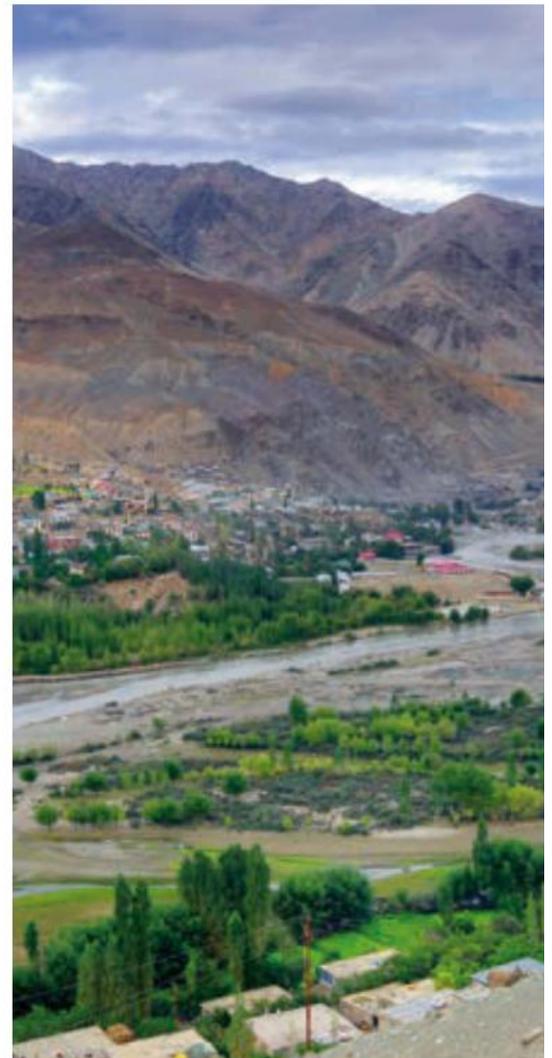
of the Indus River, providing a natural barrier and protecting settlements from invaders. Further south, a large **plateau** (a large section of flat land) called the Deccan Plateau makes up the majority of India's southern region. The flat land of the Deccan Plateau is good for farming and animal grazing. The Deccan Plateau slopes down to the Indian Ocean in the west and the Bay of Bengal in the east. This extensive coastline was ideal for sea trade (see Source 1).

THE INDIAN SUBCONTINENT



Source 1

Source: Oxford University Press



Source 2 The fertile lands in the valley of the Indus River in India. It became the location for India's earliest civilisation, the Indus Valley (also known as the Harrapan) civilisation.

India is a warm to very hot place year-round. Temperatures as high as 49°C have been recorded in some places, especially between March and June. The heavy monsoon rains typically arrive in June, with rain then falling most of the time until September.

Most of the year's rainfall is during these few months, and India's agriculture relies on monsoon rains arriving before its fields and crops dry up in the hot, dry months leading up to the monsoon. During the monsoon months, farmers store water supplies so they can irrigate crops during the rest of the year.



Source 3 Part of the Himalayas poking through the clouds. The mountain range, which separates India from China to the north, contains 90 of the 100 highest peaks on Earth.

Check your learning 11.2

Remember and understand

- 1 What four important physical features shaped the history of the Indian subcontinent?

Apply and analyse

- 2 For each feature, state how it may have influenced decisions about early human settlements and lifestyles.
- 3 What problems would a severe monsoon have caused for an ancient settlement?

Evaluate and create

- 4 Ancient India was located about halfway between the ancient societies of the Mediterranean and Asian worlds, which was particularly significant once the Silk Road became a major trade route between East and West. Find out through Internet research what the 'Silk Road' was and create a map showing this route.

11.3 Ancient India's early civilisation

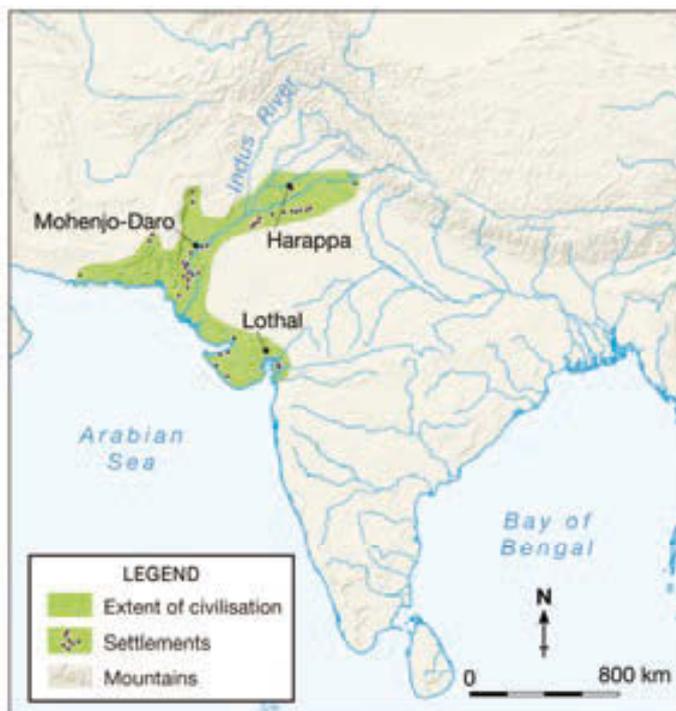
The earliest civilisation to be established in ancient India is often referred to as the Indus Valley civilisation. It takes its name from the Indus River around which that civilisation developed. Knowledge of this civilisation came to light with the discovery of its second largest city, Harappa. For this reason some historians also refer to it as the Harappan civilisation.

The Indus Valley (Harappan) civilisation developed from early farming communities that depended on the river waters for irrigation. Wheat and barley were their staple crops and rice was also grown. It lasted from about 3500 BCE to 1700 BCE, but was at its greatest power and size from about 2600 BCE to 1900 BCE.

The discoveries of Harappa and Mohenjo-Daro

Countries in the West first came to know of an early Indian civilisation through the writings of a British

INDUS VALLEY CIVILISATION

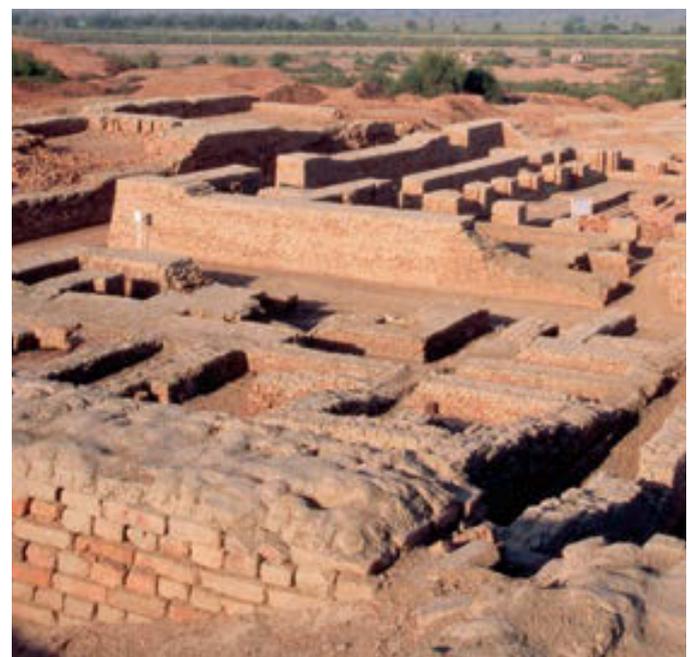


Source 1

Source: Oxford University Press

army soldier named James Lewis. He had come upon the ruins of Harappa in 1826 while travelling an area that is now the Punjab region of Pakistan. By the time the archaeologist Sir Alexander Cunningham visited the site in 1873, many of the walls and buildings of Harappa had disappeared. British engineers had taken the bricks from the ancient ruins to use for the building of a railway line.

For many years, there was little archaeological interest in the site. This changed in 1919 when Indian archaeologist R.D. Banerji investigated an ancient Buddhist **stupa** about 500 kilometres south of Harappa. Banerji noticed that the stupa was surrounded by mounds of crumbling bricks. He began digging and found, among other things, three soapstone **seals**. These seals were similar to one that had previously been found at Harappa, and were engraved with the same unknown writing that could not be decoded. Banerji had stumbled across the remains of the other great city from the Indus Valley civilisation – Mohenjo-Daro.



Source 2 The ruins of Mohenjo-Daro



Source 3 Ancient ruins overlooking part of the fertile Indus Valley

Extent of the civilisation

Since the 1920s, archaeologists have located more than 1050 Indus Valley sites, which have been confirmed by their distinctive architecture and stone seals. Dockyards, grain storehouses, warehouses, brick platforms and protective walls have been found in almost all these settlements. Most are beside rivers, though some were found on the ancient seacoast and adjacent islands. These discoveries confirm the importance of rivers and coastlines in the choice of early human settlements in this region.

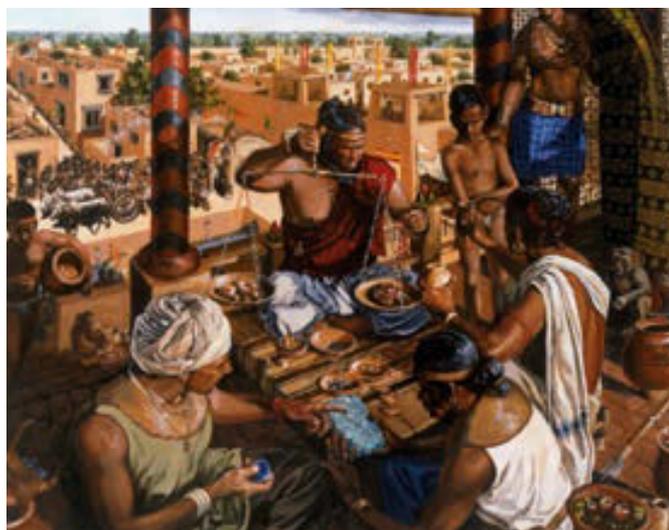
Trade

The Indus Valley settlements were well located for what seems to have been the people's main occupation: trade. Rivers provided transport routes to the coast, from where goods could be shipped to other lands.

Beads made from **carnelian** have been found in the Mesopotamian city of Ur and in Oman (in the Arabian Peninsula), where pottery and bronze weapons of Indus design have also been found.

At Lothal, near the mouth of the Indus River, archaeologists have found a huge dredged canal and dock, indicating that it was an important port.

Indus Valley merchants also had links by sea to the Tigris–Euphrates delta (in modern-day Iraq), and by land with parts of today's Afghanistan and Iran and other parts of India. About a dozen Indus



Source 4 Artist's impression of Indus Valley merchants. A local trader weighs beads in the foreground. Bead and jewellery making – using gold, ivory, copper, shell and semi-precious stones – was a key industry.

Valley seals have been found at sites in Iraq and Iran. Weights (for measuring purposes) are among the artefacts that have been excavated in Indus Valley settlements. The Indus Valley people are believed to be among the first to develop a system of uniform weights and measures. These finds add to the evidence that the civilisation had a strong and widespread trade.

Check your learning 11.3

Remember and understand

- 1 How were the ruins of Harappa and Mohenjo-Daro discovered?
- 2 In which modern-day countries was the Indus Valley (Harappan) civilisation located?

Apply and analyse

- 3 Select three sources from the text or from your own research and indicate the evidence that they provide about the achievements of the Indus Valley (Harappan) civilisation.

Evaluate and create

- 4 Use Google Earth to closely study the different land types in and around the areas where the Indus Valley (Harappan) civilisation developed. Use the sources from the text and your own research to present a photo-montage of geographical features of India, including captions.

11A rich task

Understanding daily life in the Indus Valley

The most common, and in some ways most puzzling, archaeological finds from the Indus Valley civilisation are numerous seals made from soapstone. These seals may have been used to stamp trade goods or other property to show ownership. To this day, the inscriptions on these seals remain undeciphered. The animal most commonly found on the seals is thought to be a unicorn (others say it is a rhinoceros). About a dozen Indus Valley seals have been excavated from sites as far away as Iraq and Iran. Studying these seals closely in order to gather valuable historical evidence uses an important skill for all historians.

The most distinctive single object found at Mohenjo-Daro is a stone sculpture known as the 'Priest-King', despite the fact there is no supporting evidence that the figure represents either a priest or king. The sculpture, found in 1927, is only 18 centimetres tall. The figure wears a headband, and has a similar band on his right arm. His upper lip is shaved and his beard is combed. His eyes are deeply cut into the stone, and some archaeologists think there may have been carved shell set into them. He is wearing a cloak decorated with a three-leafed design called a trefoil. The trefoils were once coloured red.

skilldrill

Analysing historical sources

Analysing historical sources is an important skill to develop. When analysing photographs, paintings, artworks or historical sources such as stone carvings, it is useful to follow these steps:

Step 1 Check the composition of the work

What is shown in the scene and why? How do we know what is happening? Is the entire scene or work shown, or just a section of it?

Step 2 Identify any important figures

Who is shown in the scene and why? How many figures are there? Are they depicted as individuals or are they all the same? Are any figures larger than others and why might they be shown this way?

Step 3 Look closely at the background

Does the background provide information about where the action is happening? Is the setting clearly shown? Are there any other decorations?

Step 4 Look for small details

Are there any small details hidden in the scene? Examine clothing, tools, weapons, animals, buildings and other objects.



Source 1 The 'Priest-King' of Mohenjo-Daro

Step 5 Look for anything unusual

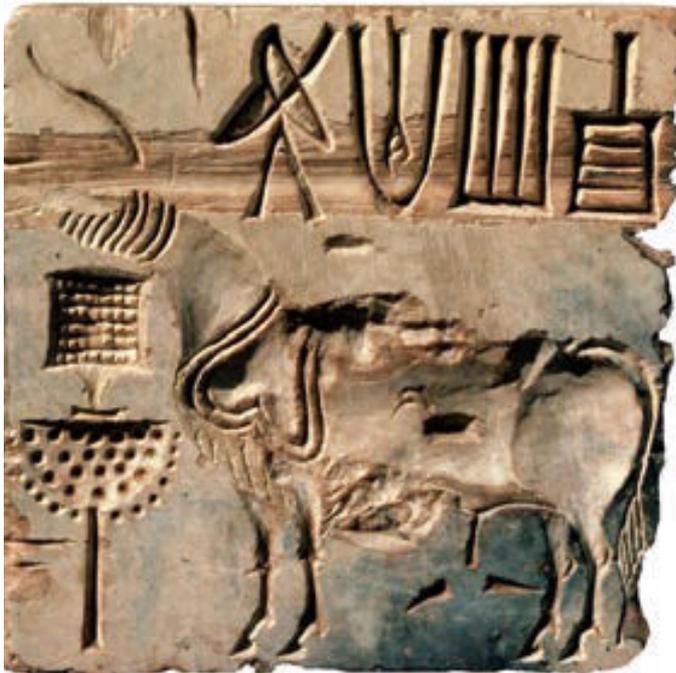
Are there any elements in the scene that are confusing, either because they're new to you or because they don't fit your understanding of the period? Make a note of these and research them further using other primary or secondary sources.

Step 6 Try to identify attitudes, personal points of view or bias

When analysing a scene or work of art, keep in mind that it may not necessarily be an accurate representation of what actually happened. Remember that while a particular artwork or representation might show common people, it was almost certainly commissioned (ordered and paid for) by someone with money (such as a king or nobleman) who may have been interested in making things look a certain way for their own interests.

Apply the skill

- 1 Source 2 is a picture of one of the seals found among the ruins of Mohenjo-Daro. Your task is to analyse the source, taking into account the features described above and the questions you should be asking yourself.



Source 2 A seal from the ruins of Mohenjo-Daro which is thought to feature a unicorn

Extend your understanding

- 1 Imagine you have been commissioned to make a mural of everyday life at home in ancient India, which is to be displayed next to the front door. What would you include in your mural and what would you not include in your mural?
- 2 Draw a design for the mural, and annotate it to explain the composition, choice of figures, background and details.
- 3 Conduct research on the swastika symbol (see Source 3) to discover its different uses and meanings over time. For example, swastikas have been found in religious buildings and temples; two Canadian ice-hockey teams in the early 20th century used swastikas on their uniforms; and Adolf Hitler's Nazi party adopted the symbol in the 1930s. Write a 250-word report, with pictures, to summarise your findings. Also explain why the swastika is now regarded as inappropriate and offensive by many people.

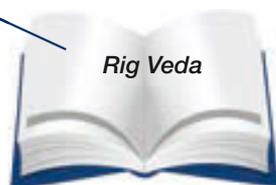


Source 3 Some of the seals have a symbol called a swastika engraved on them, such as this example from Mohenjo-Daro.

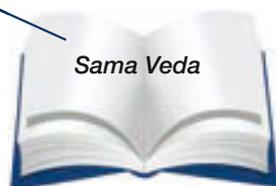
11.4 The social structure of ancient India

Indo-Europeans (commonly known as Aryans, or Vedic people) moved into northern India from about 1800 BCE. They produced four religious manuscripts called the Vedas, which became the holy books of Hinduism. The Vedas were written from around 1500 BCE to 500 BCE, so this period became known as the Vedic period.

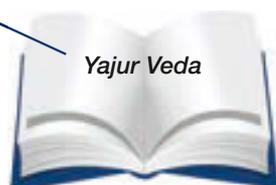
The oldest of the four Vedas (perhaps written as far back as 14000 years ago). It consists of hymns (or *mantras*). The four Hindu castes are described in this text.



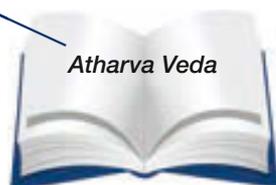
A collection of melodies mainly related to the humns or songs in the *Rig Veda*.



A collection of chants to be spoken by priests at set times when going about their religious rituals.



A book of charms and spells. Its language is less complex than that in other Vedas. It also provides more insights into the day-to-day life of the society than the other three texts.



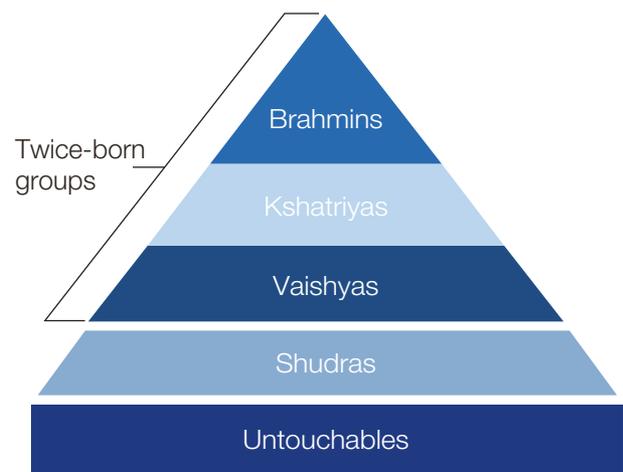
Source 1 The four Vedas

The caste system

During the Vedic period, the concept of a caste system developed within Hinduism, dividing society into groups. The caste system in India enforced rigid limits on a person's life, dictating their responsibilities and privileges within society. The caste you were born into determined the sort of life

you would lead, including the job you did, the person you married, and the people you socialised and ate with. People could not change their caste. There was no 'social mobility' such as we have now, where you may be born poor but still become rich and famous.

There were four main castes or *varnas* (and many subcastes within each). Each caste was seen as an essential part of society. All were important, with each serving a needed role. The first three – Brahmins, Kshatriyas and Vaishyas – were the so-called 'twice born'. This was because children took part in a 'rebirth' ceremony around the age of 12, when they came of age. The fourth caste, the Shudras, did not have these spiritual privileges. Below these castes were the Untouchables – the lowest of the low with no rights or privileges.



Source 2 The caste system in ancient India

Brahmins

The Brahmins were the most privileged caste. They were the priests, teachers and performers of the religious rituals. They alone memorised and passed on teachings from the Vedas. They even exerted authority over the powerful tribal chiefs. Brahmins were expected to lead a religious, intellectual and saintly life, and develop all ideal qualities, especially honesty, integrity, cleanliness,

purity, austerity, knowledge and wisdom. They were not expected to accept paid employment but could receive gifts. Although Brahmins were meant to live simply, relying on donations from others, they sometimes came to possess large estates and large sums of money. Legally, Brahmins could not be sentenced to death, nor receive torture or physical punishment. They also did not have to pay taxes.



Source 3 A Brahmin performing religious rituals in a Hindu temple

Kshatriyas

Kshatriyas were the noble caste. They were the leaders and protectors of society. They served as kings, warriors and tribal chiefs. Their responsibilities included the protection of citizens from harm, especially women, children, Brahmins and the elderly. They also had an obligation to protect cows.

In times of war, they were expected to be the first into battle and never to flee the battlefield. As leaders, they were to ensure that the citizens performed their duties, enforce law and order, and collect taxes from the main tax-paying caste, the Vaishyas. Spiritually, they were to advance their own spiritual awareness by knowing the scriptures and by taking counsel from the Brahmins.

Traditionally, only men from the Kshatriya class undertook military training. Reforms in modern India have allowed other castes to join the military. However, the majority of the Indian army is still made up of soldiers from the Kshatriya caste.



Source 4 These Indian soldiers on parade are members of the Kshatriya caste.

Vaishyas

Vaishyas were the farmers and merchants. Economically they were the most productive of all the castes. As time passed they became the business class and could become very wealthy. Their original function was to work and earn money to support the Brahmin and Kshatriya castes above them. As a result, they paid heavy taxes. Though lower than the Brahmins and the Kshatriyas in the social order, they retained certain spiritual privileges and could perform some rituals and rites of passage.



Source 5 Merchants such as this man are members of the Vaishya caste.



Source 6 These Shudra caste men are employed to work in a factory belonging to a merchant from the Vaishya caste.

Shudras

The Shudras were the workers, and it was their duty to serve the other three castes. They were the only section of society allowed to accept employment from members of the other castes. The Shudras paid taxes, though these were not as heavy as those paid by the Vaishyas. Although theirs was a life of labouring for others, it was not necessarily an unbearable existence. Employers from the Vaishya caste were obliged to supply a worker with tools, and workers for wealthy landlords were paid a regular wage.

Untouchables

At the very bottom of society were the group of people who came to be known as the 'Untouchables'. In modern India the name Dalit is used for this group. Untouchables included all those who did not fit into the four castes already described. These might include nomadic people, foreigners, non-Hindus and so on. It also included most of the poor. These were the people who did the work that the other castes regarded as polluting. Hence, they could not be 'touched'. Today, there are more than 160 million Dalits in India.

Untouchables had no rights or privileges. Neither, generally, were they shown compassion, even in the

face of great suffering and injustice. A Dalit writer, Omprakash Valmiki, recently reported that, in the past, Untouchables found to be memorising Hindu sacred texts might have hot melted lead poured into their ears.

Jobs for Untouchables

Other castes saw Untouchables as being too 'impure' to touch. They did the jobs that were despised or considered spiritually unclean. They cleaned toilets and scrubbed out sewers, swept roads, scavenged through rubbish, removed dead animals from public places, carried out the most menial farm work and handled corpses. They could not live normal lives in a village or share public facilities such as wells, ponds and temples.

Daily life for Untouchables

Untouchables lived (as Dalits generally still do) in housing separated from the housing of the other castes. They typically dressed in clothes taken from people who had died, ate only from cracked bowls and dishes and, for jewellery, used only objects made of iron. They could not wear shoes or remain seated in the presence of someone from a higher caste. The penalty for a Brahmin who killed an Untouchable was the same as for killing a dog.

Hardships for Untouchables

Even today, Dalits can be tortured, killed or humiliated for something that they did not do. (It might be something a family member did.) Complaints by Dalits against such treatments are rarely investigated; a 2001 Amnesty International study found that 30 per cent of rape cases reported by Dalit women were dismissed as 'false'.

Many Untouchable girls in the past were forced, at a young age, to become *devadasis* (or so-called 'servants of god'). They were never allowed to marry.

Untouchables had to avoid 'polluting' members of other castes. They had to go out of their way to avoid any kind of physical contact (in extreme cases, even with someone's shadow), or being seen by a caste member. For instance, if an upper-caste member accidentally looked at an Untouchable he or she became defiled and had to carry out purification rites. This involved bathing his or her eyes with perfumed water and not having food or drink for the rest of the day. It may also have included washing places where an Untouchable had stood or walked. Sometimes it involved religious ceremonies.

Source 7 Dalit women working as corn threshers on a farm in northern India



Check your learning 11.4

Remember and understand

- 1 List the chief responsibilities of the Brahmin, Kshatriya and Vaishya castes.
- 2 What does 'twice born' mean?
- 3 List the chief responsibilities of the Shudras and Untouchables.
- 4 What are the Untouchables now called?

Apply and analyse

- 5 How do you think the caste system would have influenced the design of towns and cities in ancient India?
- 6 Australia does not have a formal caste system as ancient India did. But do you think we have similar divisions in our society, even if they are not formalised? Write down your thoughts or discuss in small groups, giving examples to support your views.

Evaluate and create

- 7 Using the Internet, research how the social system is starting to change for the Dalits in India (especially since India's independence). Use this information to write a short magazine article that also expresses your feelings about Dalits in modern India.

11.5 Other key groups in Indian society

Slaves

Written sources, such as the Sanskrit Laws of Manu (1st century BCE), confirm that there was slavery in ancient India, and there were certainly slaves during the Mauryan Empire. Slavery in ancient India did not operate in the same way as it did in ancient Greece and Rome. Most slaves in India appear to have been acquired by other means than as prisoners of war. Many were brought to India by traders.

Slavery was also a punishment for certain crimes. Some people even chose to become slaves to pay off a debt. Unlike in many other cultures, if a man chose to be a slave his family could still remain free.

Being a slave in India seems to have rarely been a life sentence. Some slaves worked in mines.

Most appear to have worked as domestic servants, probably having a better life than the Untouchables. This was because slavery was governed (at least officially) by laws.

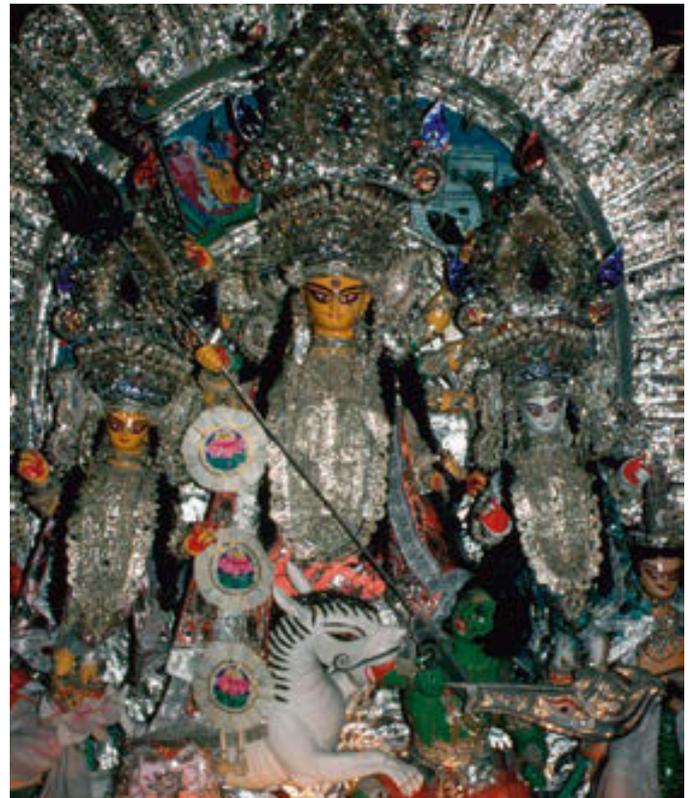
Women

Most historians think that women enjoyed much the same status as men in ancient India. It is thought they played an active role in society, especially during the Vedic period. It seems they were educated, and respected by men for their spiritual and intellectual abilities. They could marry anyone they chose (as women, not young girls) and have a say in what happened in the family.

The rights of slaves

- Could be paid for their work
- Could occasionally have a break from their work
- Were protected by laws against being raped, whipped around the head, or ordered to remove human waste – a master could be fined for such behaviours
- Could buy back their freedom
- Might be voluntarily released by the master
- A woman could go free if made pregnant by the master; if a boy was born, he was recognised as the legal son of the master.

Source 1 Some of the rights thought to have belonged to slaves in ancient India



Source 2 A shrine to Shakti, surrounded by offerings

This position was probably supported by aspects of religious belief. Women were seen by Hindus as the human form of the goddess Shakti, the 'Great Divine Mother' (see Source 2). The creative power of Shakti was seen to be most evident when women produced children.

Changes in the status of women

The status of women described here seems to have been common during India's ancient period. Things seem to have changed for women. Women began to lose their earlier independence and become more socially repressed by men. Their former social status began to decrease. Some of the restrictions that started to be placed on women as India moved out of its ancient period are outlined in Source 3.

Restrictions placed on women

Girls began to be forced into marriage as 'child brides'.

Daughters were not valued, except to do work around the house.

Men began having more than one wife.

Widows were treated (at least for a time) as social outcasts.

The practice of *sati* emerged (wives whose husbands were cremated were sometimes burned alive with them).

Women were restricted from voicing public opinions.

Source 3 Some of the restrictions placed on Indian women



Source 4 Although such practices have been forbidden by law for half a century, child marriages still take place in India. Here, a girl aged 7, her head covered with a veil, is going through the ceremony of an arranged marriage to a 6-year-old boy.

Check your learning 11.5

Remember and understand

- 1 Name two rights that ancient Indian slaves are thought to have had.
- 2 Name two restrictions placed on Indian women.

Apply and analyse

- 3 Why would you say it was better to be a slave than an Untouchable in ancient India?
- 4 Identify some ways in which religion (of any type) influenced the role and status of women in Indian society.

Evaluate and create

- 5 Write a letter arguing why women's social status in India should be addressed.

11B rich task

The status of Untouchables

Being born as an Untouchable in ancient India meant having a harsh life. It meant being seen by the castes as less than a worthwhile human being. This continues unofficially in many parts of India today. This is despite the fact that the status of 'Untouchable' was banned in 1950. At the time, the constitution of the newly formed Republic of India declared that all its citizens had equal status.

Source 1

The sins of Girdharilal Maurya are many, his attackers insisted. He has bad karma. Why else would he, like his ancestors, be born an Untouchable, if not to pay for his past lives? Look, he is a leatherworker, and Hindu law says that working with animal skins makes him unclean, someone to avoid and revile. And his unseemly prosperity is a sin. Who does this Untouchable think he is, buying a small plot of land outside the village? Then he dared speak up, to the police and other authorities, demanding to use the new village well. He got what Untouchables deserve. One night, while Maurya was away in a nearby city, eight men from the higher Rajput caste came to his farm. They broke his fences, stole his tractor, beat his wife and daughter, and burned down his house. The message was clear: Stay at the bottom where you belong.

*The punishment of Girdharilal Maurya (c. 2003)
from National Geographic online news*

Source 2

Recently, an organisation called Video Volunteers, which runs a network of community correspondents throughout India, launched a campaign called Article 17, named after the constitutional provision that banned untouchability.

They are now preparing to file a lawsuit in the Supreme Court and ask the government to take steps to stop untouchability practices.

The campaign and the lawsuit are based on video evidence gathered by Dalits themselves.

The short clips that come from all over India include a man who complains that a local barber refuses to cut his hair, a group of children who are forced to eat lunch separately from their classmates and women who walk for hours to fetch water because they are not allowed to use the public tap in their village.

None of the footage on its own is particularly dramatic, but the persistent, systematic discrimination that it documents is deeply disturbing.

*India's Dalits still fighting untouchability (c. 2012)
from BBC News online*

More legal and political changes

Another law was passed in 1989 called the Prevention of Atrocities Act. This law made it illegal to force people to parade naked in public or do other degrading things. But abuses continued, particularly in rural areas. In 2002, a resolution against discrimination based on caste was approved by the United Nations Committee for the Elimination of Racial Discrimination. Even that is having only limited success in rural areas.

These changes build on efforts started by many others, stretching as far back as the 5th century BCE. Both Siddhartha Gautama (who became the Buddha) and Mahavira (who founded the religion Jainism) were

concerned about the way Untouchables were treated. So was the political activist Mahatma Gandhi (1869–1948).

More recently, Dalits themselves have been speaking out and demanding their rights. Dalit writers, such as Valmiki, are raising international awareness of the treatment Untouchables endure. In 1997, a man named K.R. Narayanan was elected as President of India. Ten years later, K.G. Balakrishnan was sworn in as India's Chief Justice. Both men are Dalits, and the first of their social class to hold such offices in India.

Source 3 A protest march by Dalits in Mumbai



skilldrill

Identifying and analysing the perspectives of people from the past

Primary and secondary sources reflect and represent many different perspectives, points of view, attitudes and values. People who create sources are influenced by their gender, age, family and cultural background, education, religion, values and political beliefs, their life experiences and the time in which they live. It is the historian's job to make sure that they consider a range of perspectives in their investigations, allowing more voices to be heard and a more complete picture to be formed. Identifying and analysing the perspectives of different people is a very important historical skill. To do this, you need to understand the social, cultural and emotional contexts and factors that shaped people's lives and actions in the past.

Follow these steps when applying this skill:

- Step 1** Identify the historical issue around which there may be different opinions or interpretations.
- Step 2** List the various groups and people who may have been involved in or affected by this issue.
- Step 3** Identify their roles or positions in society.
- Step 4** Locate some primary sources that provide evidence about their points of view or opinions on the issue.
- Step 5** Analyse each source, using the following questions as a guide:

- Why was the source written or produced?
- Who was the intended audience of the source? Was it meant for one person's eyes or for the public? How does that affect the source?
- What was the author's message or argument? What was he/she trying to convey? Is the message explicit, or are there implicit messages as well? What can the author's choice of words tell you? What does the author choose not to talk about?
- How does the author try to get the message across? Do they give a detached, balanced account, or is it biased for or against the issue?
- Compared to what we face today, what relevant circumstances and experiences were different for the author of the source in the past? Some examples might include religion, economy, family life and technology. How do you think these factors and experiences influenced their thoughts and actions?

Apply the skill

- 1 Consider Sources 1 and 2. Identify and analyse the perspectives portrayed, using the steps.

Extend your understanding

- 1 Conduct some research to locate some primary source documents illustrating the perspectives of groups or individuals when K.R. Narayanan, a Dalit, was elected as President of India in 1997.

11.6 Religious beliefs and practices

Three major religions originated in ancient India – Hinduism, Buddhism and Jainism. Over centuries, Hinduism and Buddhism developed into major world religions, while across the Indian subcontinent Hinduism and Jainism have established themselves as the most significant religions. Buddhism has declined in popularity in India but has flourished elsewhere in South-East Asia.

Hinduism

Hinduism is the oldest major religion in the world. According to religious scholars, Hinduism originated 5000 or more years ago, before the arrival of the Aryans (Indo-Europeans). The Aryans both influenced, and were influenced by, the religious practices of the original Indus Valley peoples who were known as the 'Hindus'. As well as developing the Sanskrit language, the Indo-Aryans created a body of literature called the Vedas based on hymns and other sacred poems from their gods. Over time, the Vedas became the most sacred texts in Hinduism and now form the basis of the Hindu faith.

Hindus believe in an original being, Brahman, who takes the form of many other **deities** (gods). The three most important are Brahma (the creator of life), Vishnu (the preserver) and Shiva (the destroyer). The elephant-headed Ganesa, protector of the home and family, is another important deity.

Hindus also believe in **reincarnation** (living again after death, in the form of another human, animal or plant). Each relived life 'pays the price' for wrongdoings in the previous life, but also improves on the one before. Eventually, the person becomes one with the Brahman.

Hindu beliefs require believers to:

- live according to the 'rules' of the **caste system** (a division of people into a class or group)
- worship their deities (with offerings made to gods in temples and holy places)
- cremate (burn) rather than bury their dead
- make pilgrimages to holy places such as the Ganges River (see Source 1).

Source 1 Hindu pilgrims bathing in India's holiest river, the Ganges





Source 2 The religion of Buddhism traces its roots back to ancient India. It is based on the life and teachings of Siddhartha Gautama – who later became known as Buddha.

Buddhism

Buddhism stemmed from the life and teachings of Siddhartha Gautama. He was born to a noble family around 563 BCE in modern-day Nepal. Over time, he grew disillusioned with his privileged life and left to pursue a simple life in the search for truth. After various experiences, including nearly starving to death, he sat under a tree, vowing to stay there until he had found the truth about life. After 49 days of meditation he is said to have reached a state of enlightenment or Nirvana. Believers say he was the first to break out of the cycle of reincarnation, and to be freed from the suffering that goes with it.

Buddhists do not worship deities. Instead they strive for a deeper insight into the true nature of

life, with a focus on personal spiritual development. Buddhism teaches that greed, bloodshed and violence can never make people happy. The way to find peace of mind is through honest work, truthfulness, kindness and respect for the lives of all creatures, human and animal.

Jainism

Jainism developed as an offshoot to Hinduism and teaches that one should do no harm to any living thing. Jains, like Hindus, believe in karma, which teaches that the effects of a person's actions determine his or her destiny in the next life – that no repentance can save someone and no god can forgive or forget past actions.

Check your learning 11.6

Remember and understand

- 1 Name one belief that Hinduism, Buddhism and Jainism have in common.

Apply and analyse

- 2 How do you think this belief would have affected the lifestyles of ancient Indians?

Evaluate and create

- 3 Create a new deity for ancient India. Sketch his or her appearance (use labels and stick figures if you cannot draw). Describe this deity's role. List the different ways in which your deity would have affected the lives of ancient Indians.

11.7 Everyday life

Options

In this section, how beliefs, values and practices influenced the lifestyle of the ancient Indian people is discussed in respect to the three topic areas listed below:

- everyday life
- warfare
- death and funeral customs.

Choose only ONE of these topic areas to study.

Daily experiences of people in ancient India would depend on their position in the caste system, whether they were male or female, and where they lived.

Housing

The cities of the Indus Valley civilisation were enclosed within high brick walls. This provided populations with some protection against attack from outsiders. Houses and streets were well planned in an ordered grid pattern.

Homes of the rich

The houses of the rich in ancient India were typically several storeys high with

whitewashed walls. There would also be a private garden. Often a small stream ran through it, allowing families to carry out the daily ritual washings (for religious reasons). The private life of the family centred around this garden. Herbs were grown there to help treat any illnesses.

Rooms were separated by hanging mats or tapestries. Floors were laid with polished tiles. Each day, rooms were perfumed by incense and fragrant flowers. Furniture was typically elegant and varied. In the master bedroom, there might be a soft bed with a white bedspread and a decorated canopy above, as well as tables, chairs and baskets of flower garlands to wear.



Source 1 Inside a home in India. This style of housing is typical for a poor family in India.

Homes of the poor

Living conditions were much more basic for poor people, especially those living in outlying towns and villages. Their houses were usually single-storey, with walls covered with a mix of lime, dirt and cow manure. Floors were beaten dirt, and there might be only one window. Furniture was non-existent or extremely sparse. There were no chairs; people sat or squatted on the ground. There may have been a bed with a wooden or bamboo frame. Domestic utensils were restricted to pots of various sizes.

Marriage

Men in India's Vedic period typically had one wife and there were no child brides. Young people seem to have been free then to marry any person they chose, as long as they had parental agreement.

With time, marriages became more structured; with more restrictions placed, especially on the females. Brides got younger. Some religious texts

permitted the marriage of girls as young as eight, while others preferred the girl to be at least 12 years old.

Marriage evolved to become a matter that was planned over a long period. Sometimes the families arranged things directly; other times, the services of matchmakers (*ghataka*) were used. **Astrologers** were consulted to find the best time for the wedding. The father of the bride was obliged to supply a dowry or wedding gift to the family of the groom.

Households

After marriage, the new bride cut all ties with her birth family and became part of her husband's household and *gotra* (family line). The household into which she moved was an extended family, with grandparents, uncles, aunts and other relatives living together under the authority of the head of the household. The numbers were increased by the developing practice of **polygamy**, where men would have more than one wife.

Polygamy was permitted for all castes but was practised mainly by the Kshatriyas (nobles). Its main purpose was to ensure that a son would be produced who would preserve the *gotra*. Custom required that a man should wait eight to 12 years before taking a second wife. This was seen to be a sufficient time to wait for his first wife to bear him a son.

Food and diet

In ancient times, Indus Valley populations would have eaten the grain crops they grew (e.g. rice, lentils and wheat) and the meat of the animals they herded (e.g. sheep, pigs, cattle and goats). Diets changed over time, often for religious reasons. For example, not eating meat became more common during the Mauryan Empire. This was because animal sacrifice had become less common under Emperor Ashoka, who had converted to Buddhism. By the time of the Gupta Empire, the cow had become sacred and Hindus did not eat beef at all. Much later, with the arrival of Islam, pork also became a forbidden food for many.

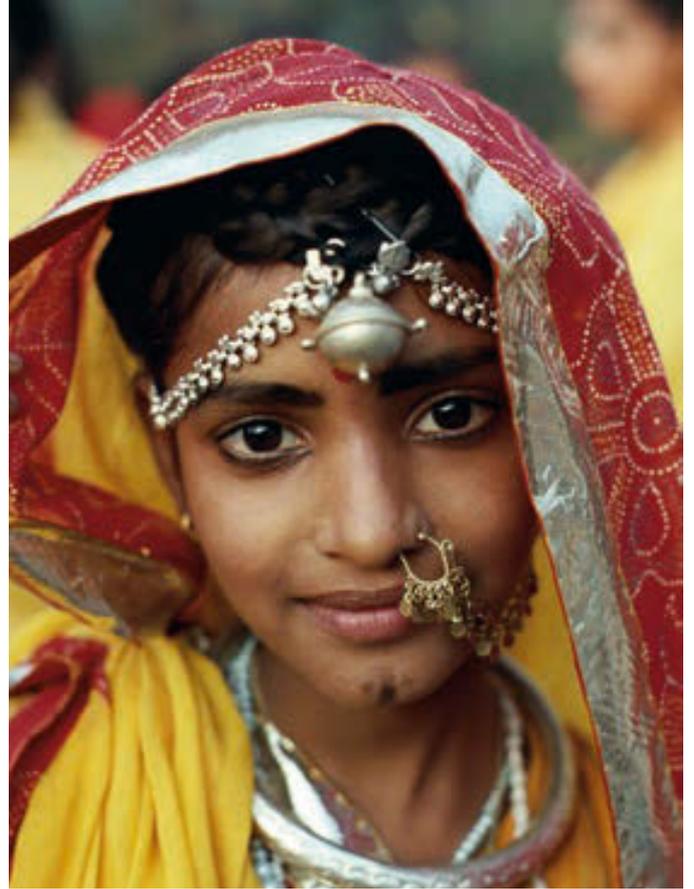
Source 2 A wedding in an Indian village today continues old traditions. The bride is washed in front of a sacred Mahuwa tree, known as the 'tree of life'. The tree provides edible fruit, wood, oil (pressed from seeds), flowers, fertiliser (seed husks) and alcohol (made from fermented flowers).



Clothing and jewellery

Cotton was grown in ancient India by Indus Valley farmers. Fabric made from cotton was cool to wear in India's climate. It was used to make the *saris* (the Sanskrit word for 'cloth') worn by women, and the *dhoti* worn by men. Both these garments were a single piece of cloth wound in different ways around the body. Men wound the *dhoti* between their legs to form loose pants. Some men also wrapped a length of fabric around their head to form turbans.

Saris later became vibrantly coloured garments, especially for young women; for wealthy women, they were often made from richly decorated silk. Typically, lots of jewellery was worn by those who could afford it.



Source 3 A single piece of cloth is wound in different ways to form a *dhoti* (worn by men) and a *sari* (worn by women).

Source 4 A young Indian woman dressed in a traditional sari



Education

During the Indus Valley (Harappan) civilisation, formal education was limited to the upper castes. Education focused on the Sanskrit language and religious training, such as learning the Vedas and ritual practices. Traditionally, students lived and studied with their teacher, or *guru*, in a forest location away from towns, called an *ashram*. Education started as young as eight years, depending on a child's intellectual abilities. Upper-caste women were educated during the Indus Valley (Harappan) civilisation, and ancient Hindu scriptures provide evidence of women scholars who were teachers and took part in philosophical debates.

The sons of traders and merchants would be taught reading, writing and basic arithmetic in village schools, using their local dialect. Other boys and girls from the lower castes, the workers and farmers, would not have received any formal schooling.



Source 5 A student recites from the Vedas.



Source 6 A father and son perform the Upanayana or Sacred Thread ceremony. In ancient times, it marked the start of an upper-caste boy's formal education.

Check your learning 11.7

Remember and understand

- 1 Which caste (type of group or class) most commonly practised polygamy? Suggest a possible reason.
- 2 Why did the diets of ancient Indians change over time?
- 3 Who did not receive an education? Suggest a reason why.

Apply and analyse

- 4 What do you consider to be some of the most important differences between marriage and family life in ancient India compared to modern Australian culture?
- 5 Conduct research on the Internet to find out why cows are sacred to Hindus and followers of other religions.

Evaluate and create

- 6 Based on information in the text, draw a sketch of what you think an inside room of the home of a wealthy person in ancient India might have looked like. Compare and contrast your completed sketch with what you see in Source 1.
- 7 Use the Internet to find out more about what a *sari* and *dhoti* look like (such as their length, colours, decorative edges, how they are wrapped, etc.). Draw labelled sketches of each to show what you have learned.

11.8 Warfare

India's two epic stories, the *Ramayana* and the *Mahabharata* (created about 2300 years ago), both mention warfare. In these texts, war is viewed as an ethical 'fight for what is right', planned and executed with great skill. A carefully balanced mix of foot soldiers, cavalry, chariot troops and elephant troops helped to ensure this. This four-part mix was called the *Caturangabala*, very similar to the name of the Indian game of chess: *Caturanga*.

Throughout its history, India has fought many invaders. There has also been much internal conflict between warring kingdoms. Hence, there was a recognised need for a king to have a strong, stable army. This is where the warrior caste, Ksatriyas, fulfilled their role. It was not until the Mauryan Empire, though, that there was an army strong enough in India to unite much of the country.

Armies and strategies

The armies of India were among the first in the ancient world to fight using battle plans. They did not charge at the enemy in a random fashion, weapons drawn. Rather, they were arranged on the battlefield in quite elaborate ways. There were many battle formations used; two are shown in Source 1.

Army formations

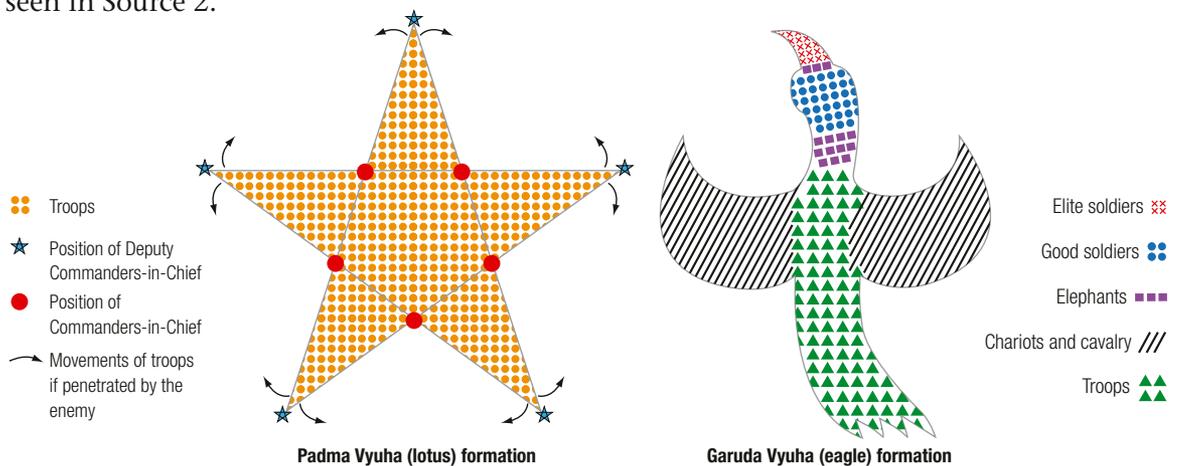
The Mauryan army was one of the biggest in the ancient world at that time. Each of its 10 large units, called *ani kini*, was made up of increasingly smaller fighting units, as seen in Source 2.



Source 2 Some battle units of the army in ancient India

A typical battle

An Indian king was a member of the Kshatriya caste and, by definition, a warrior. The aim of a king in ancient India was not only to keep his territory intact but also to increase it through conquest. When an army marched off to battle, it was followed by a long train of supply wagons, drawn by oxen.



Source 1 Two army formations used in ancient India



Source 3 An artist's impression of Alexander the Great defeating the Indian army of King Poros (and his elephant troops) at the battle of Hydaspes River in 326 BCE

The battle was fought in accordance with established customs and rules. The day chosen for the battle was usually preceded by a week of prayers in which the king participated. Fighting began only when the omens were favourable. The enemy was warned that a battle was about to start.

The battle typically began at daybreak, with the elephants plodding forward close together, providing cover for the infantry behind them. The king typically rode in the centre of the rearguard and the charge was sounded by conch shells, gongs and war drums. If particular fighting formations had been prearranged (see Source 1), these were put in place.

By common consent, fighting stopped at nightfall and was resumed at daybreak. These events were

marked by the call of instruments. After the battle, the corpses from the day's fighting were heaped on a series of funeral pyres, one for each caste among the slain.

After a victory, a king would typically:

- recite, before anything else, a hymn of thanksgiving to the gods, and distribute offerings to the Brahmins
- supervise the distribution of all the goods taken in the war, which included the enemy's women
- restore the defeated king to his throne, provided that he promised loyalty and support in return for mercy
- negotiate what was to be done with prisoners. Usually, they were made slaves for one year in the service of the conquering king.

Check your learning 11.8

Remember and understand

- 1 What was the four-part mix?

Apply and analyse

- 2 Why did some soldiers in the Indian army not wear metal armour? What would be the advantages and the disadvantages of this on the battlefield?
- 3 For an enemy force, what do you think would be the most terrifying part of facing an advancing Indian army? Discuss with a partner, giving reasons for your views.

Evaluate and create

- 4 Study the two army formations illustrated in Source 1. Remembering the four components of the ancient army of India, draw a labelled sketch to show how you think one of the following other army formations was arranged: *Mala vyhva* (garland formation), *Makara vyhva* (fish formation), *Kurma vyhva* (turtle formation) or *Vajra vyhva* (thunderbolt formation). Explain to a partner why you think your formation will work as a battle tactic.

11.9 Death and funeral customs

Customs related to death and funerals in ancient India were influenced by people's beliefs and traditions. Source 1 outlines what typically happened when a Hindu man died in Ancient India. Some of these rituals are still part of Hindu funerals in India today.

A period of mourning followed the funeral. For 10 days, after having a purifying bath, the relatives of the dead person did not work, nor permit anyone to work on their behalf. They did not have sex during this period (as they were 'polluted'). On the eleventh day after the funeral, the dead man's bones were



Source 1 A Hindu funeral in progress. The pile of wood is known as a pyre.

When close to death, the man was placed on the ground.

After death, professional undertakers cut the man's hair, beard, body hair and nails. They rubbed the body with perfumed oils and dressed it in new garments.

Professional mourners were hired to surround the corpse, wailing and crying while beating their chests and tearing at their hair.

The funeral procession moved to where the body would be cremated. The procession was followed by a cow chosen to be sacrificed.

The widow of the dead man was helped onto the pyre (a heap of wood for burning, see Source 2). She lay down by the side of her dead husband for a while before being helped off.

The priest placed sacred objects that belonged to the dead man next to his corpse, while relatives placed offerings on the pyre. The priest killed the cow and arranged its vital organs on the body.

Three fires were built around the pyre:

- at the north-west corner
- at the south-west corner
- at the south-east corner.

The nearest relative of the dead man (usually the eldest son) then lit the pyre.

The priest watched the pyre carefully to see which flames reached the corpse first because this would indicate the dead man's fortunes. It was a sign of supremely good fortune if flames from all three fires reached the corpse at the same time.

Source 2 Typical procedures for the funeral of a Hindu man in ancient India



Source 3 A 19th-century artist's impression of a wife burning with her dead husband on his funeral pyre – a practice known as *sati*.

collected from the ashes of the fireplace (now all picked clean by birds). They were placed in an urn, which was then buried in a cemetery or immersed in a holy river.

A ceremonial meal usually followed, after which the family gave gifts to the poor. Offerings were also made to the dead man (where his remains had been buried or placed in the river) so his soul would not linger in the world of the living as a ghost.

Sati

Around 400 CE, the practice of *sati* began to spread. The widow chose, or was forced, to be burned alive with her dead husband. By doing this, she was greatly respected as a pure woman and declared a 'true wife'. Her agonising death ensured that she, her husband and seven generations of her family would all go straight to heaven.

Check your learning 11.9

Remember and understand

- 1 **a** What tasks did undertakers perform?
b What tasks did professional mourners perform?
- 2 What would a priest observe if he declared that a dead man's family would experience supremely good fortune?

Apply and analyse

- 3 Why do you think Hindus cremate (burn) rather than bury their dead?

- 4 The practice of *sati* has been outlawed in India since 1829. Yet some Indian women, especially in rural areas, still choose to sacrifice their lives in this way. Record your thoughts about this situation.

Evaluate and create

- 5 You are visiting the family of an Indian friend from school on your holidays. While you are there, your friend's Hindu grandfather dies. Compose a letter home to your own family that describes what you see and hear about what happens at his funeral.

11C rich task

The legacy of ancient India

Ancient India has left many legacies for our modern world. As we have already seen, it was where Hinduism and Buddhism began. Ancient India also gave the world unique forms of architecture, art, music and dance – and a distinctive cuisine. In addition, the people of ancient India made astonishing advances in the fields of science and mathematics.



Source 1 A statue of the Indian astronomer and mathematician Aryabhata. He described the Earth as a sphere, rotating on its own axis and revolving around the Sun. This explained day and night and the seasons of the year.



Source 2 Our system of Arabic numerals is founded on a numeral system developed in ancient India.

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Creating and delivering an audiovisual presentation

You have probably created several PowerPoint presentations already. You may have also tried out some other audiovisual presentation software, such as Prezi, which is freely available on the Internet. Whichever program you choose, it is important to use it effectively and avoid some common problems of these types of presentations. Use the following steps to help you avoid these mistakes.

Step 1 Design your presentation

- Plan your presentation carefully so it has a clear beginning, middle and end.
- Make sure you present the content in a clear, concise dot-point form *not* as large slabs of text.
- Don't fill up your PowerPoint with lots of random pictures that are not related to the content. Make sure each visual is accompanied by a caption that explains why it is relevant to the presentation.
- A common mistake is to have objects and text moving on the screen in a way that just distracts the audience. Use graphics, sounds, video, animations and transitions only if they add value to the point being made, not just because you think they will look or sound good.
- Use a design that ensures your audience can clearly see and read the slides. Make sure there is enough contrast between the text colour and the background colour on the slide, and make sure your font size is large enough.

Step 2 Deliver your presentation

- When delivering a PowerPoint presentation to an audience, you should do more than just stand up and read out the text on each slide. Instead, talk in a way that develops and expands on the points on each slide. Carefully plan in advance what you are going to say during each slide. Record this plan on cue cards, and refer to these cards during your speech to remind you of what to say.



Source 3 Ancient followers of Buddhism and Hinduism gave the world magnificent examples of religious architecture such as the temple at Ellora, built during the Gupta Empire.

- One thing at a time! At any moment, what is on the screen should be the thing you are talking about. Your audience will quickly read every slide as soon as it's displayed. If there are four points on the slide, they'll have read all four points while you are still talking about the first point. Plan your presentation so just one new point is displayed at any given moment. Navigate to the next point only when you are ready to talk about the next point.
- Speak clearly – not too fast, not too slow. Vary your tone and pitch to make your presentation more interesting.
- Make eye contact with different members of your audience. *Do not* just look down at your cue cards.

Apply the skill

- 1 Research, prepare and present an audiovisual presentation about a legacy from ancient India. Use the following questions to structure your presentation:
 - a Who invented it?
 - b When was it invented?
 - c How did it work?
 - d Why was it significant?
- 2 Your presentation should be well researched and based on relevant and reliable sources.

Extend your understanding

- 1 As you listen to the presentations of your classmates, complete the peer assessment proforma below. Ask your teacher to photocopy several copies so that you can complete one for each presentation you listen to.

| Name of presenter: | | Name of person completing peer assessment: |
|----------------------------|--|---|
| Component of presentation: | What did the presenter do well in this regard: | What could the presenter improve upon in this regard? |
| PowerPoint design: | | |
| Oral presentation: | | |

- 2 Give each classmate your completed peer assessment. Collect the peer assessments that your classmates completed as they listened to your presentation. Read their feedback and then complete a short self-assessment by responding to the following questions:
 - What did I do well in terms of my PowerPoint design?
 - What could I improve in terms of my PowerPoint design?
 - What did I do well in terms of my oral presentation?
 - What could I improve in terms of my oral presentation?

Depth study 2: Investigating one ancient society

Ancient China

Like many of the earliest **civilisations**, such as ancient Egypt and ancient Greece, ancient China had its roots in farming.

By about 8000 BCE, people were growing crops such as rice and millet (a type of grain similar to wheat) in the fertile valley of the Yellow River. Over time, villages formed out of these farming settlements, some eventually became cities. Beliefs and art forms developed, and over generations, China's society became very highly organised. Its written language was common across the country, as were its social and cultural values. China developed into one of the world's most culturally rich and significant civilisations, and it continues to be to this day.



12A

How did physical features influence the development of ancient China?

- 1 Ancient China had geographical features that protected and isolated its society from contact with others. How do you think this might have influenced China's development?

12B

What shaped the roles of key groups in ancient China?

- 1 Ruling dynasties headed the society of ancient China. These were powerful families that passed down their wealth and status to the next generation. What might have led to the downfall of one dynasty and the emergence of another?



chapter 12

Source 1 Hundreds of terracotta warriors were found in the tomb of Emperor Qin Shi Huang of the Qin Dynasty.

12C

How did beliefs, values and practices influence ancient Chinese society?

- 1 Emperor Qin Shi Huang of the Qin Dynasty (221–206 BCE) was buried in a tomb ‘protected’ by terracotta soldiers. What does this tell us about the ancient Chinese belief in the afterlife?

Investigating one ancient society

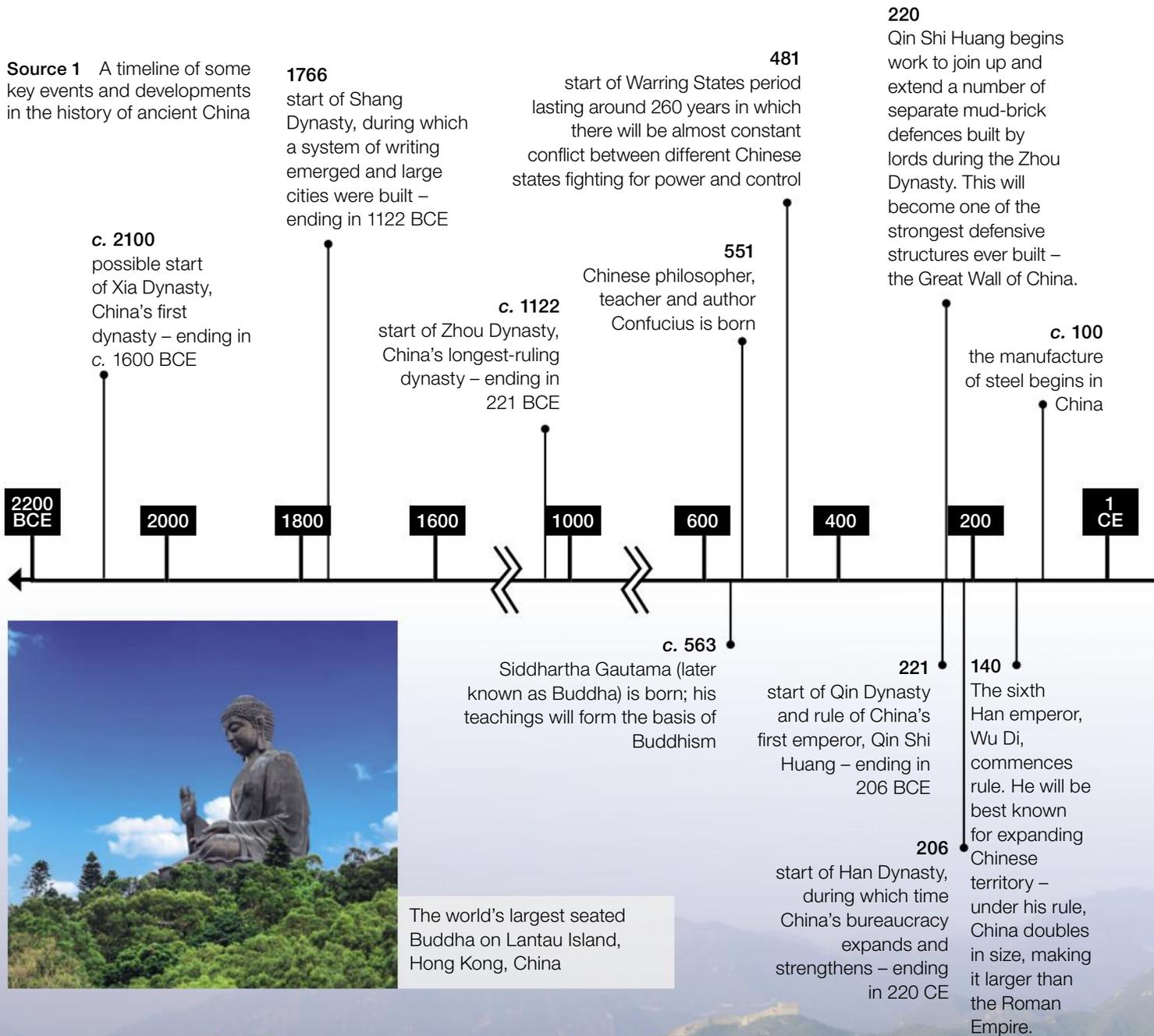
This depth study offers a choice of five topics:

- Ancient Egypt
- Ancient Greece
- Ancient Rome
- Ancient India
- Ancient China

You must choose AT LEAST ONE of these topics for study.

12.1 Ancient China: a timeline

Source 1 A timeline of some key events and developments in the history of ancient China



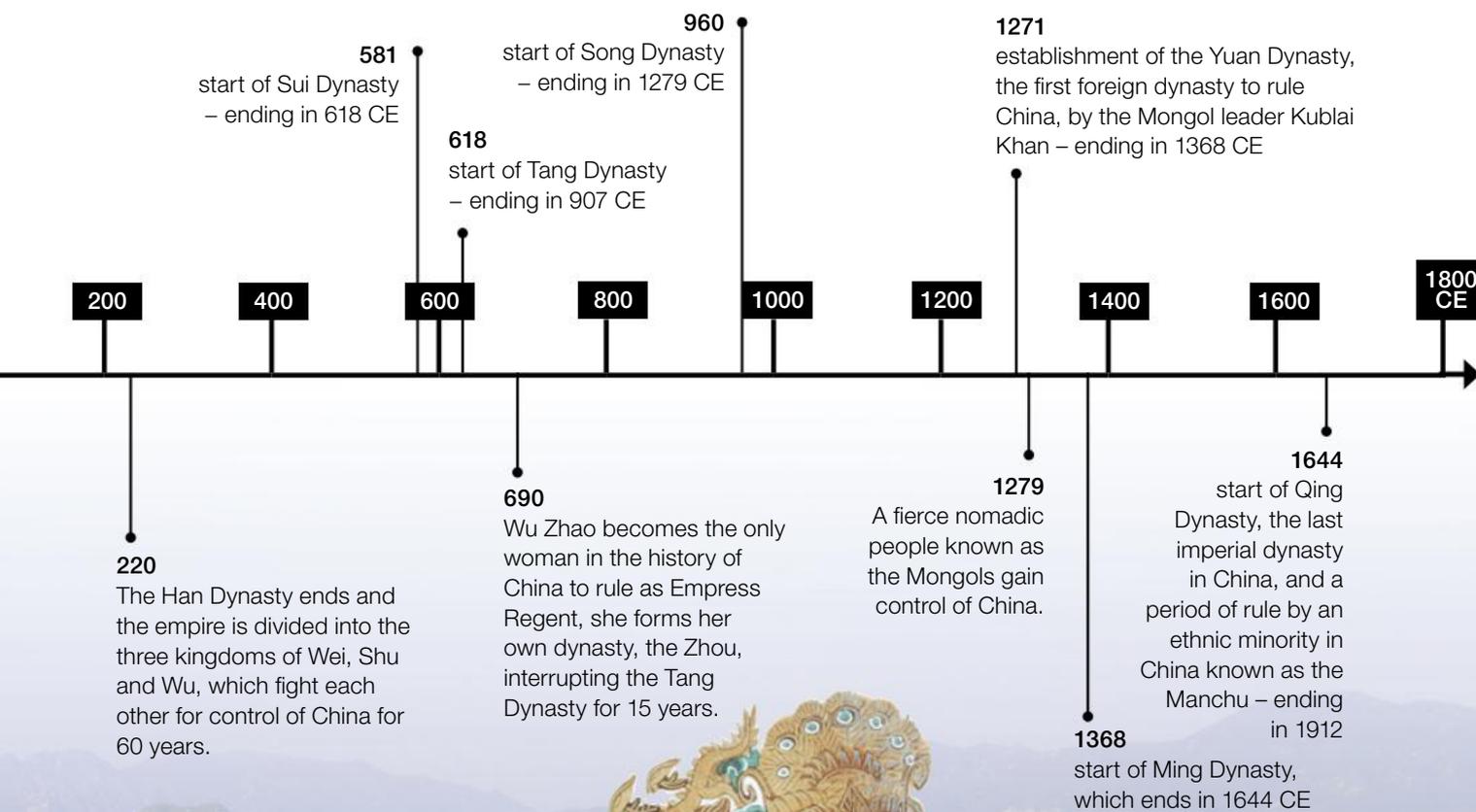
The world's largest seated Buddha on Lantau Island, Hong Kong, China

12A How did physical features influence the development of ancient China?

| Pronunciation guide | |
|---------------------|------------------------|
| Chinese name | English pronunciation |
| Qin | <i>chin</i> |
| Qin Shi Huang | <i>chin sheh hwang</i> |
| Qing | <i>ching</i> |
| Sui | <i>sway</i> |
| Wu Zhao | <i>woo jow</i> |
| Xia | <i>sya</i> |
| Zhou | <i>joe</i> |



An artist's impression of Kublai Khan, founder of the Yuan Dynasty



An artist's impression of Wu Zhao, China's only empress



Check your learning 12.1

Remember and understand

- 1 When and what was the Warring States period? What happened during this period?
- 2 Who was the first emperor of China and which world-famous structure was he responsible for building?
- 3 Which was the first foreign dynasty to rule in China and who started it?

12.2 Landscape and climate

Modern China is the world's third largest country after Russia and Canada. It covers an area of 9.6 million square kilometres. Despite its size, China began as a small settled area in the Yellow River valley. From small beginnings, it grew to just over half its current size by 220 BCE. Much of ancient China's history was shaped by its geographical features. These features acted as natural barriers that kept China isolated from the rest of the world for many thousands of years.

China's river systems

China has two major river systems – the Yellow River and the Yangtze River. The early people in China settled mostly along these two rivers. Different settlements were ruled by individual kings. These rivers were essential to the development of ancient Chinese society.

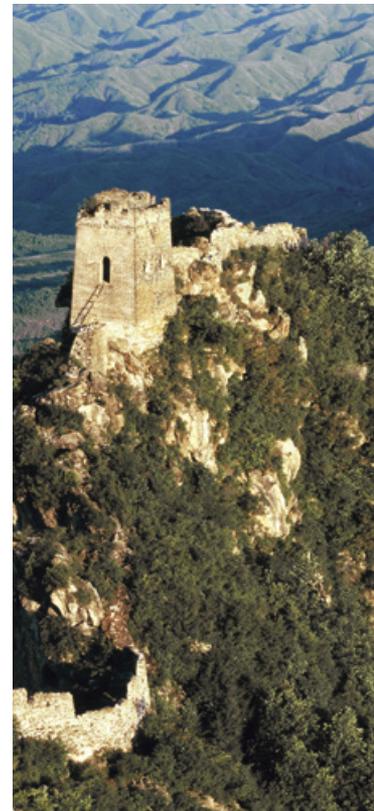
The Yangtze is 6380 kilometres long, making it the third longest river in the world. It floods each year and leaves fertile soil along its banks. The Yangtze was not an easy river to cross, and for this reason there were many times in the history of ancient China where it operated as a political boundary between northern and southern China. The riverbanks were the sites of several battles during the history of ancient China.

The region of the Yangtze became very important to ancient China's economy, especially during the time of the Han Dynasty (206 BCE–220 CE). The development of irrigation systems along the Yangtze made agriculture very stable and productive. Eventually, this region became one of the wealthiest and most developed parts of the country.

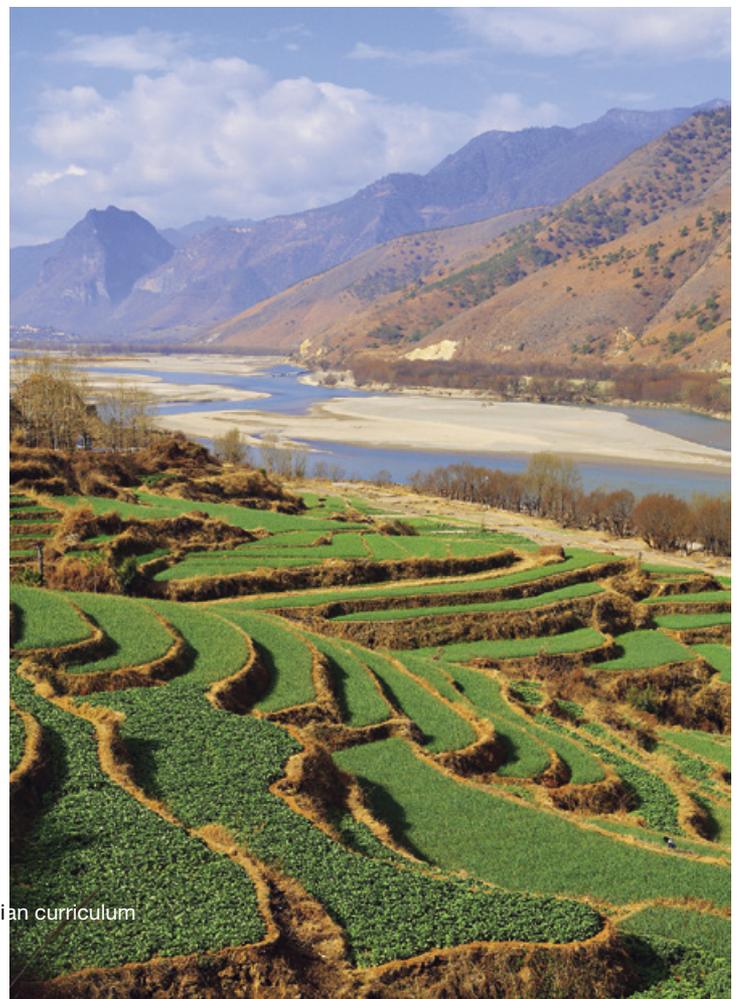
The Yellow River is 5464 kilometres long, making it the sixth longest river in the world. The banks along the Yellow River are low. Because of this, settlers in ancient China often saw their homes destroyed year after year during flood season. For this reason, the early people of ancient China called the Yellow River 'the Great Sorrow'. Eventually, however, the people learnt techniques to control flooding.

The Yellow River basin is mostly flat, which makes it ideal for growing crops such as millet (a type of grain). Much of the Yangtze basin and surrounds, on the other hand, are better suited to growing rice and tea.

Source 2 A section of the Yangtze riverbank used to grow rice crops



Source 1 A section of China's Great Wall showing some of the steep mountain terrain





Natural barriers and geographical features

China's natural barriers to the west, south and east helped to protect the ancient Chinese people from invasion and kept them very isolated. The largest ocean on Earth, the Pacific, is to its east. To the south are dense tropical forests of modern-day Burma, Laos and Vietnam. To the west and north-west are huge deserts.

To the south-west is one of ancient China's most impressive physical barriers – the towering Himalayas, which are home to several of the highest mountain peaks in the world. The Himalayas are extremely cold in winter and extremely hot in summer, which in the past made it almost impossible for invaders to cross them and reach China.

Only China's northern border is less protected by geographical features. Over 2000 years ago, work began (and was later continued) to protect much of this frontier with a huge defensive structure – the Great Wall of China (see Source 1).

Check your learning 12.2

Remember and understand

- 1 Why did the ancient Chinese call the Yellow River 'the Great Sorrow'?
- 2 How did the development of irrigation systems affect the people living by the Yangtze?
- 3 Explain how geographical features helped to isolate China from the rest of the world for a long time.

Apply and analyse

- 4 What impact do you think ancient China's isolation would have had in shaping the society of the people who lived there?

Evaluate and create

- 5 Which of China's surrounding barriers (natural and built) do you think would have posed the greatest challenge for an invading force? Justify your opinion. Suggest what an invading force might have had to do to overcome this obstacle.

12A rich task

China's geographical features

China is the third largest country in the world, with a land area of about 9.6 million square kilometres. Close to 70 per cent of its land surface consists of rugged mountains, **plateaus** and hills. The other 30 per cent is made up of river basins and lowland plains, which is where most of the Chinese people settled.



Source 1 Geographical features in China, such as mountains and rivers, had a big influence on where people settled.

skilldrill

Analysing a map

Maps are geographical representations of all or part of the Earth's surface. They show a group of features in terms of their relative size and position. They use a system of symbols, governed by a set of conventions (accepted rules), to communicate a sense of place. You may think that maps are only useful in geography, but they are also an important source of primary information for historical inquiries. It is therefore important to understand and analyse maps, so that you can use information from them as evidence in your historical inquiry.

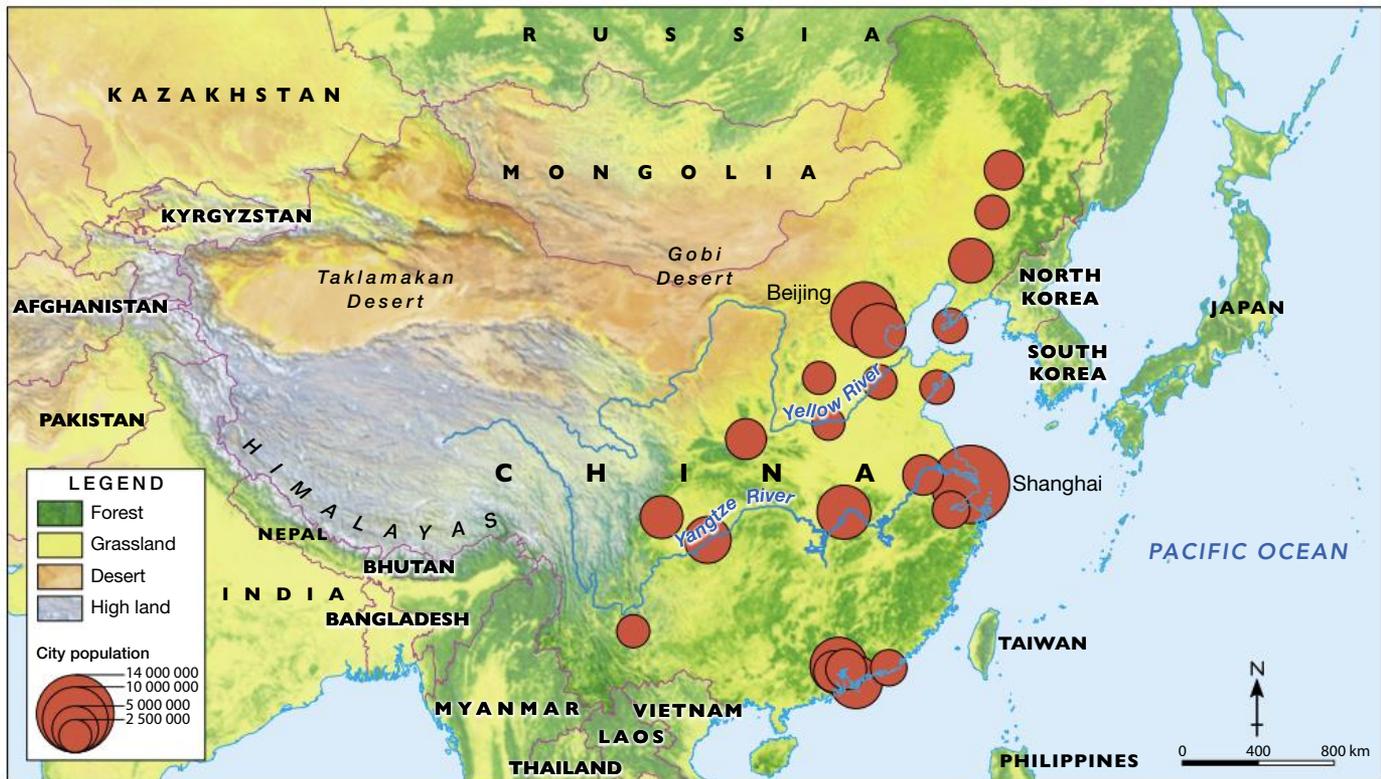
Use the list below to help you understand the information provided on maps:

- **Orientation** – It is a convention for cartographers (map makers) to place a north point on maps. This helps the reader to work out position and direction.
- **Title** – Like a newspaper headline, the title of a map should tell the reader 'what', 'where' and 'when' about the map. The date should help the reader fit the map into its proper chronological period. Note: the date in the title may not be the date the map was constructed.
- **Legend** – This is a key that explains the symbols used by the cartographer. To visualise reality, you need to be able to convert various shapes, colours and textures into the features they represent.
- **Scale** – This is the proportion of map to ground. It helps the reader to judge actual distances. Scale is most often shown as a linear measure (e.g. 1 centimetre on the map represents 100 kilometres of actual distance).
- **Grid** – Maps often show parallels of latitude and meridians of longitude, so that the area can be placed in its proper geographic location on the globe.

Apply the skill

- 1 Look carefully at Source 2 and use the legend to identify the different landscapes and physical features of modern-day China. Jot down all your observations in point form.
 - a Note the different landscapes and geographical features shown on the map. How many are there? Which of these features act as natural barriers?

PHYSICAL FEATURES OF PRESENT-DAY EAST ASIA, INCLUDING CHINA



Source 2

Source: Oxford University Press

- b Which areas of the map would have been the best sites for farming in ancient China? Why?
 - c Do you think the areas of cropland today are different from those in ancient China? Why?
 - d Which geographical feature do you think was most influential in the development of ancient Chinese society? Why?
- 2 Using the information you have gathered from the map, write a paragraph of 150 words explaining what you conclude about the geographical features of China. How have they influenced settlement patterns and borders?

Extend your understanding

- 1 Create your own map of East Asia.
 - a In your notebook, copy (or trace) the main elements of the map in Source 2. Include the main countries and their borders, major rivers, deserts and mountains. Make sure you also include BOLTSS – border, orientation, legend, title, scale and source.
 - b Use an atlas or an online map to locate the Great Wall of China. Think of an appropriate symbol or legend to represent this feature, and then add it to your map.
- 2 Look again at Source 2. Start at any point on the Chinese border. Extend a ruler from this point, in any direction, to another point on China's border. This represents the journey you will travel. In order, list all the physical features and landscapes you will cross as part of your journey. Conduct extra research if you need to. Which feature do you think will represent the greatest challenge, and why?

12.3 Chinese dynasties

For thousands of years, ancient Chinese society was ruled by a succession of dynasties. A dynasty is a system of government in which rulers pass on their titles and power to a member of their family, usually when they die. Dynasties often began after a battle for power between rival warlords or kingdoms; the ‘winner’ became the new emperor and started a new dynasty. The palace complexes in which ruling families lived were highly organised social units. Everybody from the emperor down to the humblest servant had a role to play. This order within the palace complex was also reflected in general society.

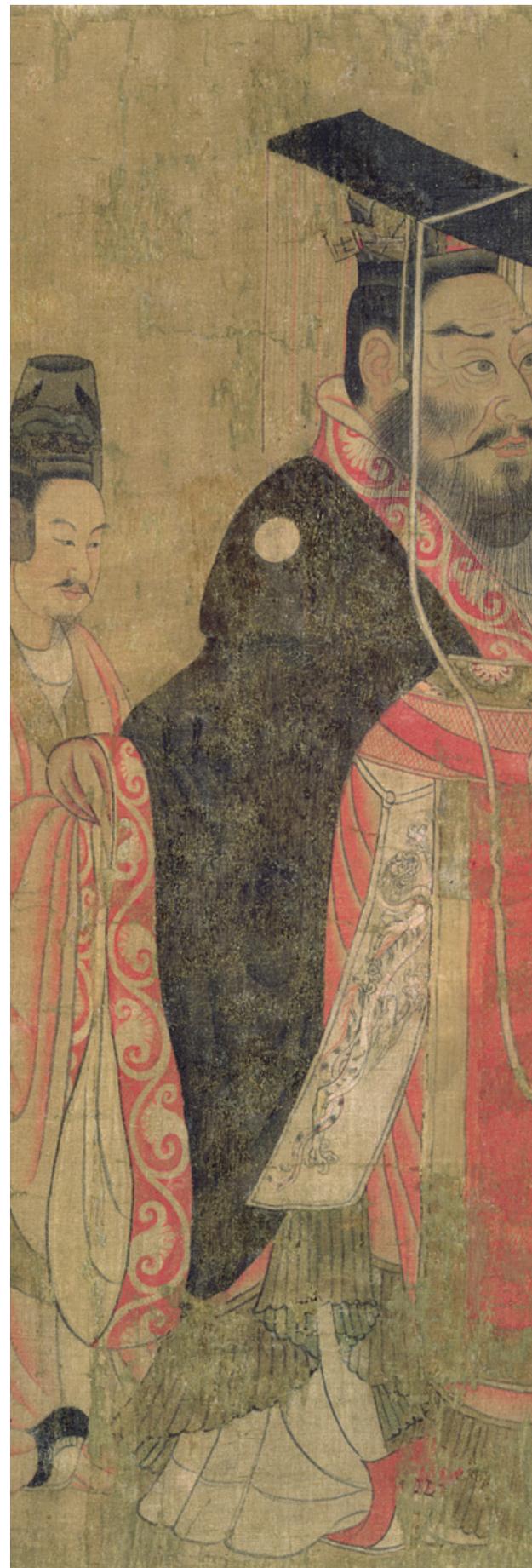
The top social group in ancient China was the imperial family – the ruler’s immediate family and relatives. For much of China’s history, these families were part of ongoing dynasties. Imperial families were a very wealthy and privileged group. Before 221 BCE, Chinese rulers were known as kings. After this time, rulers became known as emperors. All Chinese emperors, except for one, were male.

The Shang Dynasty (c. 1766–1122 BCE)

The Shang were one of the first ancient peoples to settle along the banks of the Yellow River. They learnt to use chariots and conquered the entire Yellow River valley. They began China’s first dynasty, which went on to rule China for over 600 years.

The Shang built China’s first cities. Their largest city was the capital, Anyang. The Shang divided their cities into sections for different craft workers. Potters, for example, lived in one section, while weavers lived in another. Most Shang, however, were farmers who lived outside the city walls and grew wheat, rice and millet in fields along the river. The Shang rulers, who owned all the land, introduced a system that allowed local people to live and work on the land in return for taxes (in the form of money, military support or food). This system became known as **feudalism**.

The last Shang king was a cruel ruler. Around 1122 BCE, a people from western China overthrew the king and conquered the Shang kingdom and started a new dynasty. They were known as the Zhou.



Source 1 Emperor Wu Di of the Han Dynasty (206 BCE–220 CE), attended by two courtiers (attendants)



Source 2 A cracked oracle bone discovered in the ruins at Anyang, China. Oracle bones such as this were used to predict events and have told historians much about key groups in ancient Chinese society – particularly during the Shang Dynasty (c. 1766–1122 BCE).



Source 3 A bronze statue of Confucius at Confucius Temple in Nanjing, China

The Zhou Dynasty (c. 1122–256 BCE)

The Zhou went on to build a large empire in China and ruled for over 800 years. To rule their empire, Zhou kings strengthened the system of feudalism developed by the Shang. They divided their kingdom into hundreds of smaller states. Each state was ruled by a noble who promised loyalty to the king, and agreed to pay taxes on the land and send the king soldiers in times of war. The nobles, in turn, divided their land among the peasants, who were allowed to live and farm on it as long as they paid taxes in the form of grain and agreed to serve as soldiers in times of war.

The Warring States period

From around 700 BCE, the Zhou kings struggled to maintain control over the nobles, who began to build their own armies and use them to take over smaller states. Between 481 and 221 BCE, the states were almost constantly at war with one another. For this reason, it became known as the Warring States period. In the beginning, around 200 states were at war with one another, but by 300 BCE only seven warring states came to dominate. They were the Qin, Han, Wei, Zhao, Qi, Chu and Yan.

During this time of civil war (a war between groups within the same country), a great teacher appeared in China by the name of Confucius (551–479 BCE). Confucius was saddened by the fighting, and tried to show people how to live together in peace. His teachings went on to have a lasting influence on Chinese Society.

By 256 BCE, the Zhou king lost power and the kings of the seven warring states each ruled in their own right. They continued waging war until the Qin conquered the other states in 221 BCE and reunified China as one empire.

The Qin Dynasty (221–206 BCE)

Ying Zheng, ruler of the state of Qin, defeated the last of the six other states in 221 BCE. He declared himself the first emperor of a unified China. To mark the occasion, he changed his name to 'Qin Shi Huang', which meant 'first magnificent god of the Qin' (see pages 340–341).

Although the Qin Dynasty did not last for as long as many other Chinese dynasties, it is significant because of the many long-lasting reforms it introduced, such as a strong centralised government, the standardisation of weights and measures, and a unified monetary system. It also standardised the Chinese script, and developed an extensive network of roads and canals, which improved trade between the provinces.



Source 4 A bronze *ban liang* coin – which was part of the unified monetary system introduced during the Qin Dynasty

The Han Dynasty (206 BCE–220 CE)

The Han Dynasty was one of China's longest ruling dynasties, lasting for four centuries. It was broken only by a brief takeover by the Xin Dynasty between 8 CE and 25 CE. It began when a rebel army, led by the popular but poor peasant Liu Bang, overthrew the remains of the Qin Dynasty.

Liu Bang became the first Han emperor, renamed Gao Zu. His sense of fairness and his reforms eased much of the suffering and fear the Qin had imposed on the people. He set up an academy for examinations where those who studied could become eligible for appointment to positions in society based on merit (talent and skill) rather than who their parents were. In fact, the centralised and efficient state created in China under the Han Dynasty provided a model for China for the next 2000 years. It saw a new emphasis placed on reward for effort. Social status became linked to learning.





Source 5 A 17th-century artist's impression of Han emperor Ngai (6–1 BCE) presiding over his court

Other achievements of the Han Dynasty

During the Han Dynasty, China's first full-time army was created. The arts and sciences flourished and there were many inventions. Trade increased, boosting the size of many cities. The Han capital, Chang'an (now Xi'an), built after Qin Shi Huang died, remained China's capital for 1000 years.

A census was conducted in China in 2 CE. It confirmed a population of 55 million, about eight times that of the ancient Roman Empire.

Prosperity and strength peaked under the sixth Han emperor, Wu Di (see Source 1), who lived from 140 to 87 BCE. By then, Confucianism was almost China's official 'religion'. Education was encouraged and a new social class was emerging. These were men whose qualifications and abilities earned them a career in the public service. Their status was gained through learning, not wealth or birth. For instance, the chancellor appointed in 124 BCE, Gongsun Hong, had once been a pig breeder.

Check your learning 12.3

Remember and understand

- 1 How did dynasties usually begin and end in ancient China?
- 2 Which dynasty was responsible for building the city of Anyang, and how long was this dynasty in power for?
- 3 Explain how the Warring States period began.
- 4 In what year did an ancient Chinese ruler first call himself 'emperor'?

Evaluate and create

- 5 Conduct some further research into one of the Chinese emperors mentioned in this section. Use what you have learnt (and your imagination) to write an account of a day in the life of this emperor.

12.4 Significant individual: Qin Shi Huang

Early life

As a child, Qin Shi Huang was known as Ying Zheng. He was born in the state of Qin in north-western China in 259 BCE. At the age of 13 he was formally declared the king of Qin, which at the time was the most powerful of all the Chinese states. As a child, Zheng ruled Qin with the help of a regent (a person who acts as head of state if the true ruler is too young, too ill or missing).

In 238 BCE, at the age of 21, Zheng took power in his own right. During the Warring States period, Zheng used the military strategy and force of his generals and troops, along with espionage and bribery, to ultimately overpower all the other six kingdoms. By the time he had taken control and united these states in 221 BCE, he was 38 years old. The victory unified a country that had been divided by wars between rival kingdoms for 260 years and created a unified empire. In the same year, Ying Zheng declared himself China's first emperor and changed his name to 'Qin Shi Huang', meaning 'first magnificent god of the Qin'.

The empire's new government

To strengthen his hold over his new empire, Qin Shi Huang divided the conquered states into 36 prefectures (administrative divisions), each with a governor in charge who answered to him. He forced the nobles who had ruled over the states to live near him at the capital, Xianyang. There he could watch over and control them.

Qin Shi Huang did much to organise, unify and protect the new empire. He was an autocrat (ruler with total power) but a very clever manager. Before Qin Shi Huang, each state had its own code of laws. Qin Shi Huang set up one code for all of China. He also built good roads connecting the provinces to his capital. The code of laws and system of roads helped to keep the empire united. He also planned and began work building the Great Wall of China.

Source 2 An artist's impression of emperor Qin Shi Huang travelling in a litter (a vehicle consisting of a couch, often covered or curtained for privacy, suspended on poles and carried by servants)



Source 1 An artist's impression of Qin Shi Huang, painted during the 19th century





Source 3 Some of the thousands of excavated terracotta warriors guarding the tomb of Qin Shi Huang

Qin Shi Huang's iron rule

Despite his many positive achievements, Qin Shi Huang was also a very fierce leader who was feared by his people. He took steps to prevent rebellion in his empire. Believing that knowledge about the past was dangerous, as were ideas that encouraged free and independent thinking, he banned the teachings of Confucius. He ordered books and writing that did not support his ideas to be burned. Scholars found reading the works of Confucius were killed or enslaved. About 460 scholars were buried alive for the crime of owning banned books.

Qin Shi Huang also taxed the people heavily and forced them to serve in the army and work on his projects.

Such behaviours eventually angered his people. Qin Shi Huang began to fear he would be killed. Perhaps because of this, he became more isolated and more obsessed with his death. He began to drink substances that he hoped would give him eternal life, such as mercury, which we now know is poisonous.

He died while on a journey during a hot summer in 210 BCE. He was buried in an elaborate tomb, prepared for him during his life. He was 'protected' by an army of over 7000 life-size terracotta soldiers, horses and chariots.

Qin Shi Huang's key achievements

- Introduced a common currency, common weights and measures, and a common language throughout China (based on the same 3000 characters)

- Built grand public buildings and palaces

- Made significant progress on the planning and construction of the Great Wall of China

- Built a network of canals and bridges to connect the provinces

- Ordered carts to be built with the same wheel axle width in order to make travelling on roads within the empire easier

Source 4 A selection of Qin Shi Huang's key achievements during his reign

Check your learning 12.4

Remember and understand

- 1 Where and when was Qin Shi Huang born?
- 2 What is a regent?
- 3 What were some of the first things Qin Shi Huang did in order to organise and strengthen his new empire?

Apply and analyse

- 4 Draw a concept map based on Source 4, expanding on some of the effects you think Qin Shi Huang might have had on China.
- 5 Given that he introduced so many reforms, why do you think Qin Shi Huang was so fearful for his life?
- 6 List at least three reasons why you think Qin Shi Huang is regarded as a historically significant figure.

12.5 Key groups in Chinese society

Ancient Chinese society was based on a strict social hierarchy. This social structure was reinforced by the ideas of Confucius, who taught that a society could not be successful without strict social order and discipline. People in each social group knew what was expected of them and how to respect one another. The Chinese also strongly believed in the wisdom of the elders and, because of this, older people were greatly respected.

At the top of the social hierarchy was the ruler and his family. From 221 BCE, the ruler was known as the emperor. Below the imperial family there were four social groups – the nobles and officials; farmers; artisans and craftsmen; and merchants and traders.

The emperor and imperial family

The ruling families of ancient China lived in luxurious palaces. The emperor owned all the land, but might choose to give some to nobles.

Food (including meat) was plentiful for imperial families, as were treasures and embroidered or painted silk garments. Leisure time might be spent drinking tea or rice wine, while being entertained by palace dancers and musicians, or playing board games.

The *shi* – nobles and officials

Nobles often included the emperor's relatives, top army commanders, very wealthy landowners and conquered lords of former kingdoms. They, too, led privileged lives, often in palaces of their own. Sometimes their 'homes' were located within the emperor's palace complex. There they mingled with government officials who administered laws and managed tax collections. There were also concubines (women kept for the entertainment and pleasure of the emperor) and eunuchs (men who had their testicles removed as boys and were often employed to guard rulers' wives). One or two highly trusted eunuchs might be advisers and confidants of an emperor.

Officials were another group that held high social status in ancient China. Boys whose families could afford to send them to school began their education at an early age in the hope of becoming officials. To do so they were required to pass a difficult exam. If they did not pass, however, they were usually still able to find jobs as they were considered well educated.

The *nong* – farmers

Farmers were a poor group, but were highly respected for the work they did to feed the population. Most farmers led simple lives. They worked very hard and rarely had a day off. Men worked in the fields in very harsh conditions, during both the hot summers and the bitterly cold winters. The harsh conditions could also ruin their crops and land. If the crops were ruined, poor farming families had very little to survive on during the winter. Women sometimes helped in the fields but mainly worked in the home, sewing and weaving cloth. This provided clothes for the family. Some of the things they made were sold to earn extra money.

Farmers could live on the land in return for working on it. They also paid heavy taxes (in the form of crops, such as rice) and provided other services when required. These might have included serving as soldiers or working on building projects.

The *gong* – artisans and craftspeople

Artisans and craftspeople were also a mostly poor group, but were well regarded for their skills and labour in producing what people needed. This group included painters, carpenters, potters and jewellery makers. Their skills were usually handed down from father to son. Successful and highly skilled artisans were able to expand their businesses by taking on apprentices and additional workers. Artisans earned more than farmers but less than merchants.

The *shang* – merchants and traders

The merchant class included traders, animal breeders and moneylenders. They were a wealthy group, but were considered the lowest social class in ancient China. People believed that they did not contribute to the good of the whole society but only worked for their own gain. Some merchants would buy land to farm to improve their social status.

Check your learning 12.5

Remember and understand

- 1 Why did the ancient Chinese have so much respect for their elders?
- 2 How did the ideas of Confucius reinforce the strength of the social hierarchy in ancient China?
- 3 In your notebook, match the Chinese words that describe social roles (*nong*, *gong*, *shang*, *shi*) with these occupations: merchant, farmer, official, artisan.
- 4 What other jobs might farmers in ancient China have been asked to do?

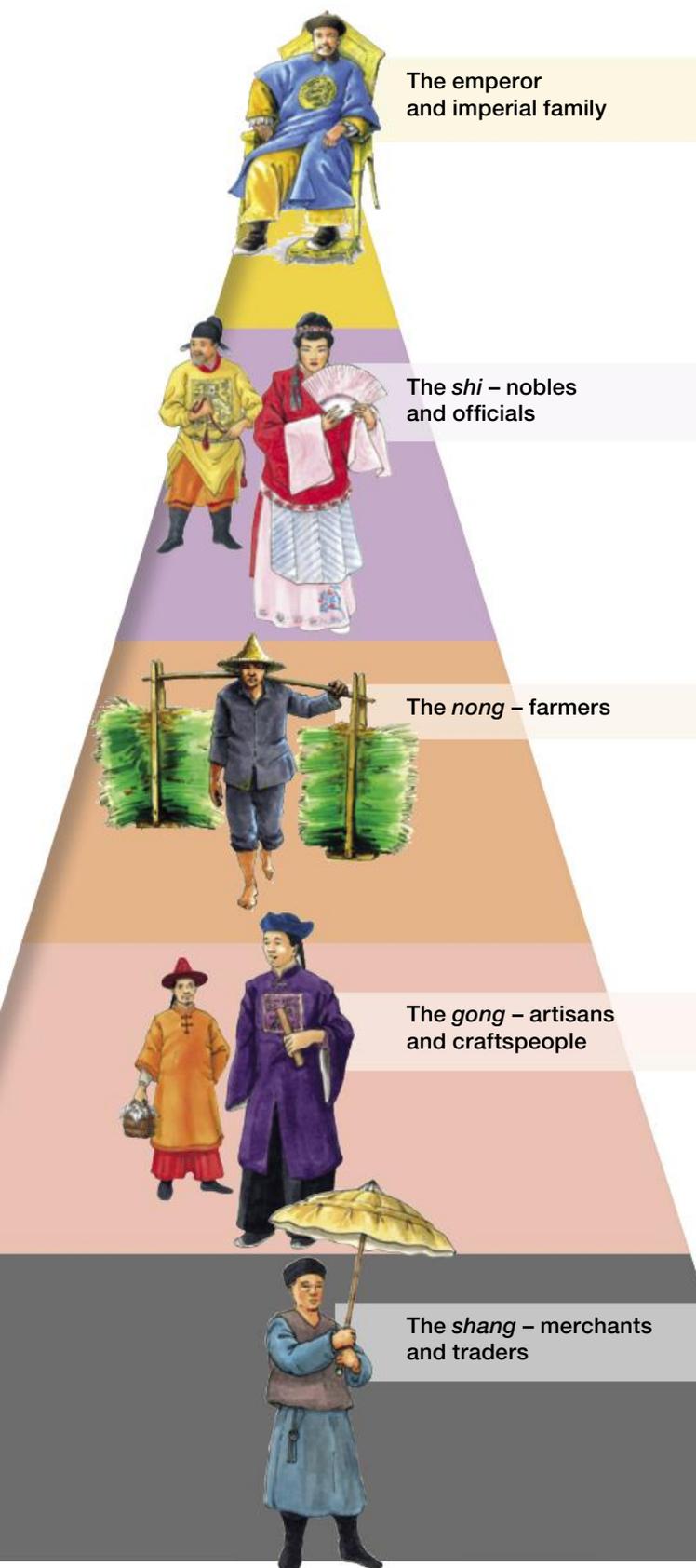
Apply and analyse

- 5 Do you think farmers, though poor, felt valued within ancient Chinese society? Explain your answer.

Evaluate and create

- 6 In small groups, present a role play for the class about some aspect of life in ancient China that clearly shows the roles and responsibilities of different social groups. Share the tasks involved in planning the presentation: writing the script, preparing a backdrop, creating costumes and rehearsing.
- 7 Select any two figures from Source 1. With a partner, write a short dialogue between the characters. Present it to the class orally. Your dialogue should reflect the differences between the social roles of the figures you select, not only in the words used but also the tone of voice and body language.

Source 1 The social hierarchy of ancient China and the key social groups within it



12.6 Women in ancient China

Women in ancient China were seen as being lower than men in the social hierarchy. They were expected to do what their fathers and husbands said. Women who pushed against these restrictions were described in ancient Chinese records as ‘crowing hens’.

Women were rarely educated (wealthy women might receive some education) and had to marry the man their fathers chose. They also had to accept that their husband might have other wives and mistresses.

Poorer women typically cooked, cleaned, wove cloth, raised the many children they were expected to have, and helped out on the land if they were married to farmers.

Wu Zhao

One woman who did not conform to social expectations in ancient China was Wu Zhao, the only woman to rule the empire. She is a significant and historically important individual for this reason. She was born in 624 CE, during the Tang Dynasty (618–907 CE). Her family was rich and well connected socially. She was beautiful and clever.

At 14, she became a junior **concubine** of the emperor Taizong. Her beauty and intelligence soon attracted his attention, and his son’s. She was given privileges, which gave her insights into court procedures.

In 649 CE, the emperor died, so Wu Zhao was sent to live in a Buddhist nunnery, as was common practice for childless concubines. She almost certainly would have lived out her days there had it not been for the interest of Taizong’s son. He was now emperor Gaozong. He brought her back to the court as a more senior concubine, where she gave birth to two sons and a daughter.

The events that followed are contested by different historians. Some argue that her fierce ambition drove her to kill her baby daughter. She then blamed the murder on the empress and the most senior concubine. The emperor Gaozong believed Wu Zhao’s

keyconcept: Cause and effect

Foot binding

In ancient China, girls’ feet were bound because tiny feet improved a woman’s social status – and hence the status of her family. Bound feet, for a time, were essential for a ‘good’ marriage. Tiny feet were considered beautiful and were thought to make a woman walk more femininely. The practice began among the wealthy but became more widespread. A poor girl might have her feet bound to improve her family’s social prospects.

Bones in a girl’s feet were broken and the feet were tightly strapped until she was fully grown. The U-shaped foot had all its toes but the big toe curled under the sole. The foot might be 10 centimetres long.

The effect of foot binding was to inflict great pain on a woman and leave her with lifelong disabilities. Walking more than a few metres was impossible. Poor women with bound feet had no choice but to work, so often did so on their hands and knees. Foot binding also made women dependent on their husbands and families, as they could not go very far beyond their home on their own.

For more information on the key concept of cause and effect, refer to page 166 of ‘The history toolkit’.



Source 1
The bound foot of a Chinese woman, photographed in 1992. Foot binding was abolished in the early 20th century, but was still illegally practised in some areas.



Source 2
This shoe was once worn by a wealthy Chinese woman

Wu Zhao's key achievements

- Introduced labour-saving techniques such as improved irrigation schemes to increase farming productivity
- Reduced taxes for farmers as an incentive to increase food production
- Introduced a system of workplace promotion based on merit, not social position or wealth
- Promoted the role of women as active contributors to society
- Established Buddhism as the preferred state religion and had many Buddhist temples built

Source 3 Some key achievements of Wu Zhao

story and made her his new empress. The other two women had their hands and feet cut off and were thrown down a well.

In 660 CE, Gaozong had a stroke, so Wu Zhao took over many of his duties. She had the intelligence, experience and skills to do so. When he died in 683 CE, she appointed one of her sons, Zhongzong as emperor, but he was too independent for her liking, so she forced him to give up the throne. She then appointed another son, Ruizong, over whom she had more control.

By 690 CE, Wu Zhao decided to stop being the 'power behind the throne'. She crowned herself empress regent and set up her own dynasty, the Zhou. This briefly interrupted the Tang Dynasty. In her old age, she was pressured to give the throne back to her son Zhongzong. She died in 705 CE, after controlling the empire for almost half a century.

Check your learning 12.6

Remember and understand

- Who was Wu Zhao? Why is this person such a significant figure in Chinese history?
- What social role could a poor woman expect in life in ancient China? Why?

Apply and analyse

- Draw a timeline to record some of the significant events in Wu Zhao's life.

Evaluate and create

- Conduct some further research into the ancient Chinese practice of foot binding. Using this research (as well as what you have learned from this section about women's roles in ancient China), with a partner, write and perform a dialogue between a poor farmer and his wife. The man wants his young daughter's feet to be bound. Empathise as you do this – think as people would have thought then, not as you think today. Be careful not to judge people by modern-day standards.

Source 4 An artist's impression of Wu Zhao



12B rich task

Qin Shi Huang

During the last years of the Zhou Dynasty (475–221 BCE), known as the Warring States period, the influence of the Zhou weakened and separate states developed. For 260 years there was almost constant conflict between these states, each of which sought to become the most powerful.

As you have learnt in this chapter, in 221 BCE the Qin king Ying Zheng was victorious and founded the Qin Dynasty. He changed his name to Qin Shi Huang and became one of the most famous – and infamous – emperors of ancient China. His main goal was to reunite China and restore peace and order. He achieved this, and much more, during his 11 years in power, yet the methods he used to do so are not considered admirable by all historians.



Source 1 Qin Shi Huang

skilldrill

Presenting a written point of view

A written point of view is a response to an issue or question that outlines your position on it. A good point of view will persuade the audience to agree with the position that is presented.

To write an effective point of view, use the following process.

Step 1 Make sure you have a very clear overall contention. Your contention is the overall position you are taking in your written piece; that is, what you are trying to get your audience to believe about the topic. For example, if you are writing about the issue or question of whether Qin Shi Huang was a good leader, your contention could be:

- Qin Shi Huang was a good leader.

OR

- Qin Shi Huang was not a good leader.

Step 2 Once you have decided on your overall contention, you need to plan the three main arguments you will put forward to support your contention. For each argument, you should also brainstorm related facts, evidence and examples.

Step 3 You are now ready to write your point of view. Use the following scaffold as a guide for structuring your piece.

For a detailed description of this skill, refer to pages 182–183 of 'The history toolkit'.



Source 2 Part of the terracotta army guarding Qin Shi Huang's tomb

Introduction

- Begin with a sentence or two that introduces the issue or question you are writing about.
- Provide some background information about the issue or question you are writing about.
- Include a clear and strong statement of your overall contention.
- Provide an outline of your three main arguments.

First body paragraph

- Begin with a clear topic sentence that outlines your *first* argument. (For example: 'First, Qin Shi Huang was a great leader because ...')
- Use the rest of the paragraph to provide the facts, evidence and examples that back up the argument you expressed in the topic sentence.

Second body paragraph

- Begin with a clear topic sentence that outlines your *second* argument. (For example: 'Second, Qin Shi Huang was a great leader because ...')
- Use the rest of the paragraph to provide the facts, evidence and examples that back up the argument you expressed in the topic sentence.

Third body paragraph

- Begin with a clear topic sentence that outlines your *third* argument. (For example: 'Third, Qin Shi Huang was a great leader because ...')
- Use the rest of the paragraph to provide the facts, evidence and examples that back up the argument you expressed in the topic sentence.

Conclusion

- Write a concluding statement that sums up the contention.
- Provide a summary of your key arguments.
- End with a strong last sentence that links points and leaves your reader with a lasting impression.

Apply the skill

- 1 Using information from 'Significant individual: Qin Shi Huang' on pages 330–331, and from additional sources, brainstorm all the positive and negative changes implemented by Qin Shi Huang in a table like the one shown. An example of each has been provided for you.

| Positive changes | Negative changes |
|-------------------------------|-------------------------------------|
| Began building the Great Wall | Taxed his subjects heavily of China |

- 2 Highlight or underline three changes from each column that you believe are the most significant changes implemented by Qin Shi Huang.
- 3 Your task is to write your own effective point of view in response to the following statement: 'Qin Shi Huang did what was necessary to make China strong.'
 - Do you agree or disagree? Decide on your overall contention. For example, 'Qin Shi Huang united China, but he caused unforgivable suffering in the process', or 'Qin Shi Huang helped make China a strong empire'.
 - Develop a plan for each of your three body paragraphs. Use the changes you highlighted in the table to develop the topic sentences that outline your arguments. In point form, brainstorm related facts, evidence and examples to back up each topic sentence.

Extend your understanding

- 1 Work with another student in your class who took a position different from yours. Share and compare your arguments. Identify the evidence that supports each argument. With your partner, make a final decision about which position is the most convincing.
- 2 Imagine that you are Qin Shi Huang near the end of his life, when he had become isolated, fearful and obsessed with his death. As Qin Shi Huang, write a letter that recounts some of the key moments of your leadership and explains some of your more controversial decisions (such as banning the teachings of Confucius).

12.7 Religious beliefs and practices

The civilisation of ancient China was influenced by a complex mix of beliefs, values and traditions. Some, such as Taoism, were religious; others, such as Confucianism, were more to do with behaviour. Closely tied in with these were many rituals influencing how people were buried, how they arranged their homes, how they drank their tea, and much more.

Ancestors had been worshipped by the Chinese since the Shang Dynasty, as had many gods and goddesses. Like the deities of many other civilisations, Chinese gods were believed to control the forces of nature, such as weather and natural disasters. People tried to keep their ancestors and the gods happy. Natural events – such as floods, earthquakes or crop failure – were taken as a sign that the gods were displeased. Rituals to ensure they remained happy included offerings of food and flowers at altars and the burning of incense.

Three dominant influences on ancient China's beliefs and values were Confucianism, Taoism and Buddhism. Judaism, Christianity and Islam were also introduced to China at various stages over its history, but were nowhere near as widespread.

Confucianism

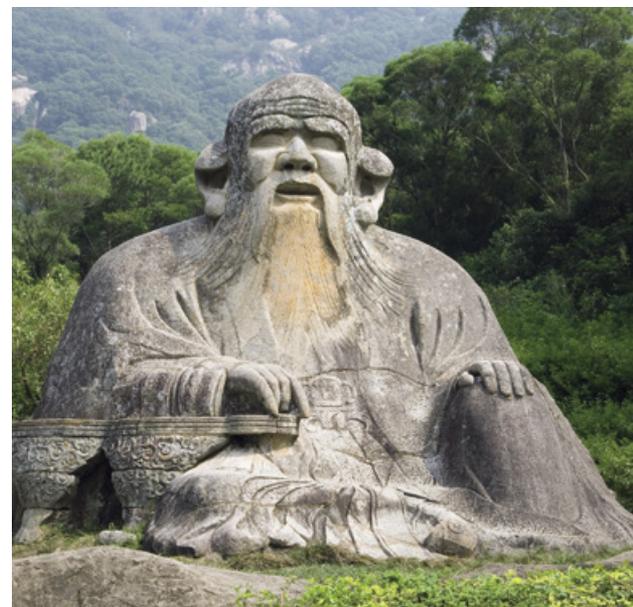
Confucius (c. 551–479 BCE) was born at a time of civil war in China. His fear was that this conflict would tear China apart. He developed a set of ideas, called Confucianism, that he thought would help. Confucianism was not a religion but a code of behaviour.

Confucius believed that people should be helpful, kind and honest. He told people to obey their rulers, honour their ancestors and respect ancient traditions. He said that rulers must be fair to their people. Confucius also taught that the family was the most important group in Chinese society. He said that family members should take care of one another. He taught that older members of the family should always be respected.

Confucius died in 479 BCE, but his students kept his teachings alive. Later, Confucianism spread throughout much of Asia. Today, people in China, Japan, Korea, Vietnam, Taiwan and other Asian countries follow the teachings of Confucius. Many of his sayings are known all around the world.



Source 1 An artist's impression of Confucius advising on the best course of action for a criminal offence



Source 2 A statue of Lao-Tzu



Source 3 A statue of Buddha carved from rock, Fengxian Temple, Longmen Caves

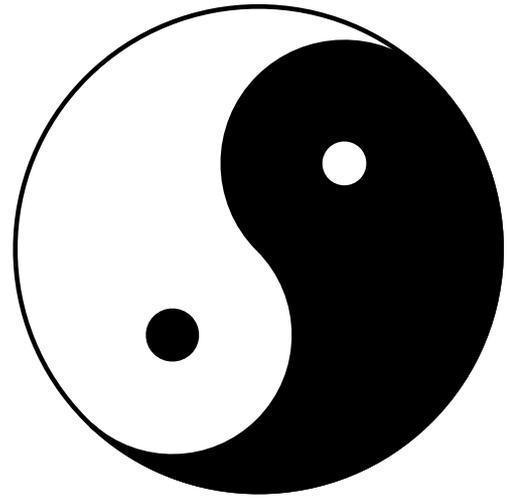
Taoism

Taoism (or Daoism) began with the teachings of Lao-Tzu (600–531 BCE). Lao-Tzu believed that, to live forever, people had to become one with the life force (the Tao or ‘the Way’). This effort required constant change to balance within oneself the yin (female) and yang (male) forces that he believed made up everything in the world. Two things helped this spiritual struggle. The first was meditating, usually at shrines built in beautiful natural spots. The second was exercise, such as kung fu and t’ai chi. Today we still see both of these aspects of Taoism reflected in the lifestyle of the Chinese.

Buddhism

Travellers from India brought Buddhism to China during the 1st century CE, via the **Silk Road**. By the middle of the 5th century CE, it was the state religion in China. It was begun by a wealthy Indian prince, Siddhartha Gautama, who was born around 563 BCE. He was upset by the suffering and poverty he saw as a young man, so he turned his back on his inherited wealth to search for more spiritual meaning. He called this process looking for ‘the truth’.

The state of nirvana (in Buddhism, the final spiritual state) he sought was one where there was no more hurt or pain. A person who reached it, as he did, became one with the universe, or Buddha, which means ‘the enlightened one’. That person was then freed from all the bad things about being human, such as wanting to kill, cheat or lie. To reach nirvana, a person might have to be **reincarnated** (to be reborn and live again in another form) many times. Each life lived, with its unique experiences, taught the person more.



Source 4 The yin–yang symbol. Yin and yang are concepts central to many branches of classical Chinese philosophy and spiritualism, including Taoism, Confucianism and Buddhism. Yin and yang are seen as two equal but opposite forces that together control the world. They have to be in balance. The yin includes things that are cold, closed, dark and still; the yang, things that are hot, open, bright and active.

Check your learning 12.7

Remember and understand

- 1 In your own words, explain the values that Confucius believed should influence the behaviour of individuals, families and governments.
- 2 Who was Siddhartha Gautama? Why did he choose the life he did, and why is he now known as ‘Buddha’?

Evaluate and create

- 3 Buddha’s birthday is celebrated by Buddhists around the world. The date varies from year to year: 17 May (2013), 6 May (2014), 25 May (2015) and 14 May (2016). Conduct some research to find out how this event was typically celebrated in ancient China. Write a paragraph that describes continuities and changes in the way this event was celebrated in the past compared to now.

12.8 Everyday life

Options

In this section, how beliefs, values and practices influenced the lifestyle of the ancient Chinese is discussed in respect to the three topic areas listed below:

- everyday life
- warfare
- death and funerary customs.

Choose only ONE of these topic areas to study.

Confucian philosophy heavily influenced the daily lives and values of the Chinese people, especially from the Han Dynasty (206 BCE–220 CE) onwards. Confucius believed that China's people were all members of a big family. They should behave towards each other and towards their ruler as would be expected in a family. This meant being respectful, moral, fair, obedient, courteous and self-disciplined.

Family structure

The family was the basic social unit of ancient China. It included all generations and in-laws. Older people were treated with great respect, especially by younger family members. The oldest male was considered the head of the family. Often he took more than one wife to increase the chances of having many sons. If rich, he also had concubines. His decisions had to be obeyed, including whom his daughters would marry.

A woman's status improved if she had sons. Daughters had little value. Girls spent their childhood learning to cook, weave cloth and help around the house. When a girl married, she had to live in her husband's house. The girl also had to obey her mother-in-law.

Sons were highly valued in ancient China as they carried on the family name. If they were from a wealthy family, boys received a good education. Even poorer families would try to send their sons to temple schools. Boys usually lived their whole lives in the same house. If they were the eldest son, they would eventually become the head of the household.

Food and medicine

Rice started being grown for harvest in the Yellow River valley around 7000 years ago. It was eaten as a food, and was also made into wine. In the cooler, drier north, millet (a grain) and sorghum (a cereal grass) were harvested. Wheat took much longer to become part of the Chinese diet. In fact, it was not until about 1500 years ago that it became a popular food (second only to rice). Farmers often grew their own vegetables to accompany rice meals, whereas the wealthy might buy these at a market.

keyconcept: Evidence

Very old noodles

About 2000 BCE, an earthquake devastated the small village of Lajia in the Yangtze River valley. Over time, its remains were buried with ash, sediment and dirt. When excavating this village, archaeologists were surprised to find what they believed was a very old meal. It had been preserved in an upturned bowl. Scientific analysis confirmed what scholars expected – proof that these were very old noodles! It also confirmed that the noodles were made from millet.

For more information on the key concept of evidence, refer to page 167 of 'The history toolkit'.



Source 1 These noodles, discovered in the Yangtze River valley, are 4000 years old.

Meat was typically eaten only on special occasions – chicken at first, then pork and, later still, beef and mutton. All meats were expensive, and therefore were only a common dish for the wealthy. Chinese diets were also influenced by beliefs. Some forms of Buddhism, for instance, prohibited eating meat. For many, protein came from foods such as tofu (soy bean curd).

Tea drinking

Tea has been drunk in China for over 2000 years. It was first drunk as a medicine or a stimulant. During the Tang Dynasty (c. 618–908 CE), it became more of a social tradition – a formal way of relaxing and mixing with others.

Feng shui

Feng shui means ‘wind and water’ in Chinese. The practices of *feng shui* developed from the Chinese belief that people should plan their living spaces in harmony with the energy of the natural world (including the **cosmos**).

Good *feng shui* meant placing settlements and buildings so they faced a particular way (for good energy). It also meant arranging things, such as furniture and mirrors, in a particular way within rooms. In ancient times, this arrangement was believed to protect against evil spirits.

Today, good *feng shui* is said to promote good health, prosperity in business and happy relationships. Many people today consult experts to find out how to design their houses and furnish their rooms for good *feng shui*.



Source 3 A Taoist priest making tea

Martial arts

The martial arts (called Wushu) began in ancient China. At first, it was a type of self-defence practised by its soldiers. It has since become a unique part of China’s culture, and its various forms are now also practised by many people around the world.

Kung fu is the code of skills from which a great many styles of martial arts, such as karate, have developed. It is perfected only with years of intense practice, study, meditation and self-discipline. Like so many aspects of Chinese lifestyle, it is shaped by a belief in the need for harmony and balance.

A kung fu master learns to use the *ch’i*, described as the energy force of the universal power. This gives someone who is small and slight the ability to smash through a pile of bricks with a bare hand or a head. It also gives masters great athletic ability.

Check your learning 12.8

Remember and understand

- 1 Explain how the practice of drinking tea changed over time in China.
- 2 How did belief systems influence the eating of meat for some in ancient China? What substitute food was commonly eaten to provide protein?
- 3 What was *feng shui* and how was it influenced by Chinese beliefs?

Apply and analyse

- 4 Explain how training in kung fu, or other martial arts, would have benefited a professional soldier in ancient China.



Source 2 A competitor at the Wushu championships in China, 2006, demonstrating kung fu skills

12.9 Warfare

The first permanent army in ancient China did not form until the Han Dynasty (206 BCE–220 CE). During this dynasty, China was often at war, enlarging its empire and engaging in fights with northern tribes. Han rulers required all able-bodied men between the ages of 23 and 56 to enlist in the army for two years. They were also expected to serve again if there was a military emergency such as an uprising or an attack. Some also had to perform guard duties (for example on the Great Wall of China).

Until the Han Dynasty, armies were made up of ordinary men (mostly farmers). They were called up for military service as the need arose. These farmer-soldiers were not trained. For some, the only exposure they had to battle skills and tactics was what they learnt ‘on the job’ when called up. Soldiers did not receive pay, but they were fed and given weapons and a uniform. While on army service, they kept fit by wrestling, throwing stones and playing games similar to football and polo.

Battle tactics and weapons

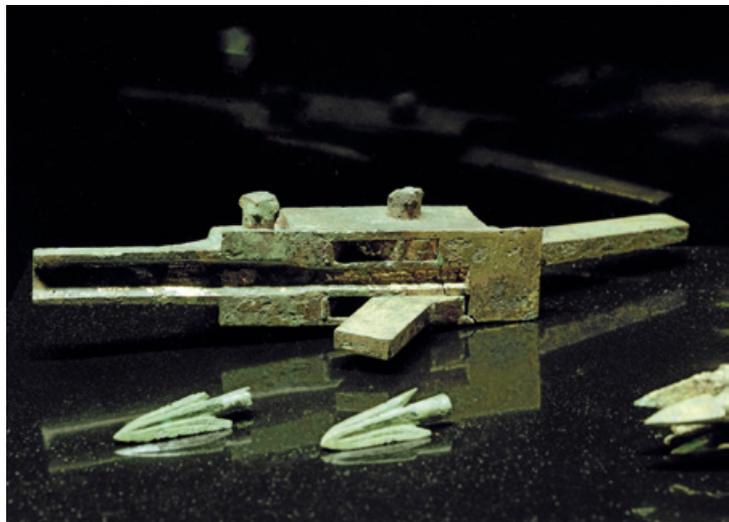
During the Shang Dynasty (1766–1122 BCE), battles were fought mainly using chariots. Ancient records indicate that farmers had to plough their fields all in the same direction so that chariot wheels could more easily cross farmland in the event of a battle. A great deal of archaeological evidence about the chariots and weapons that were used has been uncovered at sites in China.

Later, the cavalry (soldiers who fought mounted on horseback) and armed foot soldiers played a greater role. By the late 4th century BCE, the cavalry was the strongest component of the army. Fighting on horseback was greatly helped by the Chinese invention of the stirrup around 350 CE. It enabled riders to sit more securely on a fast-moving horse while using their weapons.

Early weapons, such as spears and daggers, were typically made of bronze; later, iron was used. Most weapons of the Shang and Zhou Dynasties were made of bronze, which is a mix of either copper and tin or copper and zinc. Weapons made from bronze included battle axes, spears, swords and halberds (spears combined with axe blades).



Source 1 The skeleton of a Shang Dynasty charioteer and the fossilised remains of his chariot



Source 2 The remains of a crossbow (and bolt heads) from the Han Dynasty



Source 3 A modern Chinese kite

The crossbow was invented in ancient China and used 2500 years ago. It fired bolts (metal arrows) with great force up to about 200 metres (see Source 2). It had sufficient speed and force to penetrate armour.

The kite was another Chinese invention, first used about 2500 years ago (see Source 3). Some early kites were made to spy on the enemy or to send messages. An ancient document states that kites big and strong enough to hold small children were once used by a Han general to disperse the enemy. The kites were floated up through the fog around the enemy camp. The children they carried were told to play tunes that would make the enemy homesick, and thus retreat.

Armour

The first armour of Chinese soldiers was made from wood or bamboo. Later, small overlapping pieces of leather or iron were joined together with fabric ties or metal studs. This made upper-body armour both sturdy and flexible. Helmets were also worn by soldiers from the Han Dynasty onwards.



Source 4 One of the 'terracotta warriors' guarding Qin Shi Huang's tomb, which provides evidence of armour worn by soldiers during the Qin Dynasty

keyconcept: Significance

The Art of War

Around 500 BCE, during the Warring States period, a military leader named Sun Tzu wrote a manual called *The Art of War*. This text outlined strategies to be used in warfare. Its principles and tactics are so insightful that they have gone on to influence many modern disciplines around the world, such as business tactics, legal procedures and sporting strategies. This makes the text a highly significant ancient document.

Legend has it that Sun Tzu demonstrated the effectiveness of his strategies to the king of the then independent state of Wu by quickly training 100 women in the palace as soldiers.

For more information on the key concept of significance, refer to page 169 of 'The history toolkit'.

Check your learning 12.9

Remember and understand

- 1 During which dynasty did China's first permanent army form? How was it made up?
- 2 What duties and activities might a Han soldier have to carry out?
- 3 How were battles typically fought during the Shang Dynasty?

Apply and analyse

- 4 Study Source 4, looking particularly at the soldier's armour. Suggest any ways it could have been modified with materials and methods available in ancient times to provide its wearer with more protection. Draw labelled sketches. Justify your design solution.
- 5 What evidence does Source 2 provide to support the commonly stated view that wounds from a crossbow bolt were horrific?

Evaluate and create

- 6 Study Source 3. Suggest how the kite would need to be modified to serve a military purpose. Decide if such a feat could have been possible, or is simply legend. Justify your opinion.

12.10 The Great Wall of China

One of the strongest defensive structures ever built is known as the Great Wall of China. It is also the world's longest. The wall started out as a number of separate mud-brick structures built by lords during the Zhou Dynasty. The first emperor, Qin Shi Huang, began the task of joining these walls and extending them in 220 BCE. This was needed to keep out invading tribes to the north (known as Mongols). The structure we see today was largely completed during the Ming Dynasty (1368–1644 CE). That was when the watchtowers and cannons were added. Today, the Great Wall is a World Heritage Site.

Check your learning 12.10

Remember and understand

- 1 What is the actual length of the Great Wall of China?
- 2 How many kilometres does it cover as the crow flies?
- 3 What was the original purpose of the Great Wall?
- 4 What was used to fill the internal sections of the Great Wall?

Evaluate and create

- 5 What do you think is the most effective aspect of the Great Wall's design as a military defensive structure? Give reasons for your opinion.

Source 1 An artist's impression of the construction of the Great Wall of China



Battlements (raised sections of wall built to provide protection) run along both sides of the wall and also around the perimeter of every watchtower.

Thousands of watchtowers were built along the length of the wall, each about 12 metres high. They were built close enough together for messages to be sent between them. This was done using fires (by night), smoke (by day), as well as drums and flags.

Bamboo or timber scaffolding was set up to help workers construct the walls from packed earth, and later, stone blocks, bricks and clay tiles.

Those who were enlisted to build the wall included soldiers, farmers, slaves and convicted criminals. Working conditions were extremely harsh and fatal accidents were common. Guards forced the builders to work hard and stopped anyone from escaping. Historians think that at least 100 000 men died building the wall. Their dead bodies were often buried under or inside the wall itself, or close by.

12C How did beliefs, values and practices influence ancient Chinese lifestyles?

As the crow flies, the wall covers a distance of 2700 kilometres, but its actual length is closer to 6500 kilometres because it twists and turns across so much mountainous terrain. This is roughly the same distance as driving from Melbourne to Perth and back again.

The Great Wall is between 5 and 9 metres thick and as high as 7.5 metres in certain sections. The road built on top (between the outer walls that enclose it) is about 6 metres wide.

The Great Wall was built in sections. The two outer walls were built first. The space between them was then filled, reinforced and finally paved.

The internal sections of the wall were filled with earth, sand and rocks – along with the bodies of thousands of workers who died during the wall's construction. The fill was carried into position by hand. As a section of fill built up, vertical slats of bamboo or wood were hammered into the ground to hold it in place.

12.11 Death and funeral customs

It was very important to the ancient Chinese that their ancestors be honoured and remembered after death. It was just as important for all proper rituals to be followed for those who died. Rituals included gift-giving at grave sites and the home shrine. If this was not carried out, it was feared that the dead person's spirit might become angry and cause bad things to happen to those left on earth.

Burial practices

The ancient Chinese believed that the burial site (or tomb) in which a dead body was buried became the place where the spirit of the dead person resided. People were usually buried with a range of items they might need in the afterlife, such as food, clothing, mirrors (for light) and weapons.

Rulers had more elaborate tombs than ordinary people. Goods such as furniture and chariots might be included among their tomb goods. So, too, might their wives, and any concubines who had no children. These women were often buried alive. Later, the practice was to replace living people with models, made from wood or clay.

The tomb and mummy of Xin Zhui

The best-preserved mummy in the world was found in China in 1971 (see Source 1). It was so well preserved that doctors were able to conduct an autopsy (a medical examination of a corpse) to find out how the woman died.

The woman, Xin Zhui, had been married to a wealthy Han ruler. She died from a heart attack about 2200 years ago at approximately 50 years of age. She was 158 centimetres tall and overweight. When found, her skin was soft, her hair was completely intact, and her limbs were flexible. The blood in her veins was still red. Her body had been wrapped in many layers of silk after being dipped in a liquid that still puzzles scientists today.

Her tomb was extremely well-constructed and protected. It had not been robbed and still contained about 1000 items. These included lacquerware (objects such as combs and vases), silks, musical instruments and many containers of food (many types of meat, as well as grains, eggs and fruits). There were also 162 small-scale wooden servants to serve her in the afterlife.



Source 1 The mummified remains of a wealthy Chinese woman, Xin Zhui, born in 100 BCE during the Han Dynasty

The tomb of Liu Sheng and Dou Wan

Three years earlier, another tomb had revealed the bodies of other Han royals – Liu Sheng, the son of the Han emperor Jing Di, and one of his wives, Dou Wan

(see Source 2). They died around 100 BCE and were buried with nearly 300 objects and 12 horses. Their remains had been totally encased in jade suits shaped to look like armour. Jade was believed to have magical properties that would stop the body decomposing.



Source 2 The jade burial suit of Dou Wan, wife of the Han prince Liu Sheng. It contains 2156 jade pieces and 703 grams of gold thread.

The rituals to be observed after the death of a person in ancient China

- 1 The deceased person's family made the death known by loud weeping and moaning, and by hanging up messages. They put on white clothing. The coarseness of the cloth and how long it was worn depended on how close the mourner was to the dead person.
- 2 The corpse was washed, dressed and laid out in the home, sometimes for up to one week. People would call to pay their respects, give gifts to the family and provide offerings for the dead person. Offerings typically included money and small paper models of household items.
- 3 The offerings were burned so the corpse could 'receive' them in the afterlife.
- 4 A stone plaque was placed near the family shrine in honour of the person.
- 5 After religious procedures (which varied depending on the religious beliefs of the dead person), the corpse was placed in a coffin. Music was played to calm the dead person's spirit.
- 6 The coffin was carried in a procession before burial or cremation. Most ancient Chinese were buried and families followed the rules of *feng shui* to determine where the gravesite was located and how the remains were placed in the grave.

Source 3 The rituals of a typical funeral in ancient China

Check your learning 12.11

Remember and understand

- 1 Why did the ancient Chinese believe it was important to remember and honour their ancestors?
- 2 Use the information in Source 3 to write a short 'eye-witness' account of a funeral in ancient China.
- 3 Explain why the ancient Chinese buried goods and food within the tombs of dead rulers.

Evaluate and create

- 4 Write a brief newspaper article, suitable for inclusion in your local newspaper, on the discovery of the tomb and mummy of Xin Zhui. Include comments on what this find reveals about burial traditions in ancient China.

12C rich task

The legend of Mulan

The legend of Mulan is a heroic story from China that tells the tale of a brave girl who leaves home to fight for her king and nation. There have been many versions of the story over the centuries, and poems, songs and films about Mulan celebrate her courage and her honourable actions.

According to the legend, Mulan disguised herself as a man to join the army in place of her father, who was too old to fight but had no son to serve in his place. Over 12 years, she served in the army – travelling long distances, facing harsh weather and confronting death. After her years of service, the king offered her great honours, but she refused them, preferring instead to return to her home and her aging parents.

We do not know whether Mulan was in fact a real person. The legend was first recounted in the *Ballad of Mulan*, a poem composed between 500 and 600 CE. This poem was included in a 12th-century music collection and has been embraced in popular culture since then. An excerpt from the poem follows.

Source 1

Mulan weaves, facing the door.
You don't hear the shuttle's sound,
You only hear Daughter's sighs.
They ask Daughter who's in her heart,
They ask Daughter who's on her mind
'No one is on Daughter's heart,
No one is on Daughter's mind.
Last night I saw the draft posters,
The [Khan] is calling many troops,
The army list is in twelve scrolls,
On every scroll there's Father's name.
Father has no grown-up son,
Mulan has no elder brother.
I want to buy a saddle and horse,
And serve in the army in Father's place.'

In the East Market she buys a spirited horse,
In the West Market she buys a saddle,
In the North Market she buys a long whip.
At dawn she takes leave of Father and Mother,
In the evening camps on the Yellow River's bank ...
She crosses passes and mountains like flying.
Northern gusts carry the rattle of army pots,
Chilly light shines on iron armour.
Generals die in a hundred battles,
Stout soldiers return after ten years.

On her return she sees the Son of Heaven [Khan],
The Son of Heaven sits in the Splendid Hall.
He gives out promotions in twelve ranks
And prizes of a hundred thousand more.
The [Khan] asks her what she desires.
'Mulan has no use for a minister's post.
I wish to ride a swift [horse]
To take me back to my home.'

When Father and Mother hear Daughter is coming
They go outside the wall to meet her ...
'I open the door to my east chamber ...
I take off my wartime gown
And put on my old-time clothes.'
Facing the window she fixes her cloudlike hair ...
She goes out the door and sees her [fellow soldiers]
Her comrades are all amazed and perplexed ...
They didn't know Mulan was a girl.

Excerpts from the *Ballad of Mulan (Ode of Mulan)*





Source 2 A still from the 1998 Disney animated film *Mulan*



Source 3 A 10th-century painting of Mulan

skilldrill

Recognising values in primary sources

To recognise and describe values in a primary source, you need to look beyond the literal meaning of the source and see what you can infer and interpret.

Remember, primary sources are those that were written or created during the time being investigated.

- Step 1** Think about what you already know about the values that existed in the society at the time the primary source was created.
- Step 2** Turn your attention to the primary source itself. What ideas or themes are presented in the source? What is presented as good or important? What underlying message is being conveyed about the people or events being described?
- Step 3** Make connections between the inferences you have drawn about the primary source and your existing knowledge about the social, political and religious values that existed in the society during the period in which the primary source was created.

You should then be able to offer your interpretation of how particular values are represented in a primary source.

Apply the skill

- 1 Follow the steps outlined above to identify the values expressed in sources about Mulan. Think about what you have learnt in this chapter about the social, political and religious values in ancient China. Next, think about how these related to family loyalty, national loyalty, the role of women in society and what was considered heroic. Finally, think about what the legend of Mulan reveals about each of these values. Copy this table into your notebook and record your ideas.

What the story of Mulan reveals about the importance of:

| |
|------------------------------|
| Family loyalty |
| National loyalty |
| The role of women in society |
| Heroic qualities |

Extend your understanding

- 1 Write a paragraph explaining why you think the legend of Mulan is still popular today. You may wish to compare Mulan to other heroes (real or fictional).
- 2 Look at Sources 2 and 3. Can you identify any of the values listed in the table in these two images of Mulan? Write down your findings for each image.
- 3 Rewrite the legend of Mulan in the form of a short story. Make her a modern-day hero by setting your story in the present.



part 3

economics and business

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Concepts and skills

The economics and business toolkit

Economics is the study of how people choose to use the limited **resources** on Earth to satisfy their needs and wants. Studying economics helps us understand how the world really works. Many people assume that economics is simply about money and business, but this is only one part of what economics explores. As much as anything, economics is the study of human behaviour – how people interact with one another locally and globally. Today, more than ever before, it is useful to have an understanding of economics and business skills. These skills will help you make good decisions and avoid unnecessary risks.



13A

What are the economics and business concepts?

13B

What are the economics and business skills?



chapter 13

Source 1 While economic growth is often measured with money, it is really about improving our quality of life through smart decisions about how to use our resources.

13.1 Economics and business concepts

Economics and business students can use a wide range of concepts to help them understand the world of economics and business. These concepts may be used together or as separate ideas. As you learn to use each of these key concepts you will begin to think like an economist or business person.

The six key concepts of economics and business are:

- scarcity
- making choices
- specialisation and trade
- interdependence
- allocation and markets
- economic performance and living standards.

Scarcity

Scarcity is the economic problem of having unlimited needs and wants, but limited resources available. Resources can include natural or made materials. Water, electricity, soil and sugar are all examples of resources that may be used in the production of **goods and services** (the items or activities we buy) to fulfil our needs and wants. People can also be considered resources. For example, skilled workers are also an important part of developing products that will meet our wants and needs.

In economics and business, resources can be divided into four categories, known as the **factors of production** (or economic resources). These categories are:

- land (natural resources such as coal or water)
- **labour** (human resources such as workers)
- capital (manufactured resources such as equipment)
- entrepreneurship (management resources: the skills or talents required to bring the other resources together successfully).

For example, in many places around the world, water is a scarce natural resource. We need water for many things, including to drink, to wash and to grow our food. Even though the Earth has a lot of water, we cannot access enough to fill the needs and wants of everyone on the planet.

Australia has access to more water than some countries, but when we are going through a drought, we need to manage the amount of water we use. For example, if we only have a limited amount of water, it is not a good idea for people to water their lawns and fill up their swimming pools. It would be better to save water for important things like growing food and drinking.

Our limited access to resources means we are not all able to have everything we need (or think we need). Businesses or individuals are not always able to obtain all the resources they need, which means they must manage what they do have carefully. An important part of economics is examining the decisions that result from our need to manage scarce resources.



Source 1 Water is a scarce resource that must be managed carefully.

Making choices

Making choices is an important part of economics. As **consumers**, we make choices about what we want to buy to satisfy our needs and wants. These decisions can be small, such as what we will buy for lunch, or big, such as whether or not to buy a house.

In order to make a good economic decision, we consider our options. We evaluate these alternatives, weighing up the costs and benefits of each to choose the option that is best for us.

Throughout our lives we will be faced with many economic decisions. In addition to consumer decisions, we might need to make:

- financial choices (such as how much money to save or spend)
- business decisions (such as what to produce or where to sell a product)
- **employment** decisions (such as what career path to follow)
- legal decisions (such as whether or not to take legal action over a faulty product).

Part of our need to make choices results from the concept of scarcity. Because our resources are limited, we are not able to produce, buy or own everything we want or need. We must therefore decide or prioritise what we wish to produce or consume using the resources available to us.

Specialisation and trade

Many countries around the world are unable to produce the variety of goods and services required to support the wants and needs of their populations. This can be for a number of reasons, including the availability of resources. When a country is unable to produce a good or service, it can rely on **trade**, or the ability to **import** or **export** goods or resources to or from another country.

For example, in Australia we have many valuable natural resources that other countries do not have. Western Australia in particular is rich in natural resources such as gold, iron and nickel. These precious resources can be used by us and other countries for many different things, including making money with gold or making steel with iron.

This means we can sell these resources to other countries that cannot access them on their own.

Specialisation refers to the way an individual, a business, or an entire country can focus on the production of a particular good or service in order to develop a more efficient and competitive production process.

In Australia, one of our specialised industries is the mining industry. We have the natural

resources, workers, equipment, and processes in Australia to run many large mines efficiently. This has built up over many years of experience.

Like many other countries, Australia can buy products that we are unable to produce cheaply ourselves. For example, while Australia is technically capable of manufacturing cars, we import most of our vehicles from countries that specialise in the automotive industry because it is much cheaper.



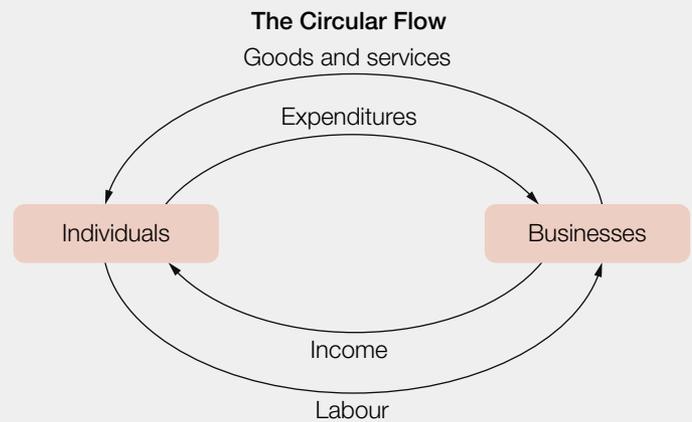
Source 2 Australia's specialist industries include the mining industry. The Super Pit in Kalgoorlie is the biggest open-cut mine in the southern hemisphere.

Interdependence

Interdependence refers to the way we rely on others to satisfy our wants and needs. Participants in our economy, including **producers**, consumers, businesses and the government, depend on each other to produce, specialise and consume goods and services. If you are not able to produce everything you need for yourself – for example the electricity you use, the clothes you wear or the food you eat – you are considered dependent. We rely on others to help fill the gaps in our needs and wants that we cannot fill ourselves.

As consumers, we must pay for goods and services to meet our needs. In order to afford these things, we rely on earning an income, such as by working for businesses. Businesses or producers rely on being able to sell their goods and services to consumers so that they can continue producing. Source 3 shows how a consumer's ability to earn an income, and therefore purchase goods and

services, is dependent on producers. Similarly, producers rely on consumers to provide work for them and to purchase their goods and services. This interdependence is often referred to as a simple circular flow model.



Source 3 The circular flow model shows how consumers and producers rely on each other, or are interdependent.

Allocation and markets

The concept of **allocation** refers to the way we distribute our scarce resources among producers. It also refers to the way we then distribute scarce goods or services among consumers. As we will continue to learn as we study economics, the scarcity of resources available means that we cannot fill all of our wants and needs.

There are many ways to distribute resources. The exchange of goods and services (or resources) among buyers and sellers is referred to as a **market**. Our market economy usually determines how resources will be distributed. This means we often rely on price to determine how much we are able to produce and consume.

When the cost of producing or obtaining a particular resource is high, not everyone will be able to obtain it.

For example, it costs a lot of money to buy a house in Australia. Many people cannot afford to buy a house in Australia because of the cost of land, building materials and other expenses. This means some people will have to **rent**, live with

their families or rely on government support. In some sad cases, people will not have access to housing at all.



Source 4 Houses are expensive, which means that they are often difficult to obtain.

Economic performance and living standards

Economists measure how well an economy is doing, known as its **economic performance**, using a wide variety of methods. It is important to measure our economy so that we can understand what problems exist, develop solutions for our problems and plan for our future. Often economies will set objectives, such as reducing national debt, and then measure their performance against these objectives. Some key indicators of economic performance include:

- **Gross Domestic Product (GDP)** – the total value of goods and services produced in a country over a year
- **inflation** – the general increase in prices of goods and services
- the **unemployment rate** – the percentage of people who are unemployed out of all people who are able to work.

We can measure an economy at a number of different levels, such as state (Western Australia's economy), country (Australia's economy), or world (the global economy).

Economists also measure **living standards**. Living standards can be material or non-material. Material living standards refer to our access to physical goods and services. People in Australia are considered to have very high material living standards, because most of our population has easy access to food or services that allow us to fulfil our wants and needs. Non-material living standards are harder to measure and include things that may contribute to our happiness, such as freedom, low crime levels, access to facilities or free elections.

Measuring economic performance and living standards is an important part of understanding and managing our economy. By knowing our areas of strength and weakness, governments can develop policies to improve our economy and, as a result, our standard of living.



Source 5 Economists look at the way people live to measure how well an economy is performing.

Check your learning 13.1

Remember and understand

- 1 What is scarcity?
- 2 How is making choices related to scarcity?
- 3 Why do some countries specialise in producing a particular product?
- 4 How does the market influence the allocation of resources?
- 5 What is the difference between material and non-material living standards?

Apply and analyse

- 6 Many concepts of economics and business are interrelated. Describe the relationship between the following concepts:
 - a scarcity and making choices
 - b interdependence and specialisation and trade

- c making choices and allocation and markets
- d scarcity and allocation and markets
- e economic performance and living standards and scarcity

Evaluate and create

- 7 Research one of Australia's major industries (for example, farming, mining, transportation or tourism) and answer the following questions:
 - a How much does this industry contribute to the Australian economy?
 - b What would be the benefits of Australia specialising in this industry?
 - c What are the challenges faced by this industry? Does it relate to any of the key concepts we have discussed?

13.2 Economics and business skills

Economics and business students use real-life examples to help them to generate questions, interpret information and argue their point of view. They also learn through experiences where they are provided with an opportunity to be innovative, show leadership and practise the ability to make wise business decisions.

Studying economics and business requires you to analyse information and ask a range of questions to find out more about a topic. You will learn to question and research information asking what, why, when, who and how to uncover the truth about an issue. Your investigation may involve weighing up the costs and benefits of economic or business choices and making recommendations.

As shown in Source 1, there are four stages in any economics and business inquiry. They are:

- 1 Questioning and researching
- 2 Analysing
- 3 Evaluating
- 4 Communicating and reflecting



Source 2 We can access a great deal of information about businesses and the economy using the Internet.



Source 1 There are four stages in any economic and business enquiry. At each stage, economists use a number of different skills. Each of these skills is like a tool in a toolkit.

13.3 Questioning and researching

Developing questions

Economics and business students ask lots of questions. They seek out real-life economic and business cases and undertake an investigation to try to learn from and avoid mistakes made in the past. They also check facts and look at the arguments for and against a certain issue before reaching their own conclusions. When economics and business students state their opinion, they support it with evidence such as statistics, cases from the past, quotes from what others have said and sound reasoning.

Collecting relevant data and information

Sources provide information for economics and business students. They can take many different forms, from written records in books or online, to live video and audio recordings. Some examples of sources include economic journals, newspaper articles, letters, government department or business websites, tweets, blogs or Facebook posts, cartoons and interviews.

Locating a range of relevant sources is a valuable skill, which usually involves a number of different search methods, such as:

- using online search engines such as Google
- following social media such as Facebook and Twitter
- looking at newspaper and magazine articles in print or online
- contacting local businesses or asking people with expertise in the subject
- speaking with other class members or family members to gain an insight into their views on a particular issue.

Planning an economic or business inquiry

| Key inquiry question | Information needed | Possible sources of information |
|---|--|---|
| Is it a good idea for the local pizza place to sponsor the local football team? | <ul style="list-style-type: none">• How much would it cost to sponsor the local football team?• What is the football team offering in return?• Who/how many people will see the sponsorship?• How will that affect the pizza place's brand or public image? | <ul style="list-style-type: none">• Contact the football club for information• Survey past or current sponsors on their experience sponsoring the team• Conduct fieldwork into the football team's spectator numbers• Survey current customers at the pizza place |

Source 1 A guide for planning the direction of an economic or business inquiry

Check your learning 13.3

Remember and understand

- 1 What do economics and business students do first before reaching their own conclusions?
- 2 Give three examples of what an economics and business student might use as a source.

Apply and analyse

- 3 Siew has been asked to find out how many small businesses operate in her local area. Suggest how she could find the answer to this question.
- 4 Lachlan believes that his family's fish and chip business would do better if they advertised online. How can Lachlan prove his point?

Evaluate and create

- 5 Develop five questions that you think may assist an economist or businessperson in deciding if it is a good idea to start a business in their local area. Create a planning table similar to that used in Source 1.

13.4 Analysing

Interpreting information and identifying relationships

Economics and business students use charts, statistical tables, case studies, interviews and simulation games to help identify the cause of a problem or event and its likely outcome or effects.

Once you have collected, recorded, evaluated and represented your data, it is time to identify any trends, patterns or relationships in the information. You will have used questionnaires, surveys and statistics from many different sources, such as textbooks, websites and the wider community, before you create graphs and tables to summarise the information. Now it is time to look at this information to identify any trends, links or relationships.

For example, Andy collected data on a phone company's advertising expenses. His data showed that the more money the company spent on advertising, the more phones they sold. Andy also recorded the number of employee complaints during this time. He found that the amount of money the company spent on advertising seemed to have no effect on **employee** complaints. This means Andy was able to identify a relationship between advertising and phones sold, but that there was no relationship between advertising and employee complaints.

Economics is not a pure science. There are a lot of different theories and approaches to economics, which means there are often several different answers to the same problem. It is quite common to see two reputable economists have completely different opinions on a topic or issue. For instance, another economist may think that Andy is wrong and that there is a link between advertising and employee complaints. They might collect different data or find different trends. Many issues require us to weigh up different points of view, while keeping an open mind.



Source 1 Being able to interpret data and information is an important skill that helps businesses and individuals make decisions.

Check your learning 13.4

Remember and understand

- 1 Why is there not always a right answer to economic questions?
- 2 What does it mean to 'interpret' data?
- 3 Why is it important to identify trends, patterns or relationships in the information you collect?

Apply and analyse

- 4 Look at the following dataset on visitors to a park during different seasons. What relationship could you interpret from this data?

| Average number of visitors per season | | | | |
|---------------------------------------|--------|--------|--------|--------|
| | Summer | Autumn | Winter | Spring |
| Green Park | 2102 | 1380 | 763 | 1390 |

13.5 Evaluating

Drawing conclusions and generating alternatives

There's usually more than one way to solve an economic problem or find the right solution in business. An economics and business student carefully considers all of the circumstances related to the issue with an open mind. They consider the different options that are on offer, and make a rational decision that they believe will lead to the best outcome.

skilldrill

Evaluating alternatives

Before looking at the different options in a business situation you must first do some work to find out more about the topic. Once you know about the topic, you can then assess the options available and choose the best one. This can be done using the following steps.

Step 1 Read through the different sources of information and find out what experts say about the topic.

Step 2 Make your own notes as you learn and write down any interesting facts, statistics or other information that will help you to explore the different options.

Step 3 Next to each option write the advantages and disadvantages, or costs and benefits.

Step 4 Get rid of the options that seem weakest based on their advantages or disadvantages.

Step 5 Concentrate on the strongest options and either decide which one is best or do further research before choosing the best option.

Apply the skill

Let's see how we could apply this skill to help a business owner make the right decision.

Tony runs a takeaway pizza restaurant in town that is becoming quite popular. So popular, in fact, that he is finding it difficult to keep up with all of the customer orders for pizzas. He is worried that he will not be able to make enough pizzas in time to satisfy all his customers, particularly on Friday and Saturday nights when he is busiest. Tony is considering:



Source 1 Business owners like Tony are regularly faced with economic choices that can determine whether or not the business is a successful one.

- a buying a new state-of-the-art oven that can reduce baking times from 15 minutes to 10 minutes, at a cost of \$80 000
 - b hiring a part-time employee to help out on the weekends for \$17 per hour
 - c increasing the selling price of all pizzas by 50 per cent.
- 1 Write a list of additional information that would help you to evaluate each option.
 - 2 Write a list of the advantages and disadvantages of each option.
 - 3 Suggest which option you think would be most suitable for Tony.

Applying economics and business knowledge, skills and concepts in familiar and new situations

Reading about economics or business in your textbook or using online resources can only teach you so much. Applying knowledge to a real business situation is a valuable experience and there are a number of ways you can do this, including:

- talking to someone in business about their experiences to see whether the theory you have learnt applies in real life
- observing the world around you. When you next go shopping, think about some of the things you've been studying, such as customer services, competition, marketing techniques and types of businesses
- trying to come up with your own innovative business idea and discussing it with others
- using opportunities to role-play or play simulation games as a chance to improve your skills and put what you have learnt into practice.

Check your learning 13.5

Remember and understand

- 1 What kind of outcome do economists aim to achieve when they make decisions?
- 2 How can you apply your business and economics knowledge to real-life situations?

Apply and analyse

- 3 Why do you think it is important for an economist to keep an open mind when making a decision?
- 4 Abby is trying to decide if she can go on holiday at the end of the year. She can't afford the holiday right now as she has just lost her job, but she really needs a break. Using economic reasoning, help Abby to make her decision.



Source 2 Talking to someone from a local business in your community can be a great way to apply the economic and business theories you have learnt to familiar situations.

13.6 Communicating and reflecting

Presenting information and reflecting on learning

In every subject, there is a common language that is used. Certain terms form part of important concepts and are essential in helping us understand these concepts. Source 1 lists and defines some commonly used terms in business and economics; additional business and economics terms can also be found in the glossary at the end of this book. If you come across a term that you are unsure of, you should use a dictionary, the Internet or your teacher to help you understand what it means. It is a good idea to keep a glossary of subject-specific terms, as well as any other new words that you come across, in your workbook.

| Term | Definition |
|-----------------------|---|
| business | activity that involves making goods or providing services in exchange for money |
| consumers | people who buy things to use |
| cost-benefit analysis | estimating what will need to be paid (costs) and possible benefits that will arise from a business proposal |
| economics | study of how people and society choose to use limited resources to satisfy their needs and wants |
| interest | the cost of borrowing money from a bank; a person has to pay the bank interest on top of the original amount borrowed from the bank |
| investing | putting money into shares, property or other financial schemes in the hope of making a profit |
| market | where buyers and sellers interact to exchange money for goods and services |
| opportunity cost | the cost of the next best alternative use of resources |
| producers | people or businesses who make and sell goods and services for a profit |

Source 1 Some useful economics and business terms

Check your learning 13.6

Remember and understand

- 1 Define the following terms in your own words:
 - a business
 - b producers
 - c resources.

Apply and analyse

- 2 Robert is reading a newspaper article when he comes across a few terms he has never seen before, including words such as 'interest' and 'market crash'. What advice would you give to Robert to help him find out the meaning of the terms?

Evaluate and create

- 3 Write one sentence that uses the following economic and business terms:
 - a business
 - b consumers
 - c profit.
- 4 Create a poster that reflects how one or more of the economics and business terms from Source 1 could be represented in everyday life. For example, you might create a poster that shows what a market is and what kinds of people would interact there.

Producing and consuming

Economic choices

Economics is all about choices. People are faced with choices every day. Should we walk to school or take the bus? What should we eat for lunch? Similarly, businesses also need to make choices, such as what products or services they will provide, while governments need to decide how to spend taxpayers' money. When investigating each of these choices the potential consequences that will affect society need to be addressed. Whatever choice people, businesses or governments take, they will miss out on the alternatives they did not choose. As economists, we look at how to choose the alternative that will bring the greatest benefits as well as the consequences of the actions we choose to make.



14A

How do individuals and businesses make economic choices?

- 1 If someone gave you \$50, what would you spend it on? Why?
- 2 What is the main goal of a business?

14B

How do businesses respond to consumer demand?

- 1 What would you do if your favourite snack doubled in price?
- 2 Why do you think businesses have sales, where they lower the prices of their products?



chapter 14

Source 1 A food market is an example of the economic choice made by a fruit and vegetable business choosing to sell their products to consumers, and buyers making the choice to purchase the products that will benefit them.

14C

Why do we work?

- 1 What do you think is the main reason your parents work?
- 2 What kind of job would you like to have when you finish school?

14.1 Making rational decisions

As economists, we look at how to make the right choices in a logical and thought-out way. While going with our gut feeling can be a more exciting way of doing things, a more carefully considered approach can help us make informed decisions. This means that we need to consider all of the factors involved. Although individuals and businesses should both take the same logical approach to making decisions, they have different motives and will have to consider a different range of factors.

Our needs and wants

Making economic choices is quite tricky when it comes to consumers. This is because we have a wide range of **needs** and **wants**. Generally speaking, a rational person aims to make choices that will fulfil their basic needs for survival, such as food, water and shelter. They also consider what will bring them the most satisfaction, such as owning a new smartphone. These desires that are not necessary for survival are called wants (see Source 1). While this may seem rather simple, distinguishing between the two can be a very important part of making economic decisions.

Distinguishing needs from wants

While you may feel like you need a mobile phone, it is not something that is necessary for your survival. In our society, there are many pressures that make people feel that items they want are actually items they need.

This kind of pressure can come from businesses. The goal of a business is to make a **profit** for its owners. Businesses make profit by producing goods or services for consumers to buy and will find clever ways of persuading you that you need their products. They develop flashy advertisements to display on billboards, TV and radio. They also pay celebrities to promote their products in movies and magazines. Even without realising it, the average Australian sees thousands of advertisements a day, all of which are trying to influence them to buy a product.

Sometimes we feel pressure from our peers to buy a product. If everybody else has the latest smartphone and we don't, we might feel like a **social outcast**. Without these pressures, we would be less likely to buy the product. This would allow us to consider spending our money on something else that may bring us more satisfaction. For example, we could have saved our money for a rainy day, or even donated it to those in need. Whatever you decide to do with your money, make sure that it is a rational decision that is most likely to give you the greatest satisfaction in the long run.



Source 1 While many people feel that they need a smartphone or tablet, in economic terms, a smartphone or tablet is considered a want.

Relative scarcity

Another problem caused by our wants is known as **relative scarcity**. Relative scarcity happens because our wants are unlimited, but the **resources** required to fulfil them are limited. This causes damage to the natural environment, which is certainly essential to our survival.



Source 2 Our unlimited wants not only use up the world's limited natural resources, they often damage the environment through pollution and waste.

Our wants are unlimited in the sense that as soon as one want is satisfied, another appears. For example, a person who has already acquired a house, food, water, basic clothing, and has money left over will buy an item that will make their life easier, such as a car. That person may later decide to buy a bag, designer jeans, a new car, a new smartphone – and the list goes on. People's wants can never be completely satisfied because as soon as we buy one of these items, we desire another. Before you know it, you have just spent \$35 million on a 1962 Ferrari 250 GTO race car.



Source 3 Luxury items such as this private yacht are products that we use to satisfy our wants.

Here are some other wants:

- diamond-covered smartphone: \$9.4 million
- private yacht: \$590 million
- bottle of wine: \$160 000
- slippers covered with diamonds and rubies: \$3 million
- a 27-storey skyscraper for a couple and their three children to call home: \$2 billion
- a diamond watch: \$25 million
- a dog house for a pet Chihuahua: \$325 000.

Check your learning 14.1

Remember and understand

- 1 What is the difference between a 'need' and a 'want'?
- 2 What is the goal of a business?
- 3 Describe two things that make us feel as if we need things that are actually just wants.
- 4 What is the problem of relative scarcity?

Apply and analyse

- 5 Identify each of the following items as a need or a want:
 - a car
 - b hairdryer

- c clean drinking water
- d pens and pencils
- e designer jeans
- f computer
- g house
- h mansion
- i basic food
- j ice cream
- k basic clothes
- l mobile phone.

- 6 Why do you think it is important to be able to recognise the difference between needs and wants?

14.2 Producers and consumers

Our economy is made up of **producers** and **consumers**. A producer is an individual or organisation that creates or provides goods (physical things such as food and clothes) and services (activities or skills such as accounting or construction). A consumer, on the other hand, is someone who buys or uses these goods and services.



Source 1 Goods are physical objects that can be seen and held, such as a car or the petrol that the car runs on.



Source 2 A service refers to the skills, knowledge or effort that a person provides and that cannot be physically touched, such as the service provided by a mechanic.

Producers

People become producers when they make goods and services for others to consume. Most producers today take the form of businesses that operate to make a **profit**. This means that they produce goods and services in a way that earns them more money than it costs to run the business. This profit



Source 3 Producers provide the goods and services that consumers demand so that they can make a profit.

provides the owners of the business with an income, while also providing jobs to employees, goods and services for paying customers, and tax revenue for the government. Producers can be separated into different categories based on how they go about their business, including agricultural, industrial and service producers.

Agricultural producers

Agricultural or primary producers are perhaps the oldest and most important type of producer in any economy. They generally produce food: vegetables, fruits and other products that are grown from the land, as well as fish and animal-based products that also rely on nature.

Industrial producers

Industrial or secondary producers mainly manufacture goods in factories. Businesses that produce clothing, phones, cars and other manufactured goods are considered industrial producers.

Service producers

Service or tertiary producers provide skills, knowledge, effort or other **intangible** benefits to their customers. Banks, schools, accountants and lawyers are all examples of service producers.

Consumers

We are all consumers because we buy goods like food, clothes and phones, and use services such as those provided by doctors, hairdressers, and banks. Businesses will also categorise consumers into different groups based on their behaviour. This helps the business work out how to best increase their sales to different consumers.

Loyal consumers

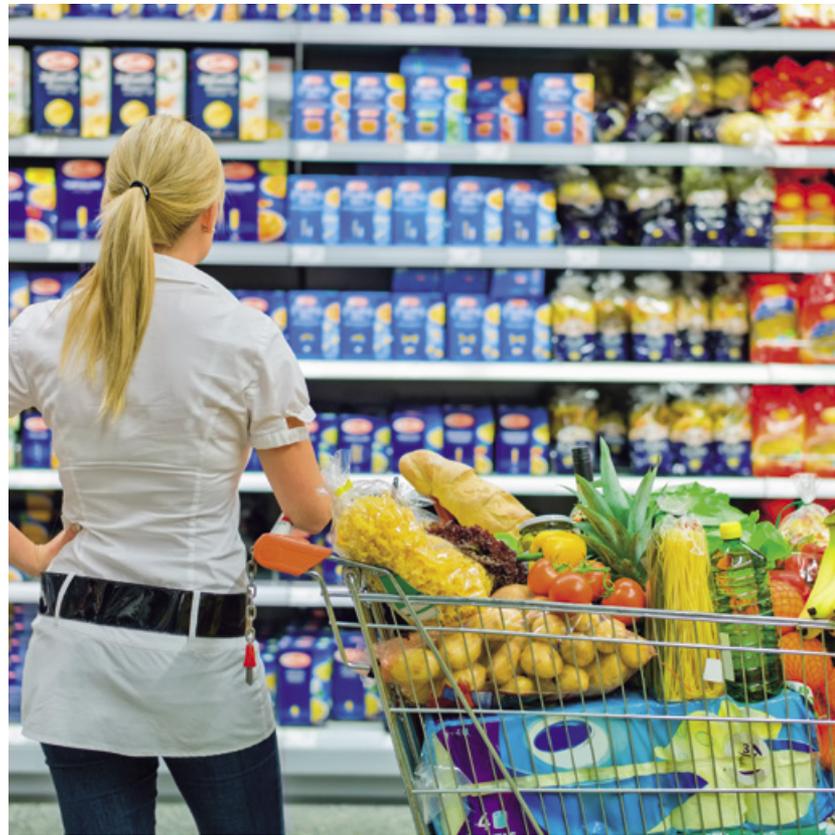
Loyal consumers are those that will continue to purchase goods and services from the same business over a long period of time. These customers are very valuable to a business as they account for a large number of sales. A business can encourage customers to stay loyal to the business by offering loyalty bonuses, maintaining high-quality products, and treating the customer well at all times.

Discount consumers

Discount consumers prefer to buy products that represent the best value for money. They often find sale items that have had their price reduced far more attractive than fully priced items. A business can attract such customers by having regular sales.

Impulsive consumers

Impulsive consumers are known for making less calculated decisions on how to spend their money than most others. They are often attracted to the flashy advertising and visibility of a product on offer. To attract impulsive consumers, a business should ensure that its store and the products it offers can easily be seen by as many consumers as possible.



Source 4 Virtually all Australians are consumers who purchase goods and services made by producers.

Needs-based consumers

Needs-based consumers only purchase products that they really require. They avoid spending money on goods or services that they don't feel are necessary at the given point in time. A business should ensure that it offers products that are needed by a wide range of consumers while making sure that consumers are aware that their products can fulfil certain needs.

Check your learning 14.2

Remember and understand

- 1 What is the difference between goods and services?
- 2 What are the three different types of producers?
- 3 Why do business categorise consumers into different types?

Apply and analyse

- 4 Provide one example of a business that would be considered:

- a an agricultural producer
- b an industrial producer
- c a service producer.

- 5 Give an example of a business that provides both goods and services.

Evaluate and create

- 6 Draw a cartoon showing how consumers and producers interact in the marketplace.

14A rich task

An everyday dilemma

Every day we are faced with countless choices. While some of these choices can be quite easy to make, others require a lot more thought. In situations where the answer is not so obvious, we might be tempted to go with our instincts or even flip a coin, but as economists we know better. Economists analyse the costs and benefits that each option has to offer before deciding on what to do. One way of doing this is by writing up a list of pros and cons.



Source 1 A dilemma is a situation where a difficult decision has to be made.

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Creating a list of pros and cons

The purpose of a pros and cons list is to help us make a rational decision. The pros represent the benefits of the choice we are considering, while the cons represent the negatives of that same choice. You can refer to Source 2 to see what a finished pros and cons list might look like.

- Step 1** Come up with a choice that you will consider the pros and cons for and write it as the main heading of your list.
- Step 2** Rule up a T-chart with the heading 'pros' on the left, and 'cons' on the right.
- Step 3** Carefully consider all of the benefits of choosing the option you are considering and list them under the 'pros' section of the T-chart.
- Step 4** Carefully consider all of the negatives of choosing the option you are considering and list them under the 'cons' section of the T-chart. Be sure to include in this section all of the things that you miss out on from the next best option (the opportunity cost).
- Step 5** Some pros and cons are more important than others so we need to give them weighting. Although this can be tricky, find the least important factor out of all of the pros and cons you have listed and write the number 1 next to it.
- Step 6** Compared to the least important factor, how much more important are all of the other factors? Write a number that shows how much more important they are to you next to each pro and con.
- Step 7** Add up the numbers in each column to show a total for pros and a total for cons. If the pros outweigh the cons then the choice is likely to be a good one. If the cons add up to a higher number than the pros, then the other option seems to be more appealing.

Apply the skill

- 1** Consider the following scenario:
You get home from school and after having a quick snack, you open your books to start studying for an economics test you have the following day. Five minutes into your study, your phone rings. All your friends from school are going to the park to play

Whether or not to create a Facebook account

| <i>Pros</i> | | <i>Cons</i> | |
|--|----------|--|----------|
| <i>Get to speak to friends that I don't see regularly.</i> | <i>2</i> | <i>Facebook can be really addictive and time consuming, which takes away from my time to study and play sport.</i> | <i>4</i> |
| <i>Get to share my photos with friends.</i> | <i>1</i> | <i>People sometimes bully other people on Facebook</i> | <i>2</i> |
| <i>Can read peoples posts when I'm bored.</i> | <i>1</i> | <i>I don't really know who has access to the information I put on Facebook.</i> | <i>1</i> |
| <i>I feel like I am missing out if I don't have one.</i> | <i>2</i> | | |
| | | | |
| TOTAL PROS | 6 | TOTAL CONS | 7 |

Although it was a tough decision, I decided not to make a Facebook account for the time being. Maybe when I'm a little older I might view the pros and cons differently.

Source 2 Pros and cons of creating a Facebook account

soccer. You absolutely love soccer and hate studying, but you know your parents will be disappointed if you do poorly on the test. They always say, 'If you want to go to university, you have to get better results in school!' Make a list of the pros and cons of playing soccer versus studying to help you decide what to do.

Extend your understanding

- 1 Compare your pros and cons list to the person next to you; discuss why your answers might be different.
- 2 Create a pros and cons list for another tough decision that you have had to make, or will have to make in the future.



Source 3 Making a quick pros and cons list can save time that we would otherwise spend indecisively thinking about both options.

14.3 Influencing prices

Setting prices is perhaps one of the most important and difficult decisions a business has to make. While a business would like to sell its products for the highest possible price, consumers will only buy the product if it is reasonably priced. If that price is too high, the business will not sell enough of the product to cover its costs. If the selling price is too low, the business is likely to sell a high number of products but will not make the desired amount of profit, if any. As is the case for all important business decisions, setting the price of a product needs to be a

carefully considered process. Often this process involves researching the market to determine what prices similar products are being sold for by other businesses, as well as considering indicators of how much consumers might be willing to pay for such a product. This can be obtained through surveys, observation, or the knowledge of sales of similar products. Once a business has an understanding of the market, it can use many methods or strategies to determine the selling price of its product, including those in the following table.

| Pricing strategy | Description |
|-----------------------|---|
| Cost plus margin | The selling price is equal to the total cost to produce the product plus an additional profit or margin that the business wishes to earn. |
| Economy pricing | Large businesses like Aldi or Bunnings who buy their products in bulk can often get significantly cheaper stock than smaller businesses. They aim to make a small profit from each sale, but achieve a high number of sales due to the low price that they can offer customers. |
| Penetration pricing | A business may enter the market with a low price to encourage consumers to try the new product. Once the product builds up enough regular customers, the business may raise the price to a level that is more profitable. |
| Premium pricing | The business tries to establish itself as a high-quality premium brand by setting a price higher than its competitors. This higher price can only convince people to buy it if the product is different to what is already on the market. |
| Psychological pricing | Charging prices that are not rounded to the nearest dollar amount is common practice for many businesses. When consumers are faced with a range of products and their prices, they are more likely to be attracted to the product that is \$9.95 than they are to the product that is \$10.00. Although the five cent difference seems insignificant, it is likely to attract more customers. |



Source 1 Consumers are more likely to buy items that are affordable.



Source 2 Businesses make decisions about what to produce based on what is most profitable.

Factors of production

When setting prices for a good or service, businesses must think about how much it will cost to produce these things. In order to do this, they must consider their **factors of production**. Factors of production (also called economic resources) are the resources we need for the production of goods and services, and include:

- land – natural resources that businesses use such as water, land or animal populations such as fish
- labour – the employees and their skills that are needed to produce and sell goods and services
- capital – money, equipment, buildings or any other items the business needs to produce goods or services
- enterprise – a business' ability to put land, labour and capital together to create goods and services.

For some businesses, the cost of producing goods and services can be very expensive. For example, businesses who manufacture cars can have very high production costs. They must purchase and maintain expensive equipment and machinery in order to assemble materials or parts of the car. The materials required to make a car can also be expensive for a car manufacturer to produce or purchase from other businesses. These resources are combined or put together in a factory, which costs money to buy or rent. The cars are then shipped or transported to the place that will sell them, which also requires resources to complete. The cost of production is one of the main reasons why we cannot buy a car for \$20 and why items that are expensive to produce are also expensive to buy.

Opportunity cost

When setting prices, businesses must make many decisions. A business tries to choose the alternatives that will earn the greatest profit. For example, a clothing factory would have to decide whether to produce shirts or pants. It will work out the costs of producing both shirts and pants, as well as the selling price of each. Its profit can be calculated by taking away the cost from the selling price.

PROFIT = SELLING PRICE – COST TO PRODUCE

| | Selling price | Cost to produce | Profit |
|--------|---------------|-----------------|--------|
| Shirts | 20 | 10 | 10 |
| Pants | 30 | 25 | 5 |

Source 3 Opportunity cost for a business

Even though the pants sell for a higher price, they cost more to produce. When a business has more than one option available, the **opportunity cost** is what it misses out on by not taking the next best option. The clothing factory will choose to produce shirts, meaning that their opportunity cost will be the lost production of pants. Businesses must analyse the costs and benefits of each option in this way when making an important decision. If they do not, they run the risk of making a bad decision that will cost the business money.

Understanding opportunity cost helps us put things into perspective. It makes us carefully consider what we miss out on as well as what we gain.

Why do businesses change their prices?

Sometimes businesses will need to change the prices they have already set. They do this for a number of reasons.

First, a business might decide to change the price of their product if the price they originally set is not successful in the market. For example, a business might have set a price that is too high for their product, and as a result consumers will not buy it.

Another reason businesses might increase the cost of their products is if their resources become more expensive. If materials or resources needed by a business become more expensive, they will often have to increase their prices in order to continue making a profit from selling their goods and services. If they do not increase their prices, they could lose money from producing their products – the exact opposite of what a business wants to achieve.

Businesses might also decide to change their prices if they must compete with another product on the market. Often businesses are forced to compete with cheaper prices of other businesses who are selling similar products. Consumers will often purchase the cheaper item if there is not a big difference in quality between two similar products. As a response, businesses might drop the prices of their goods or services so that they do not lose too many customers to their competitors.

For example, Bunnings Warehouse offers to beat the price of any competitor who offers the same product for cheaper. Their slogan is: “if you find it cheaper anywhere else, we’ll beat it by ten per cent”.

Similar to this, businesses such as Jetstar have ‘price beat’ guarantees. This means that if you find a flight cheaper than a similar flight offered by Jetstar, they will reduce their price so that it costs 10 per cent less than their competitor’s flight. Many businesses operate under this system so that they do not lose customers because of price.

Source 4 The opportunity cost of selecting your first choice (a pear) is your second choice (a banana).

First choice: pear

Second choice: banana opportunity cost

Third choice: apple

Fourth choice: mango

Fifth choice: kiwi

Sixth choice: orange



Source 5 Businesses such as Jetstar will lower their prices for consumers who can find a similar service at a cheaper price.

Check your learning 14.3

Remember and understand

- 1 What factors influence a business' decision to set a price?
- 2 What is 'opportunity cost'?
- 3 How does a business calculate its profit on an item it produces?
- 4 What would happen if a business set a too-high price for its product?
- 5 What are the four factors of production?
- 6 Suggest one reason why a business might change its prices.

Apply and analyse

- 7 Using each of the following pricing strategies, determine a suitable price for a business selling smartphones that cost \$230 to produce while other stores are selling smartphones of a different brand for \$849. Explain why you chose that particular price.
 - a cost plus margin
 - b penetration pricing
 - c premium pricing
 - d psychological pricing
- 8 Look at the business example from Source 3. Explain one reason why the pants might be more expensive to produce.

- 9 Why might a jewellery maker set a higher price than a two dollar shop to sell its jewellery?
- 10 Do you think it is fair for businesses to increase the price of their products? Why or why not?
- 11 Consider the following scenario:
The manager of a clothing factory has received a phone call from a supplier. The supplier has advised that the material they would normally sell to the clothing factory for the shirts has run out. As a substitute, the supplier offers material for dresses. The clothing company must now choose whether to produce dresses or pants. Using the table below, calculate the profit. Which product is the opportunity cost?

| | Selling price | Cost to produce | Profit |
|---------|---------------|-----------------|--------|
| Dresses | 25 | 25 | |
| Pants | 30 | 25 | 5 |

Evaluate and create

- 12 Pick up or download a catalogue from your nearest Aldi, Woolworths, Coles or IGA grocery store. Make a list of items that you think are using a psychological pricing strategy.

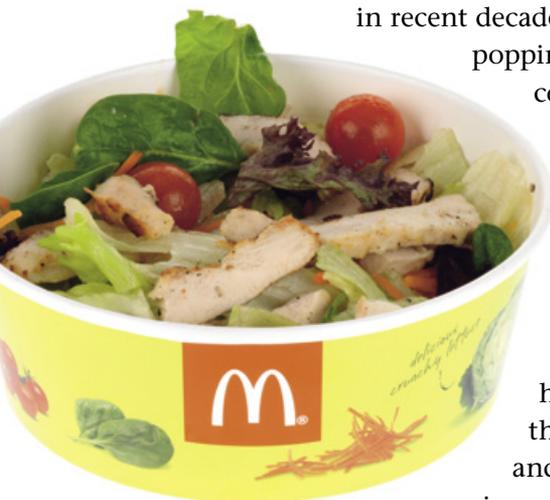
14.4 How businesses respond to consumer demand

Today's consumers are changing their preferences at an ever increasing rate. The internet age of smartphones and social media has allowed consumers to learn more about how their consumption affects their health as well as the world around them. This means that many of today's consumers look at more than just the price and basic features of a product. Successful businesses are those that produce goods and services that suit the changing needs of their customers. Businesses that fail to update their range of products find it difficult to remain competitive.

Health-conscious consumers

Consumers in wealthier nations such as Australia have become increasingly conscious about the effects of their consumption on their physical health in recent decades. Many people have made healthy lifestyle choices that see them being more physically active. As a result, the demand for health and fitness services around the country has boomed

in recent decades with new gyms popping up on every corner. This trend has also seen a decline in the popularity of unhealthy fast food options. Businesses have tried to respond by offering new healthy options in their product range and even changing their image through advertising.



Source 1 Many fast food chains such as McDonald's now offer healthier options in response to consumer demand.

Environmentally friendly consumers

In recent years, people have become better informed about the devastating effects that human consumption is having on the environment and its impact on our lives in the future. As a result, many consumers are switching to more environmentally friendly products. Many businesses have responded to this by using environmentally friendly materials and production methods. While this can be more costly to begin with, it helps the business build a positive reputation and attract more customers. On the other hand, businesses that harm the environment are seeing their reputations suffer as social media and the Internet spread word of their irresponsible practices.



Source 2 Comedian, actor and political activist Russell Brandt is one of a growing movement of people who are adopting a vegan diet without animal products. Many vegans have chosen to make a stand against the cruelty to animals and damage to the environment caused by the consumption of animal products such as meat and dairy.

Socially responsible consumers

In the past, most consumers simply purchased the products that offered the best value for money. This resulted in many large businesses seeking the cheapest possible production around the world, often exploiting the people and environment of

poorer nations. By keeping their costs down, they could offer cheaper products to consumers while still making a profit. Thankfully, there has been an increase in consumer awareness about the way in which products are produced. Many consumers today prefer to purchase the guilt-free option that does not exploit other people. Businesses today go to great lengths to get certification that supports the claim that they are treating the people involved in their production fairly.



Source 3 Products with a Fairtrade certificate on their packaging give consumers more assurance that workers and suppliers are being treated fairly.

Global business and consumer demand

In recent decades, advances in technology and the removal of trade barriers between nations have allowed businesses from all over the world to compete in the Australian marketplace. Today, many of the goods and services we consume are **imports** from other nations. The world leaders in business keep a close eye on marketplaces around the world and are quick to offer products that cater for changing consumer tastes in nations such as Australia.



Source 4 China is Australia's largest trading partner, accounting for 23.7% of Australia's overall imports in 2015.

Check your learning 14.4

Remember and understand

- 1 How do you think the internet, smartphones and social media might help consumers become informed about the effects of their consumption?
- 2 Briefly explain one change in consumer preferences that has taken place in recent years.
- 3 What are imports?

Apply and analyse

- 4 Identify three products that you think would have become less popular as a result of consumers becoming more health-conscious, and explain why.

- 5 Identify three products that you think would have become more popular as a result of consumers becoming more socially responsible and environmentally friendly, and explain why.

Evaluate and create

- 6 Use the Internet to research brands and products that are environmentally friendly or socially responsible. Construct a poster briefly explaining how each of these products or brands is environmentally friendly or socially responsible.

14B rich task

Market research

Market research is an important part of understanding what consumers want. Many businesses research their target market to understand consumer wants and needs as well as competitor activity in order to develop their products and pricing. Using the information they have gathered from market research, businesses can adjust or change their goods and services so that they are as appealing as possible to potential consumers.

Market research can take many forms. Some businesses will conduct their research in the form of interviews, observations, and surveys. These are examples of primary research, which means that the information is gathered directly for the business's needs.

Some businesses might not have the time to conduct their own primary research, and will choose instead to do secondary research. Secondary research involves gathering information that already exists, such as online, by looking at existing market research or reviewing their existing records. For example, they might review which products have been popular each month and decide whether or not they want to sell more or less of any one product.

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Conducting surveys

Surveys are one of the most common methods of market research. A survey involves asking a group of people a number of questions about a product or any other topic. Their responses to the survey questions are meant to represent the opinions of the wider market or population and can help businesses make decisions.

- Step 1** Identify what you information you need to find out. Knowing what information you need will help you when it comes to developing your survey questions. For example, you might like to find out how much people are willing to pay for a movie ticket.
- Step 2** Identify who you want to survey. Do you need to know what everyone thinks about a topic? If it is important to know what the entire community thinks, you would select members of the community at random so that you get a good mix of opinions that truly represent the community. However it might only be appropriate to survey a portion of the community. For example, a real estate agency that wants to sell houses might only survey people who are over 18 years of age.
- Step 3** Decide how you will conduct the survey. Surveys can be given as a written questionnaire, as a face-to-face interview, or as an interview over the phone. There are advantages and disadvantages to each type. For instance, written questionnaires are easy to give to a lot of people and are very quick, but they can have a low response rate. Face-to-face interviews have the best response rate, but they are even more time consuming to conduct than telephone interviews.
- Step 4** Decide how many people to survey. It is thought that the more people you survey, the better. The overall results of a group of 100 people will be more useful to a person or business than the overall results of five people. However, surveying larger groups can also be time consuming.

Step 5 Develop your questions. Once you have decided on the above, you should write your questions down. It is important that survey questions are easy to understand. Questions might include:

- How old are you?
- What is your occupation?
- Have you eaten/gone to/been to/done _____ in the last week?
- On a scale of 1 to 10, what do you think of _____?

Step 6 Conduct the survey. Make sure you have all materials required to conduct the survey before you begin. If you are conducting a written survey, you will need to print and distribute the questionnaires by hand or mail. You will also need to specify when the questionnaire needs to be returned. If you are conducting interviews, you will need to arrange a time to call or meet with the people you are interviewing. You will also need to make sure someone is recording survey responses.

Step 7 Look at the results of the survey to analyse how participants responded. Did a majority of participants answer yes or no to a question? What was the average rating on your survey scales? Use the information you have collected to understand market opinion and to help you make decisions.

Apply the skill

- 1 Imagine you are a business owner who needs to make a decision about whether or not you want to sell a particular product. In groups of three or four, use the steps above to prepare a survey on the product (it can be anything, such as a food item or just something in your pencil case).
- 2 Conduct your survey on as many class members as you can and record your results.
- 3 Present your survey to the class and explain how your results might assist you to make a decision as a business owner on whether or not you should sell your chosen product.

Extend your understanding

- 1 Pick a business you are familiar with and answer the following questions.
 - a What kind of products do they sell?
 - b Why do you think they have chosen to sell these products for this price?
 - c What kind of information do you think this business would want to know about their products?



Source 1 Conducting surveys is one way for businesses to find out whether their customers are satisfied with their performance.

14.5 Why we work

Have you ever wondered why most adults get up every morning and rush off to work? If you haven't, it's probably because the answer seemed so obvious – they do it to earn money, right? While this is true, in reality nobody works for money alone. There are many other important reasons that motivate people to get out of bed each morning and head off to work. In this unit, we will be exploring a number of these reasons.

Material and non-material reasons for working

One of the best ways of understanding the many reasons why people work is to organise these reasons into different categories. Economists often group the different reasons for working according to whether they are material or non-material.

- Material reasons for working include anything related to financial gain (e.g. money or financial benefits). It might help you to think about material reasons in terms of physical things that you can touch (like food and clothes).
- Non-material reasons for working include anything related to non-financial gain (e.g. job satisfaction, self-esteem, happiness, sense of community). It might help you to think about non-material reasons in terms of things that you cannot touch (like ideas, thoughts and feelings).

Source 1 lists some of the most common material and non-material reasons why people work.

In reality, both material and non-material reasons for working affect how we feel about our place in society and how happy we are generally. We will now look more closely at a range of these different reasons.

Understanding material reasons for working

As shown in Source 1, there are many different material reasons why people choose to work, but earning an income is probably the most important among them.

Earning an income

One of the most important material reasons why people work is to receive an income. Depending on the type of work people do, their income can be paid in different ways:

- People who work for companies or organisations that they do not own (i.e. employees) earn their income in the form of a wage. A wage is a fixed amount that is paid regularly (e.g. weekly, fortnightly or monthly) to an employee in return for goods or services provided to the company. For example, an employee who works at a local supermarket might earn their wage by working on the checkout or stacking shelves for 25 hours a week. They will be paid in return for the hours they work.

| Material reasons for working | Non-material reasons for working |
|--|---|
| <ul style="list-style-type: none"> • Income (i.e. money earned by a person in exchange for goods or services that can be used to buy things such as food, clothing, cars, houses) • Superannuation (i.e. money paid into a fund that can be accessed when a person retires) • Other financial benefits (such as cash bonuses, car allowances, meal allowances, staff discounts) | <ul style="list-style-type: none"> • Ability to learn new skills and improve existing skills • Offers a sense of pride, value, respect, identity and personal achievement (and is therefore generally better for people's physical and mental health) • Opportunities to contribute to the success of an organisation/ company • Ability to help people and/or make a difference for an important cause (such as animal welfare, the environment, refugees) • Opportunities to express creativity and try new things • Opportunities to build strong relationships with work colleagues (and make new friendships) • The ability to achieve a good 'work-life balance' |

Source 1 A range of material and non-material reasons for working

- People who own their own company or organisation (i.e. business owners) earn their income in the form of profits taken from the business. Unlike employees, business owners might not earn a regular amount or be paid regularly. Instead, they may earn large amounts when their business performs well, or small amounts when the business is not performing well. For example, the owner of an ice cream shop at the beach may earn a lot during the busy summer months, and only a small amount during the winter months when business is slow.

The amount of income that people earn will depend on a wide range of factors including:

- how many hours they work and the days on which they work (e.g. employees may be paid more for working late at night or over the weekend)
- the difficulty and specialised nature of the work they do (e.g. surgeons who specialise in a certain type of medicine can demand higher wages for their services)
- the qualifications and experience that they have (e.g. lawyers who have excellent qualifications and a lot of experience winning cases will generally be paid more)
- how many other people are able and willing to do the same job (e.g. teachers who work in remote locations can often receive additional payments)
- laws regulating the minimum amount that workers must be paid.

Other financial benefits

In addition to money earned as income, people also receive a number of other material benefits. The most common is called superannuation (or 'super' for short). Superannuation is money paid regularly into a fund that cannot be accessed until retirement. In Australia, superannuation payments are compulsory for employers, meaning that every Australian employee is required to have a superannuation account that they pay money into over their lifetime so that they can access this money to live on once they stop working.

Other material benefits include things like:

- bonuses – money paid to employees/business owners if they perform well in their jobs or if the company performs very well



Source 2 According to a 2016 study by the Australian Taxation Office, surgeons are the highest paid professionals in every state and territory of Australia. They can demand such high wages because of the difficult and specialised nature of the work they do.

- staff discounts – reductions in the standard price of goods for staff (particularly those who work for retail companies such as clothing stores, supermarkets, airlines)
- allowances – money provided to employees in addition to their wage to pay for things like car expenses and meals (particularly if they travel a lot as part of their job).

Understanding non-material reasons for working

As shown in Source 1, there are many different non-material reasons why people work. Unlike material reasons, non-material reasons can vary widely depending on each person and what they value. For some, the feeling they get supporting an important cause (such as protecting endangered animals) or caring for others (such as nursing or social work) is the most rewarding part of their job. For others, the ability to learn new skills and make new friends at work is more important. Some of the main non-material reasons why people work are explored below.

Source 3 Some companies pay bonuses to their employees if they perform well or if their work contributes to the strong performance of the company. Bonuses are a material benefit paid on top of a person's wage.



The ability to gain new skills and experience

Most people get a great deal of enjoyment and satisfaction from learning new things. For some, the ability to learn new skills on the job is the most important aspect of their job. The opportunity to learn keeps many employees interested and helps them to avoid becoming bored with their jobs. The opportunity to practise new skills and become an expert at performing them at work also makes them feel valued and respected. New skills and experience also often bring new opportunities for promotion and higher wages (although this is often a nice side effect of learning new things rather than the main motivator).

Purpose, self-esteem, health and happiness

Another reason why people work is because it provides them with a sense of purpose and boosts their self-esteem. Although we all sometimes dream

about being free to do whatever we choose, in reality having a purpose in life is something that's important to everyone – regardless of what they do. Most people in society today tend to define themselves (in some way) by the work they do.

For instance, most teachers enjoy their jobs because they can see that they are making a difference in the lives of their students by teaching them new skills and giving them the best possible start in life. This often gives teachers a sense of purpose knowing they are contributing to society in a positive way.

Similarly, nurses generally feel a sense of satisfaction knowing their work and care is helping to improve the lives of people who are unwell. Nurses make many positive contributions to the lives of the people they care for (as well as their families), which in turn gives them a sense of self-worth and happiness.

Despite the fact that governments often provide some financial assistance to those who are out of work, in most cases adults feel the need to earn their income through work (rather than receiving government support). Many studies have proved that low self-esteem is a common problem for people who lose their job or are unable to find work. Unemployment has also been proven to result in negative effects on people's health and well-being. This is one of several reasons why governments all around the world aim to build strong economies that provide their citizens with opportunities to find meaningful work, rather than just giving people money.

Helping others and 'giving back'

The chance to help others and give back to the community is another non-material reason why people choose to work. For some people, this might mean working for a registered charity or community event (such as the Cancer Council, Lifeline, RSPCA, beyondblue or Clean Up Australia) because they feel the work being carried out by these organisations helps others and builds a better society for everyone.

Source 4 Each year, hundreds of thousands of Australians, volunteer their time to take part in Clean Up Australia events around the country. Since the event started in 1990, volunteers have donated 31 million hours of their time to clean up rubbish from their streets, bushland, parks and waterways.



Many people who work for charity organisations are paid for their work, but many are not paid at all. These people are known as volunteers. Volunteers share their time and skills for many different reasons. Some volunteer because they are retired and have the time, others do it to meet new people and learn new skills and others do it to improve their local community. Whatever the reason, most volunteers also gain a sense of pride in helping others and giving back to society through their work.

Work–life balance

The concept of ‘work–life balance’ has become very important for many people over recent years. It refers to the amount of time we spend at work compared to the amount of time we spend outside work (e.g. playing sport, watching movies or relaxing with friends and family).

With the introduction of new communication technologies (such as smartphones and social media) and the trend towards 24/7 business operations, many companies now expect their employees to be available by phone and email after work hours and on weekends (even though they may not be paying their workers for this time). As a result, employees feel that the line between their work lives and private lives is becoming very blurred. While most

employees expect to work overtime now and then, too much of this can result in a poor work–life balance. For many employees, the ability to ‘switch off’ from work is an important reason why they choose to work where they do.



Source 5 Finding the right work–life balance is very important for our wellbeing but is becoming increasingly difficult in Australia's highly competitive market for jobs. It is suggested that eight hours of work, eight hours of rest, and eight hours of leisure time per day provide a rough guide for achieving this balance.

Check your learning 14.5

Remember and understand

- 1 What is the difference between material and non-material reasons for working?
- 2 List three material reasons why people work.
- 3 List three non-material reasons why people work.
- 4 What is work–life balance and why is it important?

Apply and analyse

- 5 Why do surgeons earn so much money?
- 6 Look at Source 4. Why do you think these people are volunteering their time for the Clean Up Australia campaign?
- 7 Why do you think work–life balance is more difficult to achieve today than it was 20 years ago?

Evaluate and create

- 8 Think about a job you'd like to do once you leave school and begin working. List at least five reasons why you want to do this job. Now read over each reason and decide whether it is material or non-material.
- 9 Work in pairs or small groups to conduct a survey of 5–10 of your teachers, family friends, parents or guardians. Find out:
 - what jobs they do
 - why they do the jobs they do
 - whether they like their jobs
 - whether they think they have a good work–life balance.

Compile the results in a PowerPoint presentation and deliver it to your class.

14.6 Types of work

Work plays an important role in the lives of nearly all people. Work allows us to earn an income, which enables us to buy the things we need and want to live a fulfilling life. Furthermore, through working we can contribute to society and develop our skills and knowledge in different areas. Many of the skills that you are taught in school are intended to help you in your working lives once you leave school, despite the fact that it has been estimated that 65% of students currently at school will be employed in jobs that are yet to be created.

There are many different ways to classify jobs performed by people. One such way is to look at the different types of contracts between the employee (worker) and employer (such as a business).

- *Full-time* – Full-time workers are those that are employed for 35 hours a week or more on an ongoing basis. Full time workers often receive more benefits, such as sick leave and annual leave, than casual workers.

- *Part-time* – Permanent part-time workers are entitled to the same benefits as full-time workers but they work set times that amount to less than 35 hours a week.
- *Casual* – Casual employees are not contracted to work set hours and are generally not entitled to many of the leave entitlements that permanent employees are. Because of the lack of job security and lost benefits, casual workers are generally paid more than permanent workers performing the same job.

Voluntary work

Work allows a person to contribute to society in a positive way, but some people feel the need to help others so much so that they will even work without pay. This is known as unpaid volunteer work and is common with many charities and foundations who generally aim to make the world a better place.



Source 1 People volunteer for organisations such as the Western Australian State Emergency Service (SES) because they feel good about helping others in need.



Source 2 Amnesty International volunteer at World Refugee Day

The important thing about volunteer work is that it is completed without any expectations of gaining anything in return. However in some cases, volunteering can be a good way of gaining experience. There are many ways you can volunteer including:

- Social justice organisations or charities – For example some people do work for charities who aim to improve people’s lives. These include organisations such as Oxfam Australia or Amnesty International, who rely on volunteers to help them keep their organisation running.
- Health organisations – You may have seen a St John Ambulance at a local sporting event or festival. Organisations like these provide medical support and first-aid to community events around Australia.
- Environmental organisations – These organisations rely on people who are willing to help the environment. For example, Clean Up

Australia Day requires the work of volunteers to pick up rubbish and help our environment.

- Community support organisations – These organisations run for the benefit of the entire community and rely on volunteers to provide important services. For example, volunteer fire fighters or members of the State Emergency Services (SES) can make a great difference in the lives of people in their community.

Working from home

In some circumstances, people can also work from home. This kind of work is becoming more common in the workforce, thanks to improvements in communication technology.

For people who just need access to a computer and a phone to do their job on a day to day basis, working from home can be an option. For example, writers or graphic designers could complete most of their work



Source 3 Some people can work from home if they do not rely on a certain location to do their job.

remotely (meaning not in an office or with the rest of a business), with access to email, file sharing services like Dropbox and Google Drive, and the Cloud to store and transfer files. It might not make a difference if someone works on their computer at home or in an office building.

Working from home might be preferable to people for a number of reasons, such as:

- It saves a lot of travel time
- It allows people with a disability or illness to continue working without needing to travel
- They can concentrate better working away from a noisy office environment
- It gives them more flexibility to work when they want to
- It can be a less stressful environment than an office or other workplace
- It allows some working parents to stay home with their children.

However, the ability to work from home often depends on the type of work a person is employed to do. For example, a brain surgeon would not be able to operate on his or her patients from home. They would require access to equipment and support of other employees such as nurses, anaesthetists, other doctors – and not to mention the patient – which

they do not have at home. This could be applied to many other professions that would not be able to work from home. For example, teachers, taxi drivers, fire fighters, or any other job that needs to access different resources not available in the typical home setting.

Internships

Internships are a form of work that involves a person working for a business or organisation to gain experience in a particular field. Most people that do internships are young people, trying to break into an industry and looking for experience to learn more about their chosen career path.

Internships can be paid, but are more commonly unpaid. This is because many people view internships as a learning experience. Regardless of whether or not they are paid, people completing the internship should be benefiting from their work and time within a business or organisation. In some instances, businesses may use interns to complete work rather than paying employees. If the business or organisation is the one benefiting from the intern's work, then it is possible the intern should be a paid employee.

For example, if the internship is a permanent

position, and the intern is completing work normally done by a paid employee, then the organisation they are working for should be paying them as an employee.

However, if the position is short-term and the organisation does not rely on an intern to complete any important work, but rather observe and learn from what others are doing, it is more likely that the position is going to be helpful for the intern and a good learning experience.

Contract work

Contract work refers to an arrangement in which an employee will work for an employer for a set amount of time on a particular task, which is specified by a contract. They can work part-time or full-time on the job, depending on the terms they have agreed to in the contract.

People working on a contract, known as contractors, are not guaranteed any further work once the task they have been contracted to do is over. Unlike full-time and part-time employees, they are not entitled to any benefits such as sick leave.

Some people do not like contract work, as they prefer the stability of ongoing full-time work. However others might like the flexibility of contract work, which allows contractors to work in different environments, for different employers and on a range

of tasks that they might find more interesting.

Contractors typically earn a regular income by organising regular job contracts, so that when one contract comes to end, it is not long before the next job starts.



Source 4 In Australia, people who study medicine complete internships, during which time they must gain enough clinical experience to be registered as a medical practitioner.

Check your learning 14.6

Remember and understand

- 1 Why does work play an important role in our lives?
- 2 How many hours does a person who is considered full-time work each week?
- 3 Explain two differences between casual and permanent employees.
- 4 What is contract work?

Apply and analyse

- 5 Sarah works at a local fish and chip shop. She doesn't have set hours but often gets called in by the owner of the shop to work on the weekends. What type of employment contract is Sarah working under? Justify your response.
- 6 Why do you think the government introduced

superannuation to supplement the age pension?

- 7 Why do some jobs allow people to work from home and others don't?
- 8 How are completing volunteer work and an unpaid internship similar or different?

Evaluate and create

- 9 Visit the Western Australian Department of Training and Workforce Development's Career Centre website (www.careercentre.dtwd.wa.gov.au) and research three types of jobs that you may be interested in doing once you finish school. Write a summary of what the job is about, what kind of skills and education you need to do the job, and why you think that the job would be suitable for you.

14.7 Earning an income

Although work is for most people their main source of income, there are other ways that a person can earn the money they need to pay for their needs and wants. Some people, for example, choose to work for themselves and open a business. People can also use their money to purchase investments such as shares or properties. These investments can then return their owner an even greater income over time.

Owning a business

Owning a business is a dream that many Australians have. It allows a person to earn an income while being their own boss. However, owning a business is also a big responsibility. Most businesses require the owner to invest a great deal of time, effort and money, all of which could go to waste if the business doesn't perform well enough. For this reason it is important for prospective business owners to carefully plan out how they will start up and run their business for the foreseeable future. For successful business owners, the sky is the limit. Running a business allows the owner to provide people with a good or service in a way that reflects the personality, ambition and character of the owner. With the right approach, some small businesses can grow into large businesses that can earn a plentiful income for their owner.



Source 1 While we often hear stories about successful businesses that have made their owners rich, there are many more stories of failed businesses. According to the Australian Bureau of Statistics, 60% of businesses cease operating within the first three years.

| STOCK | BID | OFFER | LAST | VOL | STOCK | BID | OFFER |
|-------------|-------|-------|-------|-----|------------|-------|-------|
| BLR GROUP | 0.060 | 0.070 | 0.000 | 0 | FARM PRIDE | 0.100 | 0.140 |
| BLRGOLD | 0.098 | 0.140 | 0.000 | 0 | FE LIMITED | 0.026 | 0.030 |
| BLRPGAS | 0.325 | 0.335 | 0.335 | 77T | FEDAX | 0.120 | 0.130 |
| BLRZ | 1.000 | 1.020 | 1.000 | 4T | FERRLOWEST | 0.024 | 0.033 |
| EVOLUTION | 1.935 | 1.940 | 1.935 | 2M | FERRUM | 0.052 | 0.057 |
| EVZ LTD | 0.041 | 0.050 | 0.050 | 5T | FIDUCIAN | 0.800 | 0.810 |
| EXALT RES | 0.000 | 0.000 | 0.000 | 0 | FIAX | 0.110 | 0.125 |
| EXCAX | 0.040 | 0.049 | 0.040 | 50T | FINBAR | 1.075 | 1.080 |
| EXCALBUR | 0.001 | 0.002 | 0.000 | 0 | FINDERS | 0.200 | 0.220 |
| EXELA | 0.010 | 0.090 | 0.000 | 0 | FIRESTONE | 0.008 | 0.009 |
| EXGLDR | 0.190 | 0.195 | 0.190 | 30T | FIRSTFOLD | 0.014 | 0.015 |
| EXGOLD | 0.260 | 0.265 | 0.260 | 5HT | FISSION EN | 0.020 | 0.035 |
| EXOMA DNER | 0.072 | 0.075 | 0.072 | 35T | FITZROYRES | 0.049 | 0.068 |
| EXAX | 0.430 | 0.460 | 0.000 | 0 | FLATGLASS | 0.225 | 0.230 |
| EXHOLD | 3.360 | 3.500 | 0.000 | 0 | FLEETWOOD | 0.050 | 0.190 |
| EXLITE | 0.020 | 0.053 | 0.000 | 0 | FLEXGROUP | 10.21 | 10.23 |
| EXMOR | 0.395 | 0.400 | 0.395 | 18M | FLIGHT CTR | 3.360 | 3.370 |
| EXMOR MIN | 0.008 | 0.010 | 0.008 | 3M | FLINDERS | 24.89 | 24.90 |
| EXMOR COI 1 | 0.007 | 0.008 | 0.008 | 2HT | FOLK | 0.084 | 0.085 |
| EXMOR COI 2 | 2.830 | 2.840 | 2.830 | 7T | | | |
| EXMOR COI 3 | 0.034 | 0.035 | 0.034 | | | | |

Source 2 Large public companies shares are sold on the Australian Securities Exchange (ASX). The ASX schools sharemarket game allows students to learn about investing by tracking their investment of a hypothetical \$50 000 into shares of their choosing.

Shares

Often large companies look for investors that will give them money in exchange for a share of the company. This allows the company to grow its operations while providing the investor with an income when the company makes a profit. If the company grows in value, so does the value of the shares owned by the investor. The investor or shareholder can sell the shares to make a profit, or they can continue to earn income from the dividends paid out of the profits earned by the company. The benefit of shares is that they are fairly easy to buy and sell, and don't require large sums of money like many other investments do. Buying shares can also be a very risky investment. If a company loses value or goes bankrupt, the shareholder is likely to lose any money they have invested in the company.

Property

In recent years, many people have used their savings to invest in properties such as houses or shops. By owning properties, the investor or landlord can lease the property to a tenant in exchange for money or rent. Purchasing a property in Australia requires

a large amount of money which people generally have to borrow from a bank. This means that they have to repay the amount back to the bank over many years, with **interest**. The large increase in the price of properties around Australia has meant that people have to take out even greater loans. For this reason, purchasing a property as an investment or

home has become very difficult for many Australians today. While properties are an expensive investment, they allow the owner to increase their value through renovations. They also have several tax benefits that allow the owner to reduce the amount of tax they have to pay on their overall income.



Source 3 Once an essential part of 'the Australian dream', owning their own home has become an unachievable goal for many young Australians who simply won't be able to afford the higher property prices.

Check your learning 14.7

Remember and understand

- 1 Describe three ways in which a person can earn an income.
- 2 What are the risks and benefits of starting a business?
- 3 Where are the shares of public companies sold?

Apply and analyse

- 4 Describe one advantage and one disadvantage of shares as an investment.
- 5 Describe one advantage and one disadvantage of property as an investment.

Evaluate and create

- 6 Find the ASX sharemarket games website (<http://www.asx.com.au/education/sharemarket-games.htm>) and register to play the schools game.

14.8 Retirement

What is retirement?

The majority of people will work for most of their lives in order to earn an income to live. Some may work for an employer to earn a living, however some may work for themselves operating their own business. But when we get older, our bodies cannot keep working in the same way due to age and health reasons. Eventually there comes a point where we enter retirement.

Retirement age is generally considered the age where someone can quit work and move onto a form of unearned income – usually the age pension, superannuation or a combination of both. The retirement age in Australia in 2014 was 65 years of age for both men and women, although it will rise to 70 years of age by 2035. However, an increasing trend for many people is to reduce their workload during the week. This means they cut their working hours from full-time to part-time to casual hours. Eventually they stop work altogether.

While many people save money for retirement while they are still working, most people will also receive an age pension when they retire and then some further income from superannuation.

The age pension

The age pension is a form of unearned income provided by the government. It ensures that all citizens in the country are able to have a decent standard of living. Currently around 65 per cent of retirees rely on an age pension as their main source of income.

How does the age pension compare to the average wage?

Average fortnightly earnings for a person who works full time before retirement is approximately \$1318 per fortnight after paying tax. This compares to a single person receiving approximately \$874 per fortnight on the age pension.



Source 1 Many people look forward to retirement as it allows them to enjoy their free time and pursue interests that were not possible during their working lives.

How does the government afford it?

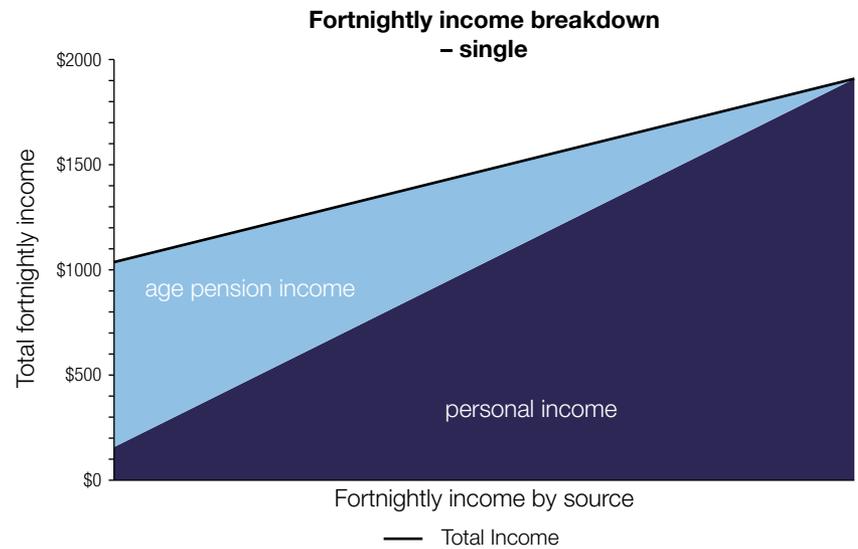
During our lifetime, we pay taxes to the government. This tax is used to provide us with many goods and services. One of these is the age pension. However, Australia's population is changing with families having fewer children and people living longer. That means there are fewer taxpayers that can pay tax, and more getting the age pension. This means it's getting more difficult for the government to afford paying the age pension.

Is there a limit to who can receive the age pension?

To receive an age pension, people in retirement face both an income test and an assets test. The main reason for this is that the provision of the age pension is based on need. Pensions are provided to people in retirement because they have no other way of earning income because they either can't work or money they have earned from savings and investments won't be enough to provide a decent standard of living. The test means that if a retired person earns an income from other sources or owns a lot a wealth in property, they will not be able to access the pension.

What is an income test?

Income is money that is earned from work and other forms of investment such as rent from property, shares and term deposits. It can also include money earned from overseas. If your income is above a certain limit, your pension payment will be reduced.



Source 2 The amount of income a person receives from the age pension depends on their other income.

What is an assets test?

The value of your assets is taken into account to work out how much age pension you may receive. An asset is something you own that is of significant value such as another home you may be renting out to someone or ownership of a business. Assets owned overseas are also included. Your residential home, if you live in it, is not counted as an asset. If your assets exceed a certain amount, your age pension payment will be reduced.

Concession and healthcare cards

Even if a person has too much in terms of other income and assets, they still are able to get a concession card. For retirees, there are two types of concession cards that provide a range of benefits, including help with the cost of medicines. These are:

- the Commonwealth Seniors Health Card which helps with the cost of prescription medicines and other health services if you are of pension age but not eligible for the age pension
- the Pensioner Concession Card that entitles pensioners to reduced-cost prescription medicines, healthcare concessions and other concessions offered by state and territory governments and local councils. These other concessions may include cheaper rates for power, water, local government rates and cheaper public transport.



Source 3 Superannuation helps us to save for our retirement.

Superannuation

Superannuation is a way of saving for retirement. It is money that is saved through a combination of employer, employee and government contributions towards a superannuation fund account. This is like a bank account but it can't be accessed till you reach what is known as your preservation age. The preservation age for most people is 60 years of age.

Once you earn more than \$500 a month, your employer automatically pays a contribution towards your superannuation fund account. Employers must pay a set amount into the super fund account. This is called the superannuation guarantee and it's the law. On top of this, sometimes the government will add to your contributions if you earn a low income. Of course, you can add to your superannuation fund too. The contributed money is invested by financial companies on your behalf to earn even more money in the form of interest.

Over the course of your working life, these contributions grow or 'accumulate'. When you retire, you will have money to live off. Superannuation is significant in Australia because it is a compulsory form of saving for every employee.

Why is superannuation compulsory?

During the 20th century, the government supported retirees by funding an age pension. This was made available when people retired which was at the age of 55 for women and 60 for men. However, with better medicine and health, people are living longer. This means it costs the government much more money to provide a pension. In addition, families are having fewer children which means that there are fewer taxpayers (known as 'non-dependants' because they earn their own form of income) who pay taxes that fund age pensioners (known as 'dependants' because they depend on the government for an

income). As a result, the government brought in compulsory superannuation as a way to make people save money for retirement and therefore supplement the age pension. Other moves to reduce the cost of providing the age pension include raising the retirement age and having an income and assets test to decide whether a person needs an age pension.

Once people have retired and reached their preservation age, they can access their superannuation funds in three ways. They are:

- as a lump sum. This means that all of the money that has accumulated over the lifetime of work can be paid out to you. An advantage is that you get a very large payment but a disadvantage is that you also pay a lot of tax from it. The government tries to discourage people from having their superannuation fund paid out in full.
- as a retirement income stream. This means that rather than taking out a whole lump sum, you take out a small amount each fortnight. The advantage of this is that you can still qualify for the pension and add to your income. The superannuation fund not yet accessed will still earn interest as well.
- a combination of both.



Source 4 Superannuation is compulsory in Australia.

The benefit of having access to superannuation at preservation age means that if you're not quite ready to give up your job when you reach 65, you can have a transition into retirement rather than having to quit. You will have some say on when to leave the workforce. You don't have to retire at 65. You can work if you want to as long as you are able to. The government sees a benefit in this as it creates a larger group of non-dependants to obtain valuable taxpayer dollars in order to keep providing the goods and services which we all are accustomed to.

Check your learning 14.8

Remember and understand

- 1 What is the age pension?
- 2 What is superannuation?
- 3 What is generally considered the retirement age?

Apply and analyse

- 4 Explain why there is an income and assets test for people to receive an age pension.
- 5 Explain why the government has made superannuation compulsory.

- 6 Explain why the government discourages people from taking out their superannuation money as a lump sum when they retire.

Evaluate and create

- 7 If you worked all of your life, invested your savings wisely and became very wealthy, why should you be disqualified from receiving an age pension? Justify your response.

14C rich task

Career change

Decades ago, it was considered normal to stay in the same job or with the same employer for the majority of your working life. Employees were expected to be loyal to their employer, who, in turn, was expected to provide job security to their employees. Today, people are changing jobs, employers and careers at an ever-increasing rate.

There are many reasons why this change is happening. First, the rapidly changing work environment is creating and destroying jobs at a much faster rate than before. This means that businesses are constantly looking for employees to perform the new jobs that arise, while many employees are finding that their old job no longer exists.

Some employees find it much faster to climb the career ladder by moving from business to business, gaining a range of experience along the way. In fact, many employers today prefer their employees to gain experience in different areas, rather than stay in the same job for many years.

| Age group | Time spent in job |
|--------------|-------------------|
| 25 and under | 1 year 8 months |
| 25–35 | 2 years 8 months |
| 35–44 | 4 years 8 months |
| 45 and over | 6 years 8 months |

Source: Department of Employment, Australian Government

Source 1 Time spent in the one job vs age group



Source 1 The average Australian today will work 17 different jobs across five different careers before they retire.

skilldrill

Interpreting economic data from a table

An important part of being an economist is learning how to read data. Data can come in many shapes and forms and is normally in the form of numbers, facts and statistics. An economist must interpret this data to gain information which can be used for decision making. Data is often presented in tables or graphs to make it easier to interpret. Economic data from tables can be interpreted using the following steps:

- Step 1** Read the questions. By reading the questions first, you will know what to look for in the table, and will have a better understanding of the purpose of the task.
- Step 2** Read the headings. Read the title of the table and the headings of each row and column in the table. The headings will tell you how the data is being categorised and if there is a relationship between categories.
- Step 3** Find the relationship. Find a relationship between the categories. What happens to one column when the numbers in the other column get bigger? Do the numbers increase, decrease or stay the same? If they increase or decrease, do they do so by the same amount?
- Step 4** Consider the causes of the relationship. Try to think about why the two categories are related in the way that they are.
- Step 5** Identify points of interest. Are there any values that stand out for being much bigger or smaller than other values? If so, what might be the reasons for this?
- Step 6** Answer the questions.

Apply the skill

Using the steps in the skill drill, answer the following questions about the data in Source 2.

- 1 What is the relationship between people's ages and how long they stay in their given jobs?
- 2 Why do you think this might be the case?

Extend your understanding

- 1 Interview a parent or teacher about their perspective on changing jobs. In your interview you should ask them about the different jobs that they have worked, as well as what they liked or didn't like about the jobs and why they changed.



Source 2 Interviewing an adult is a great way to learn about different jobs.

Producing and consuming

Innovation and entrepreneurship

Innovation has taken humans from primitive cavemen to the advanced rulers of the planet that we are today. Innovators can be scientists, politicians, business owners or factory workers; what defines an innovator is their ability to think outside the square and come up with new ideas. An entrepreneur is a person who sees and takes a business opportunity. Like innovators, they too have to see opportunities that others are not able or willing to take. Many innovators are also entrepreneurs: they come up with a brilliant idea and go on to make it a commercially successful business concept. Innovators and entrepreneurs are more than just dreamers; they carefully plan and set goals that can take a lifetime to achieve.



15A

What are the characteristics of an entrepreneur?

- 1 Why do you think it is important for businesses to be creative and demonstrate initiative?
- 2 What strategies can people use to set and achieve goals?



chapter 15

Source 1 Twitter co-founders (front row, from left) Jack Dorsey, Evan Williams and Biz Stone are seen here at the New York Stock Exchange. Twitter is one of the most visited social media platforms today, but it must continue to innovate if it is to remain a viable business.

15.1 Innovation and entrepreneurship

Entrepreneurs

An entrepreneur is someone who takes on the risk of starting their own business. They see an opportunity or have an idea for a new business that will earn them an income and possibly satisfy other personal goals. However, not all businesses are successful. Many entrepreneurs risk losing the time, effort and money that they have invested in the business idea if it doesn't work out.

Successful entrepreneurs are often characterised by the following:

- willingness to take calculated risks
- resilience or the willingness to bounce back from failures
- strong work ethic
- passion for the business they are in
- understanding of finances.



Source 1 Michael Malone started his company iiNet in a garage in Padbury, Western Australia, with his friend Michael O'Reilly. In 2015, they sold the internet company in a deal for over 1.5 billion dollars.



Source 2 Janine Allis is an Australian entrepreneur who founded Boost Juice in 2000. Boost now has more than 350 stores in 17 countries.

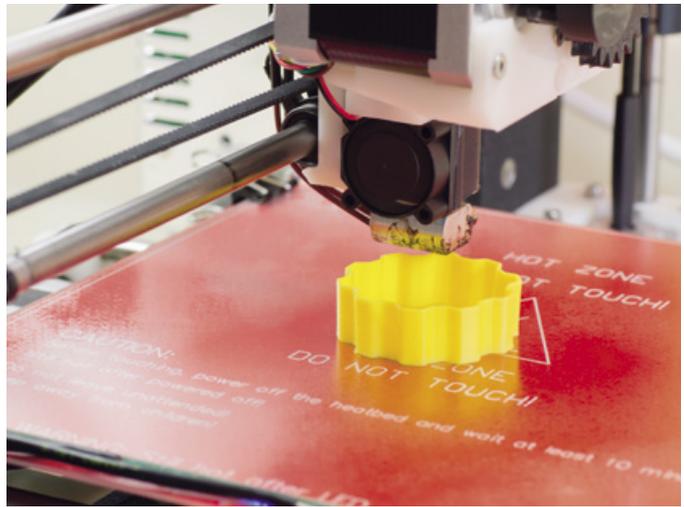
Innovation

Innovation is the act of creating or starting something new and different. Innovators can improve on an existing idea or create something completely new from scratch. Businesses that are innovative will be successful as they are constantly finding new ways to stay ahead of their competition. This is known as a **competitive advantage** and is incredibly important for today's businesses, which can face competition from all over the world. Quite often, an innovative idea will present an opportunity for an entrepreneur to start a business. Innovation not only creates business opportunities but can benefit society as a whole. It is responsible for nearly every item that you use on a day-to-day basis.

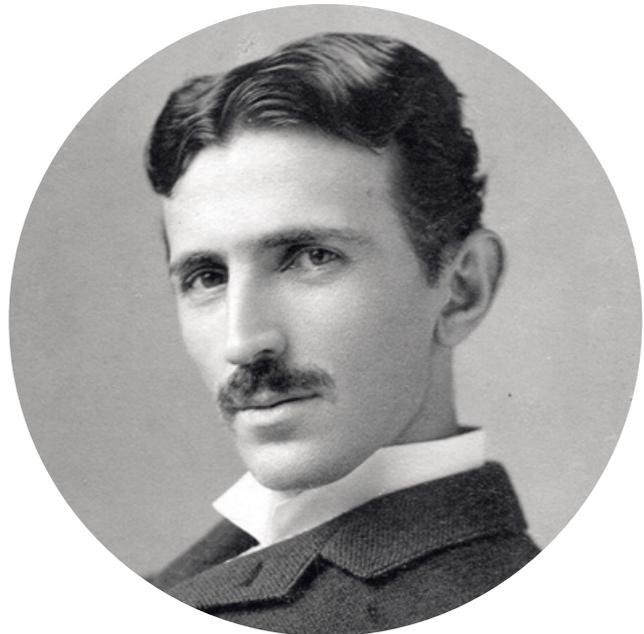
Successful innovators are often characterised by the following:

- 1 They question everything and consider new possibilities.
- 2 They observe their surroundings and look for ways to improve things.
- 3 They network with different types of people and are open to different ways of thinking.
- 4 They experiment with new ideas.
- 5 They draw connections between the different things that they learn about.

Source 4 Serbian scientist Nikola Tesla had hundreds of inventions from AC and wireless electricity to the radio. He was not motivated by money but rather the desire to help people.



Source 3 New technologies such as this 3D printer are constantly creating new opportunities for businesses.



Check your learning 15.1

Remember and understand

- 1 What is an entrepreneur?
- 2 List the five common characteristics of an entrepreneur.
- 3 What is innovation?
- 4 List the five common characteristics of innovators.

Apply and analyse

- 5 Why do you think each of the five entrepreneurial characteristics would be important for anyone who is starting their own business?

- 6 Look at Source 3. Explain how 3D-printer technology might create business opportunities.

Evaluate and create

- 7 Use the internet to research a famous entrepreneur. Write a short biography and list the key characteristics that you think would have helped them to become a successful entrepreneur.
- 8 Use the internet to research a famous innovator. Write a short biography and list the key characteristics that you think would have helped them to become a successful innovator.

15.2 Skills of entrepreneurs

As we have learned, entrepreneurs are often characterised by their resilience, strong work ethic, passion and willingness to take risks. But being a hard working risk taker does not automatically make a person an entrepreneur. Entrepreneurs also have skills.

Entrepreneurs have the ability to turn an innovative idea into a successful business. They do this by combining a number of skills (see Source 1).



Source 1 Skills often required by an entrepreneur

Demonstrating initiative

Entrepreneurs can demonstrate initiative in many different situations. This means they take action before others when they see an opportunity or problem that needs to be addressed.

Entrepreneurs can demonstrate initiative by keeping up with change, developing new ideas and acting on them to stay ahead of competitors and becoming (or remaining) leaders in their chosen field.

People who do not have the skills to show initiative can struggle in the business environment. Without ideas and the ability to put them into action, a person could not be considered an entrepreneur.

The business environment is constantly changing, as fashions and trends change the needs and wants of consumers. For example, new and improved smartphones are frequently released by Apple and Samsung, meaning the market for phones or smart devices is always developing. Businesses that cannot keep up with new developments in the market or consumer demand will fall behind or possibly even fail.

Planning

Entrepreneurs need to be able to plan in order to make their ideas a reality. We don't know what will happen in the future, but making plans can prepare us for different possibilities.

Entrepreneurs need to make plans and strategies in order to turn their ideas into a real business.

For instance they might plan:

- what goods or services a business will provide or sell
- how these products will be produced and distributed
- how to brand or market the business (i.e. how do they want the business to be known, will there be logos, colours, slogans associated with their business's identity)
- where the business should be located to reach the most consumers
- how they will compete with similar businesses (if any exist).



Source 2 The quick development of mobile phones is a good example of how entrepreneurs and their businesses must demonstrate initiative to keep up with competitors and consumer demand.



Source 3 Entrepreneurs must have the ability to respond innovatively to problems and change.

Problem-solving

A major part of being an entrepreneur is the ability to solve problems. It is usually in the process of solving problems that entrepreneurs come up with an idea for a business or organisation. For example, Professor Graeme Clarke invented the 'bionic ear' in the 1960s because he wanted to solve the problem of people not being able to hear. The bionic ear, otherwise known as the cochlear implant, is an electronic device that can create a sense of sound for people who are deaf or hard of hearing. Now manufactured by Cochlear Ltd, the bionic ear has allowed over 180 000 people around the world to hear sound.

The ability to problem-solve is also important for keeping up with and responding to the business environment. Businesses are faced with different problems every day. For example, there might be another business selling the same product, or consumers have become bored of a product that used to be fashionable. Entrepreneurs take these problems as challenges, and rather than giving up, come up with solutions to these problems that might make their business even better than it was.

Networking

Networking refers to the way people can build relationships with others that may be helpful in the future. Have you ever heard the expression 'It's not what you know, it's who you know'? This expression

15A What are the characteristics of an entrepreneur?

refers to the way the contacts people make can be more important to a person or entrepreneur's success than any practical skills they might have.

Networking can be useful for many reasons. For example, entrepreneurs might rely on contacts or connections to help them get funding, or money, to start their business. They might also network to seek advice from other experienced entrepreneurs.

Entrepreneurs can build their business by developing good relationships with their customers. Customers who have good relationships with a business, and who like a business owner, may be more willing to recommend the business to others. Known as 'word-of-mouth' marketing, businesses can generate a lot of business from customers who recommend them to their friends. It can also be a cheaper way of spreading the word about a product than traditional advertising.

Check your learning 15.2

Remember and understand

- 1 Name and describe two skills of an entrepreneur.
- 2 How did Professor Graeme Clarke show skills as an entrepreneur?

Apply and analyse

- 3 What do you think is the most important skill for an entrepreneur to have? Justify your answer.
- 4 Look at Source 1. Choose one of the skills not already described in this unit and suggest why you think this skill might be important.

Evaluate and create

- 5 Using the Internet, research one business (such as one we have discussed in this chapter) to answer the following questions.
 - a What is the business?
 - b How is the business innovative? (E.g. do they offer something other people don't? Is there something creative about their business?)
 - c How do the people who run the business show entrepreneurial skills? (E.g. do they demonstrate initiative? Or have they solved any problems?)
 - d If you were an entrepreneur working for the business, how do you think it could be improved?

15.3 Establishing a shared vision

While the main goal or objective of most businesses is to make a **profit**, there are many other goals that a business wishes to achieve. These goals might include to grow the business over time or to improve an area of the business's operations. Entrepreneurs may have more creative goals than to just make a profit. For example they might want to develop a new product or improve an existing service using new technology. Whatever they are, a good business will set goals so that everyone in the business knows what they are working towards and can focus on achieving those goals.

S.M.A.R.T goals

It is very important for a business or entrepreneur to set the right goals. A goal-setting technique commonly used by both individuals and businesses is the S.M.A.R.T goal principle.

Financial vs non-financial goals

Financial goals are directly related to money. A business will often set financial goals around increasing its sales and profit or reducing its costs. For example, a small business might set a goal to increase its sales by 10% from one year to the next.

Non-financial goals are those that are not directly related to money. Although many of these goals will ultimately help the business to earn money, they are not based on or measured by dollar amounts. Businesses might set non-financial



Source 1 The famous philosopher Seneca described setting goals as something that is required for success to be possible.

S

- **Specific**

Clear and easy to understand. The goal should say exactly what will be achieved and when it will be achieved.

M

- **Measurable**

Must be easily identified as a number, and can be measured in dollars, time, quantity, etc.

A

- **Achievable**

Goals must be challenging, but doable.

R

- **Relevant**

The goal is something that the business should be aiming to achieve.

T

- **Time-bound**

A realistic time by which the goal should be achieved.

Source 2 Businesses and individuals can use the S.M.A.R.T goal principle to help them set the right goals.

goals around improving **customer satisfaction**, training **employees** or reducing their environmental impact. For example, a small business might want to increase its level of customer satisfaction by 5% over the next six months. It could measure this by asking customers to complete a **survey** about their experience with the business.

Once the business has set its goals, it can develop a **strategy** or plan for how it will best achieve the goals. For example, it might plan to achieve its goal of improving customer satisfaction by training its employees to deal with customer complaints in a friendly manner.

A shared vision

Ensuring that everyone is on the same page and working towards the same goals is key to the success of a business. An entrepreneur is able to not only create and commit to a vision for the business themselves, but is able to get people on board to help make that vision a reality. Sometimes the vision itself is so powerful that people will accept it no matter what, but other times the entrepreneur needs to sell the idea so that others share their passion and motivation for achieving it.



Source 3 A successful business needs to develop strategies that will help it achieve its goals and compete against other businesses.

Check your learning 15.3

Remember and understand

- 1 What is the main objective of most businesses?
- 2 What is the difference between financial and non-financial goals?
- 3 What is a strategy?

Apply and analyse

- 4 Look at Source 1.
 - a Explain in your own words what you think Seneca meant when he said 'If one does not know to which port one is sailing, no wind is favourable'?
 - b Do you think this saying applies to businesses, individuals or both?

- 5 Look at Source 2 and determine whether the following goals are S.M.A.R.T.
 - a The business will be better than its competitors in the next financial year.
 - b The business will increase its level of sales by 10% over the next six months.
 - c The business will offer three new products.

Evaluate and create

- 6 Create a S.M.A.R.T goal that you wish to achieve. You may wish to focus on improving your test scores during the year or learning to play a certain number of songs on an instrument by the end of the term. Make sure you reflect on whether or not you have achieved your goal when the time you set for it finishes.

15.4 Innovation in Western Australia

Western Australia is home to many successful and innovative businesses. Many people and entrepreneurs have started businesses, both small and large, based on new ideas and identifying the wants and needs of consumers in our state. Spudshed and Sodashi are just two examples of successful businesses we might recognise in Western Australia.

Spudshed – Fresh Food Market

Founded by Tony Galati, the Spudshed business has grown into a serious competitor for supermarkets such as Coles and Woolworths. With seven stores and counting, one would hardly believe that the business grew from a small five acre property in Yangebup, which grew a simple crop of beans for the local market. Tony has not stopped working in the farming business to be part of the supermarket industry, rather he has developed a new business model that combines the two. By cutting out the middle man (see Source 1), Tony is able to offer his fresh farm produce straight to consumers for a fraction of the price that competitors can.

Tony's success is no doubt due to his hard work and determination, which has successfully carried the business through several controversial disputes with government authorities over food regulations. Tony has also received criticism over disputes with employees over working conditions and pay. Despite the growing success of the business, Tony refuses to rest. He is reported to work twenty-hour days, where he is actively involved in all areas of food production, distribution and sale to the final customer.

Spudshed has remained a family business with Galati family members heavily involved in its operations to this day.

Spudshed's successful business model is one that is raising eyebrows around Australia, where retail supermarket chains have long been the only option for consumers. Now, purchasing fresh food directly from farmers through their supermarket outlet has proven to be a real possibility. Despite the controversy that surrounds him, Tony Galati has proven that with the right idea, hard work and determination, an entrepreneur can build a successful business to rival the big boys.

Sodashi

Founded in 1999 by New Zealand-born Megan Larsen, Sodashi has grown from a small Fremantle business to a world-renowned skin care company. Sodashi owes much of its success to the firm commitment and values of its entrepreneur Megan who was determined to create a range of 100% natural skin care products.

Sodashi produces products of the highest quality for both men and women, considered to be the purest skin care range in the world. This has seen its products become increasingly popular with high-end spa and beauty businesses around the world. The name Sodashi is a translation from Sanskrit meaning wholeness, purity and radiance.



Source 1 Most consumers buy products from a 'middle man' or distributor. Spudshed sells direct from farmer to consumers.

The business is committed to social responsibility through ensuring its products are never tested on animals. They use environmentally friendly packaging that is recyclable and printed with natural vegetable dyes. The business is committed to its values of integrity, honesty, the environment, creativity, continual improvement and mutual respect. It demonstrates these values in the way that it treats its customers, employees, partners and therapists.

Through its dedication, hard work and quality products, Megan Larsen's Sodashi is destined to continue its path to success in the global beauty industry.



Source 2 Sodashi founder Megan Larsen

Check your learning 15.4

Remember and understand

- 1 What kind of a business is Spudshed and who are its main competitors?
- 2 How does Spudshed compete with its competitors?
- 3 What personal qualities have contributed to Tony Galati's success?
- 4 When, where, and by whom was Sodashi founded?
- 5 What is the main business activity of Sodashi?
- 6 Why is Sodashi becoming more popular around the world?

Apply and analyse

- 7 Using the Internet or shopping catalogues from Coles, Woolworths and Spudshed, compare the prices of different foods at each supermarket.

a Which outlet is cheapest?

b Which outlet is most expensive?

- 8 How does Sodashi show its care for the planet?
- 9 What are the Sodashi's core values?

Evaluate and create

- 10 Visit the Sodashi website and write a list of qualities that you think would have helped Megan Larsen become a successful entrepreneur. <http://www.sodashi.com/meet-the-team/megan-larsen>

15A rich task

Social entrepreneurs: Thankyou

Not all entrepreneurs are interested in making money for themselves. Social entrepreneurs, like the founders of Thankyou, aim to make the world a better place through their business activities.

The Thankyou Group was started in 2008 by enthusiastic Australian university students Daniel Flynn, Justine Flynn and Jarryd Burns. They saw an opportunity to help the 900 million people who did not have access to safe drinking water by starting their own not-for-profit bottled water business named 'Thankyou Water'. Although it took three years before the product saw some success, it eventually became popular with consumers who wanted to know their spending money was going to a good cause.

thankyou.™

Source 1 The Thankyou Group currently has four brands: Thankyou Water, Thankyou Food, Thankyou Baby and Thankyou Body Care.

Thankyou Group has given millions of dollars to fund projects in over 17 countries, providing hundreds of thousands of people with water, food, hygiene and sanitation solutions.

Thankyou represents more than just another business idea. Its story is an example of what people can achieve when they use their entrepreneurship to make a difference.



Source 2 The Thankyou Group was founded to help provide people around the world with safe drinking water.



Source 3 Co-founders Jarryd Burns, Daniel Flynn and Justine Flynn took a different approach to business. They saw it as a way of helping people rather than making money.



Source 4 The Thankyou Group helps people in need across 17 countries, including Kenya.

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Interviewing an entrepreneur

Interviews are a great way of finding out, first hand, about a subject we are interested in. With the right approach and preparation, we can learn more about how and why people such as entrepreneurs do what they do. We might even be able to get a few tips to help us become successful entrepreneurs.

Step 1 Respectfully approach an entrepreneur and politely request to interview them at a time that suits them.

Step 2 Prepare a list of questions that you wish to ask the entrepreneur. Because entrepreneurs are often busy running their business, a good idea would be to ask a maximum of 10 questions. Your questions could focus on the following areas:

- the business and how it runs
- the reasons they became an entrepreneur
- what it takes to be an entrepreneur
- the challenges and successes faced as an entrepreneur.

Step 3 Prepare the right equipment. It is better to record the interview with your smartphone or camera than it is to try to write down the responses to your questions as you go, but remember to ask permission before you record someone.

Step 4 Conduct the interview. Make sure you are well presented, polite and punctual to the interview. When you complete the interview be sure to ask the entrepreneur if they have any questions for you and thank them for their time.

Step 5 Write up the interview responses and any other notes you made from the interview.

Apply the skill

- 1 Use the above steps to interview the owner of a small business. Make sure you are supervised by an adult when you conduct the interview. If this is not possible you can conduct the interview over the phone.
- 2 Write a 200-word reflection on what you learnt from the interview and how it helped you to better understand the world of business.

Extend your understanding

- 1 Visit the Thankyou Group website (thankyou.co) and write a brief report on how the social enterprise is helping those in need.

part

4



civics and citizenship

Concepts and skills

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Concepts and skills

The civics and citizenship toolkit

Civics and **citizenship** is the study of the **rights and responsibilities** that Australians have in our society. It looks at how we can work together to shape our nation into one that is fair and just for all. By building an understanding of these rights and responsibilities we can develop our own sense of what it truly means to be Australian.

Civics and citizenship teaches us to 'agree to disagree'. That is, we learn to form our own opinions but accept that other people will have different views. To do this, we must first learn to gather information about various issues before we come to conclusions.

As open-minded citizens we can promote the values of freedom, respect, compassion and equality that allow us to live in harmony.



16A

What are the civics and citizenship concepts?

16B

What are civics and citizenship skills?



Source 1 Parliament House in Canberra is where elected federal politicians meet to make important decisions about how our nation is run.

16.1 Civics and citizenship concepts

Civics and citizenship students can use a wide range of concepts to help them understand the workings of Australia's political and legal systems. These concepts may be used together or as separate ideas. As you learn to use each of these key concepts you will begin to think like an active citizen.

The six key concepts of civics and citizenship are:

- democracy
- democratic values
- the Westminster system
- justice
- participation
- rights and responsibilities.

Democracy

A democracy is a system of **government** run by the people, for the people. In most democratic societies, citizens are involved in the running of society by electing people who will represent them in government. Representatives of the people then develop policies and make **laws** on behalf of the people who have elected them.

The concept of democracy has been around for a long time, with many civilisations and societies throughout history. The term democracy comes from the Greek words 'demos' (meaning citizen) and 'kratos' (meaning rule). The people of ancient Greece practised what is known as a **direct democracy**. A direct democracy involves citizens meeting together to make laws for their society.

Today, most democratic societies such as Australia are **representative democracies**. This means we elect representatives to make laws on our behalf. In Australia, citizens over the age of 18 are required to vote for candidates in elections for federal, state and local government. Our system of voting is compulsory, unlike other democracies such as the United Kingdom or the United States where participating in elections is optional.



Source 1 The Australian House of Representatives is made up of the people we have elected to represent us in our democracy.

Democratic values

Democratic values are the beliefs and ideals that are held by our society as a democracy. Such values include respect, equality, fairness and freedom (see Source 2). It is important to understand democratic values when examining Australia's political system. By understanding democratic values and their purpose, we can assess if a government is operating as a true democracy.

For example, in Australia (like many democratic nations), freedom is a very important part of society. In Australia we are free to say and do many things. For example, we are free to protest if we do not agree with something or if we feel passionately that something should change. We are free to practice whatever religion we want to, including no religion.

These freedoms are a very important part of living in a democracy as they allow us to participate and have a say in the way our country is run. If we couldn't safely participate in our society, then it wouldn't be a democracy at all.

| Democratic value | Definition |
|------------------|--|
| respect | treating others with consideration and valuing their views, beliefs and rights |
| equality | rights and privileges for all, without discrimination based on gender, race, religion, age, sexual orientation or level of education; all citizens have the right to the same opportunities |
| fairness | all people are treated fairly, or without injustice, and are given equal opportunity; also known as a 'fair go' in Australia |
| freedom | rights, privileges and responsibilities for all without interference, or control from other citizens or government |

Source 2 Democratic values

The Westminster system

Australia's system of government is based on the Westminster system. The Westminster system is a form of parliamentary government originating in the United Kingdom. It is named after the area of London where the British **parliament** is located (see Source 3). The Westminster system has been adopted by a number of countries, including Canada and New Zealand. It includes:

- an upper and a lower house of parliament that has been elected democratically by the people
- a head of state or sovereign (such as the Queen or Governor General) whose job is mainly ceremonial
- a head of government (such as a prime minister) who leads the majority of representatives in the lower house
- an executive or cabinet made up of members of parliament (MPs)
- an independent civil service that serves the government in power
- an independent **judiciary** (made up of the courts), which upholds the rule of law.

In Australia, the Westminster system is used by both our federal and state governments.



Source 3 Westminster Palace, Houses of Parliament, London

Justice

The concept of justice can have many different definitions. The idea of justice can mean different things to people from different societies and cultures. For some it might mean payback, while for others it might mean fairness. However, the concept of justice in Australia ultimately means that people should treat each other in a manner that is fair and balanced.

Our legal system has strong ties with the concept of justice. In fact, it is sometimes referred to as 'the justice system'. In Australia, when people break the law and are convicted by the courts it is said that they have been 'brought to justice'.

As we will begin to learn, the key features of the Western Australian legal system and the Australian legal system are designed to deliver justice to all. Through its key principles and procedures (such as the right to a fair trial), the legal system encourages the delivery of justice to all citizens, whether they be guilty or innocent. Our laws and rights are also written and enforced so that we can enjoy a fair and just society.

The government's ability to publicly deliver justice to its people is an important part of retaining the trust of citizens. It is also an important factor in stopping people from breaking the rule of law, by knowing that there are consequences for **crimes** and that the legal system is in place to protect us from injustice.



Source 4 Australia's legal system is designed to serve justice to citizens.

Participation

The concept of participation is an important part of living in a democracy. It refers to the way good citizens contribute to or take part in society. In Australia, we participate in the running of society in a number of ways, such as by voting in an election or referendum, serving on a **jury** or paying taxes. These things help our government to deliver services to our community, which we in turn will benefit from.

One of the most important ways we can participate in a democracy is by voting in an election. By voting for the issues that are important to us, we have the power to influence the way our country is run.

Other ways of participating in a democracy might include:

- protesting or demonstrating about important issues (to make your opinions known to the rest of the community)

- participating in a political discussion
- signing petitions that aim to make a change to society
- contacting your local member of parliament (such as by writing letters or emails)
- campaigning for a person or party who is trying to get elected
- becoming a member of parliament.

As a part of democratic societies, participation is important in giving citizens a sense of ownership or accountability in the running of society.



Source 5 People can participate in a democracy by protesting issues they feel are important.

Rights and responsibilities

The concept of rights and responsibilities refers to our entitlements and duties as citizens. The rights and responsibilities we experience in Australia are an important part of living in a democracy. Our rights ensure we are able to have a say in the way our country is run and are treated fairly in the process. On the other hand, our civic responsibilities ensure we contribute to our society in order to keep it going as a strong democracy. A list of some of these rights and responsibilities is shown in Source 7.

In the United States, the rights of the citizens are protected by their Bill of Rights. This **Bill** (or list of rights) makes sure the freedoms of US citizens are protected, including the freedom of speech and the freedom to assemble or gather in protest. In Australia, we do not have a national Bill of Rights that officially protects our rights. Rather, our constitution says we have a number of rights (see Source 7), including the right to vote. In Australia, we have no official protection for our right to freedom of speech, but the democratic values held by our society ensure that this privilege is rarely prevented.



Source 6 Voting in elections is both a right and responsibility of Australian citizens.

| Rights | Responsibilities |
|--|---------------------|
| the right to vote | voting in elections |
| protection against acquisition of property on unjust terms | jury service |
| the right to trial by jury | paying taxes |
| the right to freedom of religion | obeying the law |
| protection against discrimination | |

Source 7 The rights and responsibilities of Australian citizens

Check your learning 16.1

Remember and understand

- 1 What is a democracy?
- 2 What kind of democracy is Australia?
- 3 Name and describe two democratic values.
- 4 What is justice?
- 5 What rights do we have in Australia that are protected by our constitution?

Apply and analyse

- 6 Why is it important for citizens to participate in a democracy?
- 7 What other values do you think are important to our democratic society?

Evaluate and create

- 8 Research the government of another democratic society (such as New Zealand, Canada or Japan). How is its form of government similar to or different from Australia's form of government? Present your findings as a poster or audiovisual presentation.
- 9 Consider the statement 'Australia should have its own Bill of Rights'. Using the Internet to conduct research, develop an argument both for and against this statement.

16.2 Civics and citizenship skills

Active citizens learn to question, interpret information and argue their point of view. For civics and citizenships students, the classroom is a place where you learn to share your opinions and see things from different perspectives. You should take this approach when examining the identity and democratic system of Australia, as well as the legal rights and responsibilities of its citizens.

Studying civics and citizenship requires you to analyse information and ask a range of questions to find out more about a topic. You will learn to question and research information asking what, why, when, how and who to uncover the truth about an issue. Through investigating an issue you are able to develop your own point of view, whilst understanding the reasons why others have different opinions.

As shown in Source 1, there are four stages in any civics and citizenship inquiry. They are:

- 1 Questioning and researching
- 2 Analysing
- 3 Evaluating
- 4 Communicating and reflecting



Source 2 Learning to question and interpret information is an important skill for civics and citizenship students.



Source 1 There are four stages in any civics and citizenship enquiry. At each stage, we use a number of different skills. Each of these skills is like a tool in a toolkit.

16.3 Questioning and researching

Developing questions

Civics and citizenship students ask lots of questions. They don't believe everything they read and carefully consider why someone takes a certain point of view or acts in a certain way. For example, when they see politicians talking in the media, they listen to their arguments and seek out different points of view.

They also check facts and look at the arguments for and against a certain issue before reaching their own conclusions. When civics and citizenship students state their own viewpoint, they support their views with evidence such as statistics, cases from the past, quotes from what others have said and sound reasoning.

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Developing civics and citizenship questions

As active citizens, we should ask questions about the society we live in rather than just accepting it or taking things for granted.

You can learn to investigate a civics and citizenship issue, such as the keeping of asylum seekers in detention centres, by starting your questions with the words 'what', 'where', 'how', 'why', 'what impact' or 'what should'. When examining a source, whether it is a cartoon, video footage, newspaper article or election slogan, the following approach may be helpful.



Source 1 A political cartoon about the controversial issue of keeping asylum seekers in detention centres for an unspecified period of time, often years.

Step 1 Brainstorm a list of questions and then try to answer them. Some questions, such as, 'What is happening?', might be easily answered, whereas other questions, such as, 'Why is it happening?', might need further research.

Step 2 Look at the source itself to try to understand the context. The 'who' question is important here. 'Who is saying this?' can be just as important as, 'What is being said?' Identifying where the source comes from can quickly alert you to whether the truth of their statements should be examined more carefully.

Step 3 The 'how' question is also important. In this example you might ask, 'How are the asylum seekers being detained and processed?', but you also might ask, 'How does this source (cartoon) affect me?' Are there any emotions such as fear, persuasion or humour that are being used to influence your judgement?

Apply the skill

- 1 Where could you look to find answers to the question, 'What is the issue with detaining asylum seekers?'
- 2 Why is it important to know the author of the source when discovering the truth about an issue?
- 3 Why is examining how the source affects you sometimes more important than basic descriptive questions such as, 'What is happening?'
- 4 What tactics have been used to convey the cartoonist's message about the issue of asylum seekers in detention centres?

Collecting information and data

Sources provide information for civics and citizenship students. They can take many different forms, from written records in books or online, to live video and audio recordings. Some examples of sources include case transcripts and judgments, newspaper articles, letters, tweets, blogs or Facebook posts, cartoons and interviews.

Locating a range of relevant sources is a valuable skill, which usually involves a number of different search methods, such as:

- using online search engines such as Google
- following social media such as Facebook and Twitter
- looking at newspaper and magazine articles in print or online
- contacting local members of parliament or asking people with expertise in the subject
- speaking with other class members or family members to gain an insight into their views on a particular issue.

Using technology to locate relevant sources

Although books and newspapers are valuable sources of information, most research today is conducted online. In order to ensure that sources gathered online are accurate, reliable and relevant, a number of guidelines should be followed:

- Search engines such as Google are useful research tools but much of the material on these sites is unreliable and inaccurate. When using search engines, be sure to define your search using keywords. Your librarian or teacher are good people to ask for help with this.
- A reliable way of searching for sources is to use sites linked to educational institutions, government departments, reputable companies, universities and educational institutions. A quick way of telling if a site is reputable is to look at the domain name in the URL (internet address).
- Avoid blogs posted by unknown individuals. If you happen to find information relevant to your investigation on a blog or social media site, always verify it by using a more reliable source.
- Never cut and paste information from the Internet without referencing where it is from. Taking someone else's work, ideas or words and using them as if they were your own is called plagiarism and is against the law, as well as school rules.

Check your learning 16.3

Remember and understand

- 1 When do citizens ask questions?
- 2 Why is it important to ask questions as citizens?
- 3 What should we be wary of when looking for information to answer questions?

Apply and analyse

- 4 As an active citizen, develop a question to ask about the following scenarios:
 - a A local politician promised to fix and reopen the local pool but nothing has happened.
 - b Young people in the local area are bored and desperate for things to do.
 - c The number of children that can read in one state of Australia is decreasing.

Evaluate and create

- 5 Identify an issue in your local area. Develop three questions to ask your local politician about that issue.



Source 2 Littering is an example of a local issue you may want to ask your local politician about.

16.4 Analysing

Analysing information and ideas from a range of sources

A useful source is one that will add to your understanding of a civics and citizenship inquiry. The source needs to be relevant to the topic and reliable. The following are good questions to ask in order to determine whether a source is useful:

- Is it a reliable source?
- Is there enough information and sufficient detail to help me answer the inquiry question?
- Does the information support evidence from other sources?
- Is it balanced or does it present one point of view (bias)?
- Is it based on fact or opinion?
- Is the information current?

Separating fact from opinion

Sources are only really useful if they help you to form an opinion. In many cases, this means separating fact from opinion. A fact is something that can be proved: when an event took place, what happened and who was involved. An opinion is based on what people believe is likely to be true. A simple way to detect whether a statement is fact or opinion is to look closely at the language used. The use of words such as 'might', 'could', 'believe', 'think' and 'suggests' all indicate that an opinion is being expressed.

For example:

- **Fact:** Australia detains asylum seekers for an unspecified period of time.
- **Opinion:** Keeping asylum seekers in detention centres is unethical as they have not committed a crime.



Source 1 Separating fact from opinion in civics and citizenship is an important skill.

Check your learning 16.4

Remember and understand

- 1 What is the difference between a fact and an opinion?
- 2 How can we tell if a source is useful?

Apply and analyse

- 3 Matt wants to know more about the government's policies on education. He has found a few blogs on the subject but doesn't know where else to look. What advice would you give Matt.

16.5 Evaluating

Evaluating different points of view and negotiating to resolve issues

In civics and citizenship it is important to understand not only what opinion is being expressed but why it is being expressed. It is useful to consider why a person may have a certain point of view. For example, the family of a victim of crime may say to the media that a sentence given to a criminal was insufficient and unjust. This may be true, but it's important to consider how the opinion of these family members might be influenced by the emotions of losing a loved one. Listening and being respectful of opinions that may be different to our own is an important skill to learn in civics and citizenship.

Planning a course of action

A democratic process exists when everyone has an opportunity to have their say. This might include giving all members of a group the opportunity to contribute to a discussion, making sure that all group members have access to information and taking a vote.

A democratic process exists when everyone has an opportunity to have their say. This can include giving all members of a group the opportunity to contribute to a discussion in order to communicate their opinion. Often in a democratic system, it is also useful to make sure that all group members have access to any relevant information regarding the discussion or issue. Once all group members have had their say the group will then conduct a vote.

Once the vote has been completed and all members of the group have reached an agreed outcome, a plan must be developed that will be used for that action or issue.



Source 1 One way to reach a decision that reflects the majority view is to take a vote.

Check your learning 16.5

Remember and understand

- 1 What is a democratic process?
- 2 Give an example of a democratic process in action.
- 3 Why is it important to recognise different points of view?

Apply and analyse

- 4 A PE teacher has given a class a choice of what sport they are allowed to play during a double period. The class is divided between people who want to play netball, people who want to play football and people who want to play hockey. Suggest a process to help the class make a fair decision.

Evaluate and create

- 5 Create a handbook or class wiki providing tips on how to make class decisions when not everyone agrees.

16.6 Communicating and reflecting

Presenting conclusions

In every subject, there is a common language that is used. Certain terms form part of important concepts and are essential in helping us understand these concepts. Source 1 lists and defines some commonly used terms in civics and citizenship; additional civics and citizenship terms can also be found in the glossary at the end of this book. If you come across a term that you are unsure of, you should use a dictionary, the Internet or your teacher to help you understand what it means. It is a good idea to keep a glossary of subject-specific terms, as well as any other new words that you come across, in your workbook.

| Term | Definition |
|--------------------------------|---|
| citizenship | a person's status as a citizen; a citizen is a person who legally lives in a geographical area such as a town or country; in a wider context, citizenship encompasses the rights and responsibilities citizens exercise |
| civics | the study of the rights and responsibilities of citizens and how government works |
| government | the elected members of parliament who make decisions for a nation or state; the government is made up of the party or coalition that has won a majority of seats in the lower house of parliament; the lower house of federal parliament is the House of Representatives; the upper house is the Senate |
| multiculturalism | the way in which people of many different cultures, races and religions live peacefully with one another as equals |
| parliament | the national or state law-making body that is made up of elected representatives in both the upper and lower houses with a head of state; in Australia, the national parliament is referred to as the Commonwealth or federal parliament |
| parliamentary democracy | a system of government where people elect representatives to parliament in order to make laws which reflect the views of the majority of voters |

Source 1 Some useful civics and citizenship terms

Reflecting on our role as citizens

Australian citizens have many rights and responsibilities as members of a democratic society. We have a right to live freely in a society where we allow others to live freely. As individuals, we should always think about what we can do to make the world a better place. This goes above and beyond simply obeying the law, but rather a higher level of social consciousness that helps us make our world more beautiful through the positive changes that we make to it. Australian citizens are global citizens, and understand that the decisions we make can affect the entire planet and its inhabitants. Ultimately, we are free to choose what kind of a world we live in.

Check your learning 16.6

Remember and understand

- 1 Explain the following terms using your own words:
 - a citizen
 - b civics
 - c government.
- 2 What can you do when you come across a term you do not understand?

Apply and analyse

- 3 List three ways you could help to improve your local community.

Evaluate and create

- 4 Develop a class project that you think would help your local community. It can be anything from picking up litter to raising money for a local charity. Suggest a plan of action for this project and reflect on this in terms of how it might help you to fulfil your role as an active citizen in your community.

Designing our political and legal system

Designing our political and legal system

In 1901, the six Australian colonies of Western Australia, South Australia, Victoria, Tasmania, New South Wales and Queensland voted to unite as one nation known as the Commonwealth of Australia. In order to become its own independent nation, Australia created and developed its own political and legal system. The foundation of this system was the **Australian constitution**, a set of rules that guide the way we run our country and that reflects our values of fairness and **justice**.



17A

How is Australia's political system shaped by the constitution?

- 1 What do you think is the role of the Australian parliament?
- 2 Why do you think it is important for people to vote on really important decisions that affect the whole nation?

17B

What are the key principles of Australia's legal system?

- 1 Why do you think it is important that the legal system treats everyone equally?
- 2 How did it make you feel the last time you were treated unfairly?



Source 1 Like the other states and territories, Western Australia has its own parliament, which focuses on state issues.

17.1 The purpose and value of the Australian constitution

The Australian constitution is a written document that sets out the rules to govern our nation.

Between 1890 and 1900, the document was worked on by many people, from politicians and lawyers to ordinary people. Although they came from many different backgrounds, they all wanted to see the colonies united as one nation.

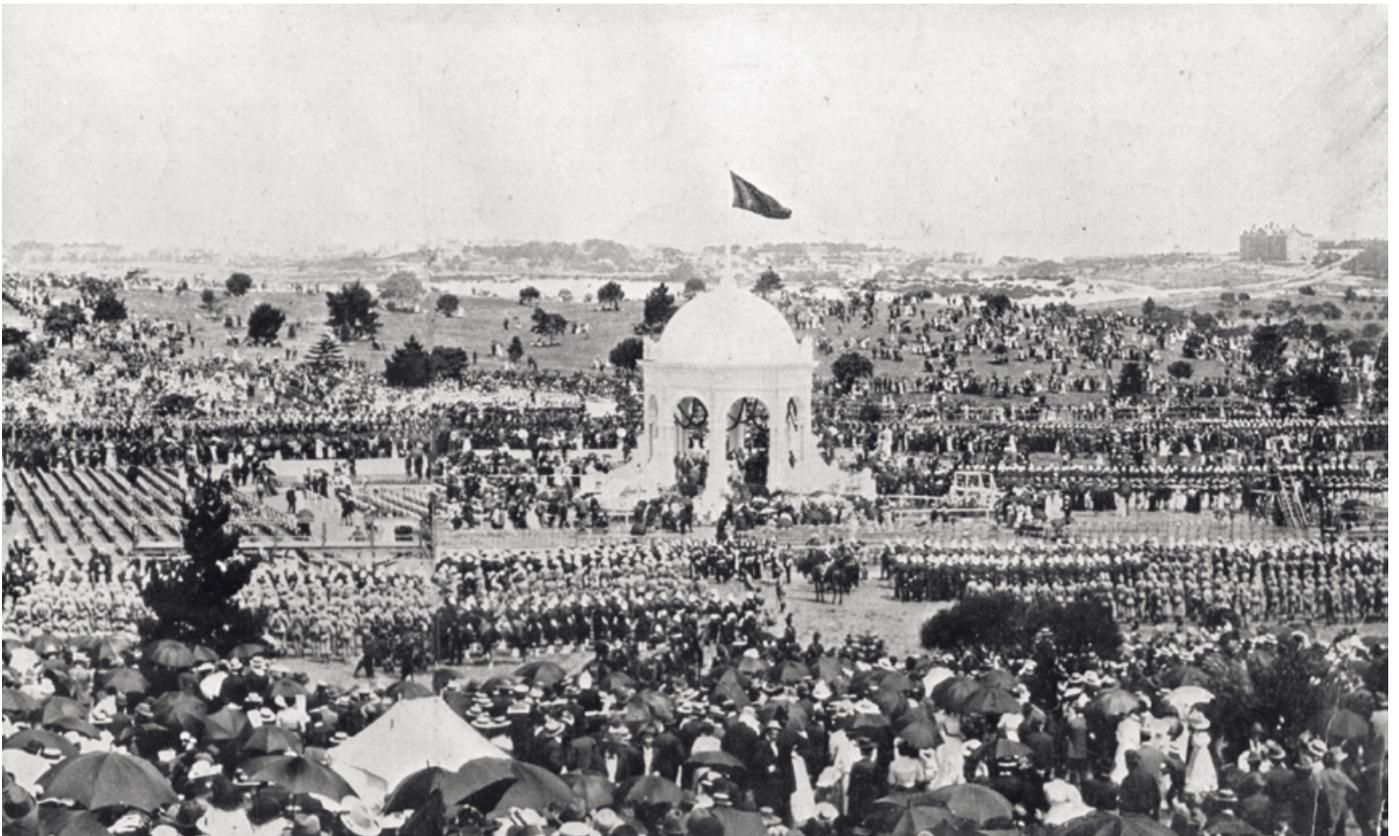
The constitution first came into effect on 1 January 1901 when the six British colonies of Australia finally united, or federated, to form one nation.

The constitution is an agreement among the six colonies outlining the division of power and the rules or laws in what would be the new federal parliament of Australia. These six colonies are now Australia's states.

The purpose of the Australian constitution

Our constitution is the most important document in Australia. Its many purposes include:

- establishing the **government** of the Commonwealth of Australia as a democracy (Australia would not exist as a united nation without the constitution)
- outlining how the government should be structured
- making sure the people in government have been chosen by the people (through elections) and that anyone can run for government if they want to



Source 1 The Australian constitution first came into effect when Australia was federated in 1901.

- stating what **rights and responsibilities** we have as Australian citizens (such as making sure we all have the right to vote)
- outlining the roles and duties of the state governments
- making sure that all people obey the **laws** (that are set out in the constitution).

At the time of federation, many people also felt the constitution was important because they wanted to have their own national identity apart from that of Britain.

The value of a written constitution

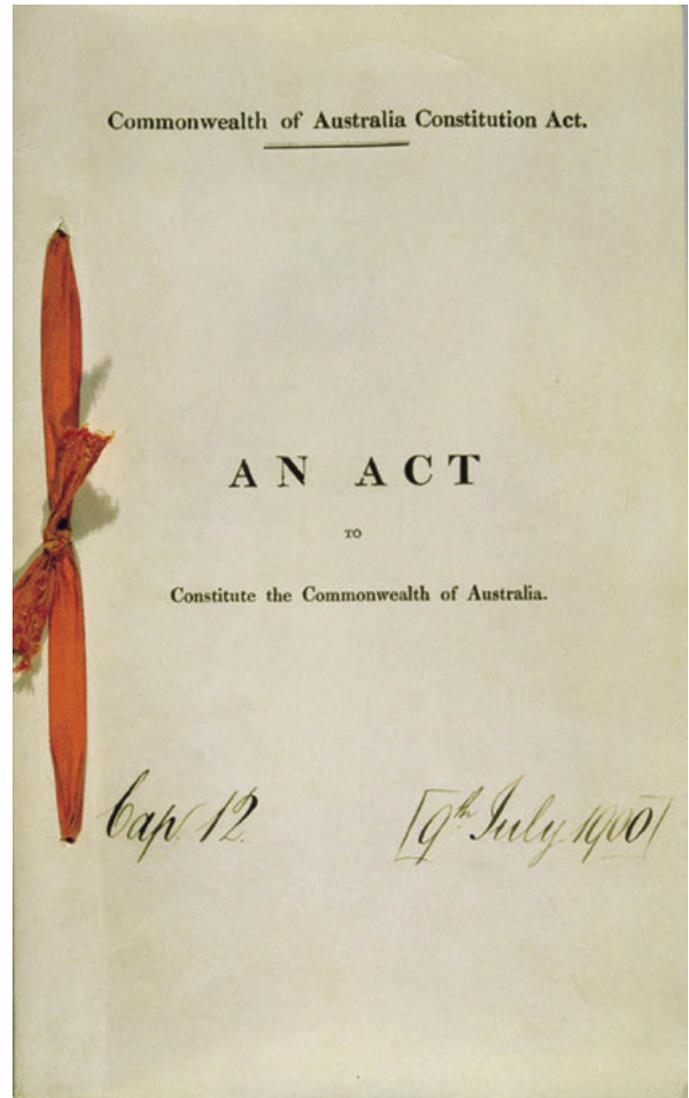
The Australian constitution is divided into eight chapters and sections. It is considered by many as the 'birth certificate' of our nation.

It is important to have a written constitution for many reasons, including the following:

- It gives us a set of laws that can be followed or enforced consistently (meaning people can't make things up as they go along).
- It describes the role of government and how it should be structured so that decisions are made on behalf of the country.
- It defines how power should be divided, making sure no single person can have complete control over the way our country is run.
- It allows citizens to read and understand the structure and laws of our country.

One important feature of our constitution is that it can be changed. This is because the laws that were important to people of the past might not be important to us now. In the same way, laws that are important to us today might not be relevant to

Australians in the future. We will learn more about how the constitution can be changed later on in this chapter (see pages 445–447).



Source 2 The Australian constitution

Check your learning 17.1

Remember and understand

- 1 What is the Australian constitution?
- 2 When did our constitution first come into effect (when did we start using it)?
- 3 Name two of the constitution's purposes.

Apply and analyse

- 4 Why do you think some people call the Australian constitution our 'birth certificate'?
- 5 Why is it important to have a written constitution?
- 6 What do you think is the most important thing about the Australian constitution?

17.2 Three levels of government

In Australia we have three levels of government. They are:

- the federal government
- state and territory governments
- local government.

Each level of government makes laws, provides services to the community and is able to punish people for breaking its laws. Australians who are 18 or older have the responsibility of voting for our federal, state and local governments in elections.

Federal government

When we talk about federation, we are talking about when Australia's six colonies joined together to form the federal government of Australia. The federal government of Australia makes laws for the entire country. It has many responsibilities, including developing good relationships with other countries, defending the nation, and dealing with issues such as immigration or the environment. It is also the federal government's responsibility to manage Australia's money.

The leader of the federal government is known as the prime minister.

State and territory government

After federation, the colonies kept some of their power to look after and make rules for themselves. The former colonies became our states, and today state and territory governments make laws for the people and issues relevant to their state or territory.

Laws made by the state or territory governments only apply to people in that state. For example, the state government of Western Australia cannot make laws for people living in Queensland and vice versa.

The states have their own constitutions, which outline laws on issues not covered in the Australian federal constitution. If something in a state's constitution (such as a law) conflicted with a federal law, then the federal law would overrule it.

The Australian territories (the Northern Territory and Australian Capital Territory) were once managed by federal laws, until they were given what is known as the self-government act. Much like a constitution, the self-government act of each state allows the Northern Territory and Australian Capital Territory to make laws that suit needs of their people.

The territory governments' laws can also be overruled by the federal government if they contradict each other. For example, in 2013 the Australian Capital Territory made same-sex marriage legal. However, because this law did not agree with federal marriage laws, the High Court ruled that it could not exist.

Local government

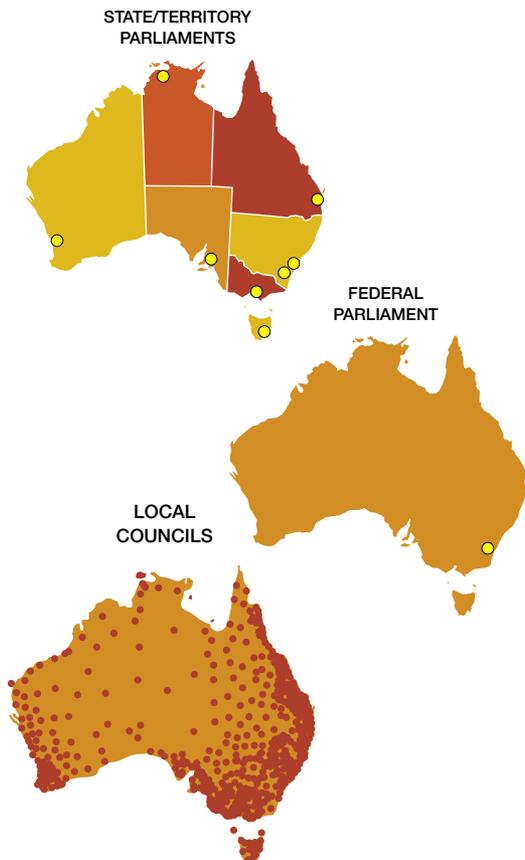
The third level of government is local government. We have over 560 local governments, or councils, in Australia. Our local councils make rules for the local community, known as by-laws. These by-laws can cover local parks, parking, garbage collection, and many other features of a local community that are not regulated or managed by the state or federal governments.

Local councils are not mentioned in the Australian Constitution, but they are included in the constitution for each state government. This means local councils get their power to manage communities from the state government (and therefore can be overruled by the state government too). Australia is divided in local cities, towns or shires which each have their own local council.

Councils are important to Australian communities because they address the issues that are important to an area. Services can be changed or managed depending on the needs of the community. For example, local councils such as the City of Karratha will deal with different issues to the City of Fremantle. Having separate councils to manage the needs of different areas means that places in Western Australia (and other states) can operate more smoothly than if we all shared the same laws that might not apply to us.

Source 2 A comparison of federal, state and local government

| | Federal government | State government | Local government |
|-----------|---|---|--|
| Structure | Bicameral (made up of two houses – the Senate and the House of Representatives) | Bicameral (made up of two houses, excluding Queensland and the territories which are unicameral) | Unicameral (made up of one house) |
| Location | Canberra | Western Australia: Perth Queensland: Brisbane New South Wales: Sydney Victoria: Melbourne South Australia: Adelaide Tasmania: Hobart Australian Capital Territory: Canberra Northern Territory: Darwin | Located in every shire, city or municipality in Australia |
| Laws | Apply to all of Australia and include: <ul style="list-style-type: none"> • defence • immigration • foreign policy • trade and commerce • marriage • quarantine • currency • taxation | Apply to just that state and include: <ul style="list-style-type: none"> • schools • hospitals • roads and railways • public transport • mining and agriculture • community services • police • prisons • ambulance services | Apply to just that municipality and include: <ul style="list-style-type: none"> • local roads, footpaths • waste management • parking • recreational facilities such as parks, sports fields and swimming pools • town planning • building approvals and inspections • land and coast care programs • pet regulation |



Source 1 The location of Australia's federal, state and territory, and local governments

Check your learning 17.2

Remember and understand

- 1 What are the three levels of government in Australia?
- 2 What kind of laws does the federal government make?
- 3 What is the difference between federal and state government?

Apply and analyse

- 4 Think about your week so far and list the services or rules you have come across that were relevant to federal, state or local government.
- 5 What is the name of your local council? What kind of laws would they be able to make?
- 6 Identify if the following issues would be managed by local, state or federal government.
 - a Another country asks Australia to join a war.
 - b Police officers go on strike.
 - c A new railway line is being built.
 - d A library needs an access ramp built.

Evaluate and create

- 7 Draw a chart, divided into three columns, that shows the responsibilities of each level of government in Australia.

17.3 The separation of powers

The first three chapters of the Australian constitution define the separate roles of three main branches of government. They are the **legislature**, the **executive** and the **judiciary**. These three powers of government are independent of each other. This means that one cannot influence the other.

Legislature

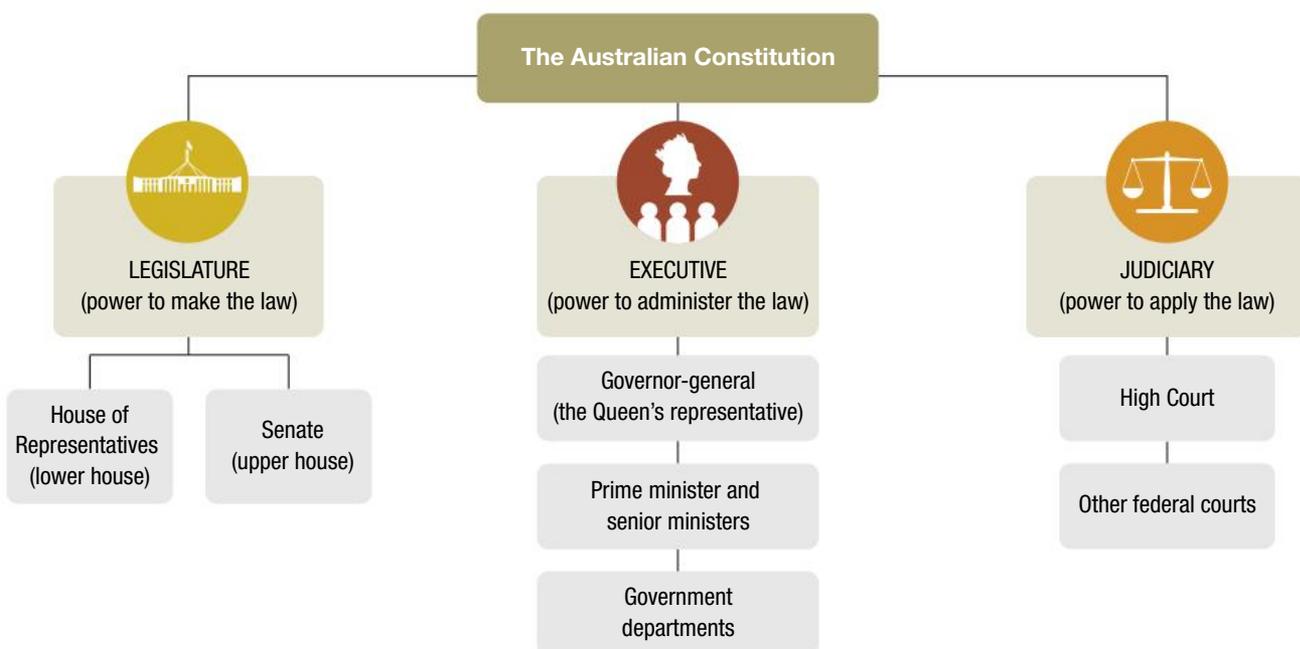
The legislature is responsible for creating the law. The legislature is made up of the two houses of **parliament** — the Senate (the upper house) and the House of Representatives (the lower house). Both the Senate and the House of Representatives are responsible for debating and passing new laws.

The lower house

The House of Representatives is made up of 150 members of parliament (MPs), each representing one of Australia’s federal electorates. The role of the lower house



Source 2 Parliament House is located in Canberra. It is home to both the House of Representatives, known as the lower house, and the Senate, known as the upper house.



Source 1 The separation of powers at a federal level is set out in the constitution.

is to represent the views of Australian citizens and to make and scrutinise laws based on these views. A majority of proposed laws, called **Bills**, are introduced into parliament by the House of Representatives.

The upper house

The Senate is made up of 76 senators who represent the states and territories. It shares the role of making laws with the House of Representatives and reviews laws before they are made. The Senate can reject laws proposed by the lower house but it can also approve a Bill, with or without changes.

Executive

The executive is responsible for approving laws and putting them into action. It is made up of the prime minister, ministers and the governor-general who is the queen's representative in Australia.

The prime minister chooses the ministers who are commissioned by the governor-general to be part of the executive and implement that law. For example, the prime minister will select an MP to be the Minister for Education. This minister will be responsible for all matters relating to the education system and will be in charge of the Department of Education.

Source 3 The High Court decides on special cases that can affect the entire nation and on how the constitution is applied.

Judiciary

The role of the judiciary system is to make rulings or judgments about the law. It is made up of the High Court and other federal courts. These courts interpret the laws passed by parliament and apply them to specific cases and disputes.

In Australia there are four main federal courts where laws can be enforced. They are the:

- High Court of Australia (the highest court in Australia)
- Federal Court of Australia (hears cases on a variety of things including bankruptcy, tax and trade)
- Federal Circuit Court of Australia (hears less complex cases than the Federal Court but on similar issues)
- Family Court of Australia (hears cases on family disputes).



Check your learning 17.3

Remember and understand

- 1 What is meant by the separation of powers?
- 2 Who does the governor-general represent?
- 3 How many senators are there in the Senate?
- 4 How many MPs are in the House of Representatives?

Apply and analyse

- 5 Why do you think a prime minister would appoint ministers?

Evaluate and create

- 6 Visit the Parliamentary Education Office website, go to 'Closer Look' and 'Australia's Parliament House' (peo.gov.au). Create a poster with an annotated map of Parliament House. Be sure to clearly identify the Senate as well as the House of Representatives. Your poster should include information about the roles of each house as well as any other relevant information.

17.4 Australia's bicameral parliament

Australia's system of government is best described as a constitutional monarchy and a representative democracy. Being a constitutional monarchy means that Australia's head of state is the monarch (the king or queen) of Great Britain. Our current head of state is Queen Elizabeth II. The queen is represented by the governor-general. Our current governor-general is Sir Peter Cosgrove.

Being a representative democracy means that we vote for people to represent us in parliament in an election. Our federal government is formed by the elected representatives voted into parliament.

What is the role of parliament?

The main role of parliament is to make laws in areas that the Australian constitution identifies as the responsibility of the federal government. For example, laws are needed to allow the federal government to build the new National Broadband Network (NBN). Other roles of parliament include being a place to debate important national issues such as free trade agreements, international relations and immigration. Parliament is a meeting place for elected representatives that allows them to discuss a range of views on how Australia should be governed. It allows for the broad range of our opinions, beliefs and interests to be represented. Finally, it is a place where a representative can check that the

federal government is carrying out its duties and responsibilities for the good of the Australian people.

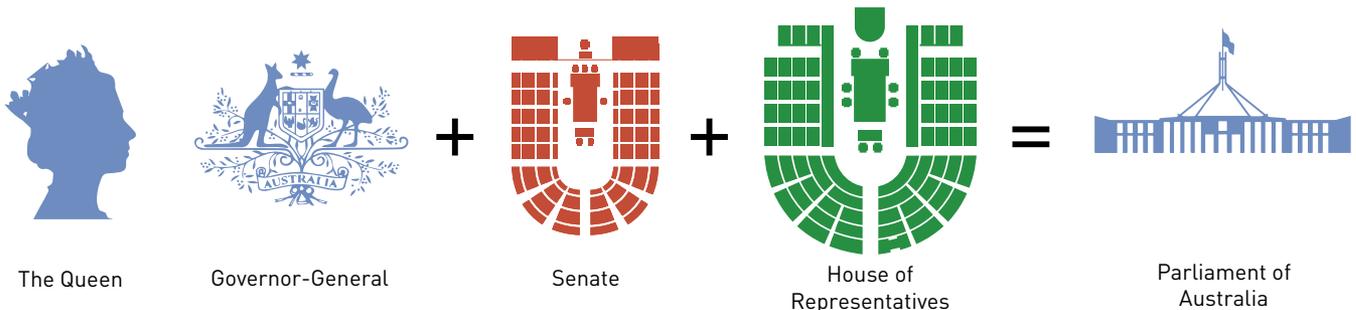
What is the bicameral system?

Australia's parliament is bicameral, which means that there are two houses. They are the House of Representatives (also known as the lower house) and the Senate (also known as the upper house).

The House of Representatives

Who gets elected into the House of Representatives?

Australia is divided into 150 electorates, each of which represents an area of the country that has around 100 000 people who are allowed to vote. These people vote for a person to represent them in the House of Representatives. The House of Representatives therefore has 150 members of parliament (MPs), with each seat representing an electorate. This is representative democracy in action. More populous states, such as New South Wales and Victoria, have more seats in the House of Representatives than states with smaller populations, such as Western Australia, South Australia and Tasmania.



Source 1 Australia's parliament has two houses: the House of Representatives and the Senate. Parliament also includes the British monarch, represented by the governor-general.

Who forms government and what is their role?

People who are elected into parliament not only represent their electorate, but are also usually part of a political party. A political party is a group of people who share similar beliefs on how Australia should be governed. Australia has two major political parties, the Liberal party and the Labor party. The political party with the most seats in the House of Representatives forms government and the leader of this party becomes the prime minister (PM) and is the head of government. The role of the prime minister is to make important decisions about national issues, attend question time (when MPs ask questions of the prime minister and ministers) and choose members of parliament to be ministers. Ministers are people in charge of an area of responsibility outlined in the constitution, such as defence, immigration and health. The prime minister and ministers make up a group called cabinet, which is headed by the prime minister and meets on a regular basis to create and amend important laws.

Who is the opposition?

The political party that has the most non-government seats becomes the opposition. The leader of the non-governing party is known as the leader of the opposition. The role of the opposition is to represent alternate views and to cast a critical eye over the business of government. This is most evident during question time when the opposition ask questions of the government to make them account for their actions. In particular, ministers often have to answer questions relating to their area of responsibility. For example, the Minister for Communications may be asked questions over the cost and installation of the National Broadband Network (NBN).



Source 2 The House of Representatives in Parliament House, Canberra. The House of Representatives is also known as the lower house.

What is the role of a member of the House of Representatives?

The people who have a seat in the lower house are known as members of the House of Representatives. Most members of the House of Representatives belong to a political party where members vote together on Bills (proposed laws). This is because these members have similar beliefs on how Australia should be governed. However, some members do not belong to a political party and are known as independents. Regardless of political party association, the role of members of the House of Representatives is to create and amend laws through debate and voting on Bills. They are also expected to carry out and scrutinise the work of government. Question time, debates and voting in the lower house are managed by the speaker, who is a member of the house of representatives elected into the position.

The Senate

The Senate is also known as the upper house. A person elected into the Senate is known as a senator. The Senate is made up of 76 senators, 12 from each state and two from each territory irrespective of population. The main reason for this is that the original purpose of the Senate was to protect the interests of less populous states, such as Western Australia and Tasmania, against the interests of the more populous states, such as New South Wales and Victoria. Given that a Bill has to pass both the Senate and House of Representatives to become law, giving equal representation to all states makes sure that the populous states can't out vote the rest of the states in parliament. However, in practice senators vote according to their political party affiliation rather according to state or territory affiliation.

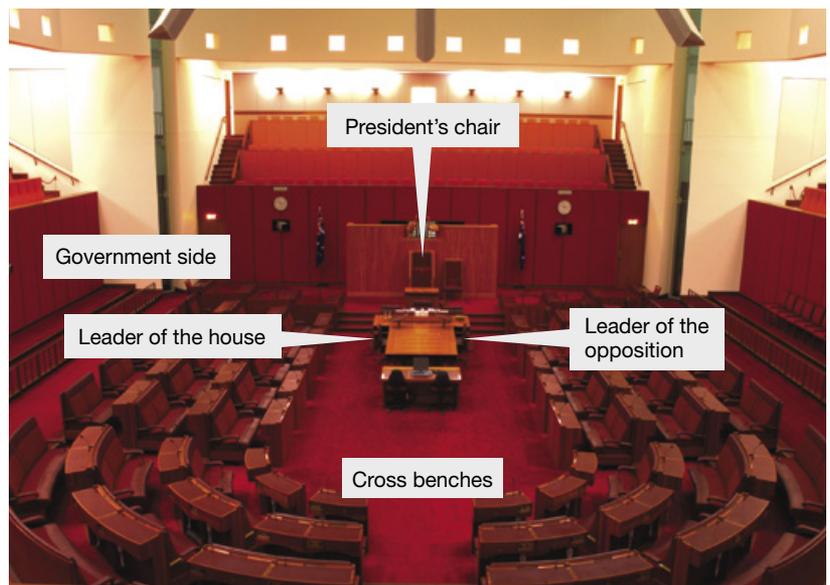
How do members get elected into the Senate?

Members of the Senate are voted in by proportional voting, which means that the representation of political parties in the Senate closely matches the proportion of the total vote. When voting for the House of Representatives, citizens can only vote for the candidates in their electorate, with each electorate electing a local member. However, when voting for the Senate, citizens can vote for any candidate or party running in that state. The seats in the Senate are then allocated to each party according to the proportion of the total votes it received. This makes it more likely for independents or members representing small parties to be elected as senators, which is important since it means the government frequently does not have a majority in the Senate. Despite having a majority in the House of Representatives, the government must then negotiate with minor parties to pass Bills in the Senate, otherwise they will not become law.

What is the role of the Senator?

As elected members, senators are there to represent the views of their voters. They make and amend bills,

examine the business of government and debate matters of national importance. Given that opposition and minor party senators may outnumber government senators, it provides them the opportunity to check government Bills and establish committees that check the work of the government closely. These committees can produce reports for the public so they can be informed as to the performance of the government. This is why the Senate is also known as the house of review. Just as the speaker manages the House of Representatives, the Senate is managed by a president, who makes sure the Senate operates in an orderly manner. The leader of the government in the Senate presents the views of the government and the leader of the opposition in the Senate represents the alternate views.



Source 4 The Senate in Parliament House, Canberra. The Senate is also known as the upper house.

Check your learning 17.4

Remember and understand

- 1 Which house of parliament is the:
 - a lower house?
 - b upper house?
- 2 How many electorates are there in the House of Representatives?
- 3 What is the title given to the leader of the majority party in the House of Representatives?

Apply and analyse

- 4 Discuss the role and function of the House of Representatives.

- 5 Explain why there is an equal representation of members from each state of Australia in the Senate.

Evaluate and create

- 6
 - a Create a chart to outline the pros and cons of having only one house of parliament in Australia's federal government.
 - b In your chart, indicate which would you prefer: a system of government with only one house of parliament or the current system? Justify your answer.

17.5 Changing the constitution

Times have changed considerably since the constitution was first written in 1901. For this reason, it is an important feature of the constitution that it can be changed. To change the Australian constitution, a proposal must first be approved by parliament. This proposal is called a Bill. Once the Bill is passed, it is voted on by the Australian people in what is known as a referendum.

Referendums

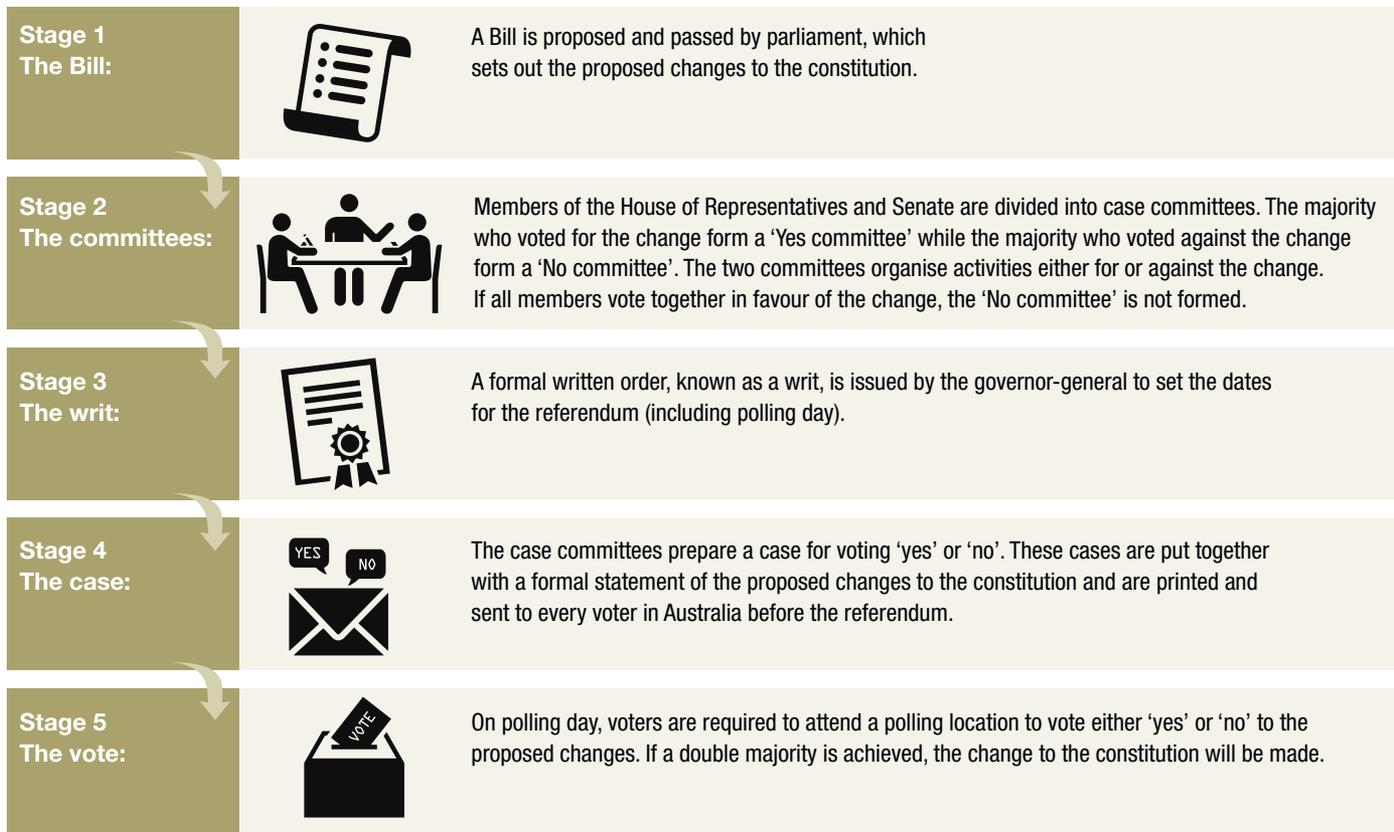
While Australia's democratic system leaves much of the decision-making to politicians elected by the people, changes to the Australian constitution are considered so important that they must also be approved directly by the citizens.

Before the referendum is held, members of parliament put together a list of arguments for and

against the Bill, which is then sent out to every Australian who is eligible to vote. On the day of the referendum all Australian citizens on the electoral roll vote 'yes' or 'no' to the proposed change.

For the change to be accepted, it has to be approved by a majority of voters in a majority of states, and by a majority of voters across the nation. This is known as a double majority. Voters living in the territories are only counted in the national majority. Once the bill is accepted by a double majority, it is given final approval by the governor-general on behalf of the Queen, a formality known as royal assent.

Since Australia became a federation in 1901, 19 referendums have proposed 44 changes to the constitution; only eight changes have been agreed to.



Source 1 The five stages involved in holding a referendum

The importance of the 1967 referendum

The most successful referendum in Australia's history was held on 27 May 1967 when more than 90 per cent of voters agreed to change the constitution to acknowledge Aboriginal and Torres Strait Islander peoples. Being included in the constitution meant that Indigenous Australians were now abiding by the same laws as the rest of the population. This change was extremely important as it also meant that Indigenous people were given the same rights as other Australian citizens, including the right not to be discriminated against. In the same referendum it was also agreed that Aboriginal and Torres Strait Islander peoples should

be counted when determining the size of Australia's population.

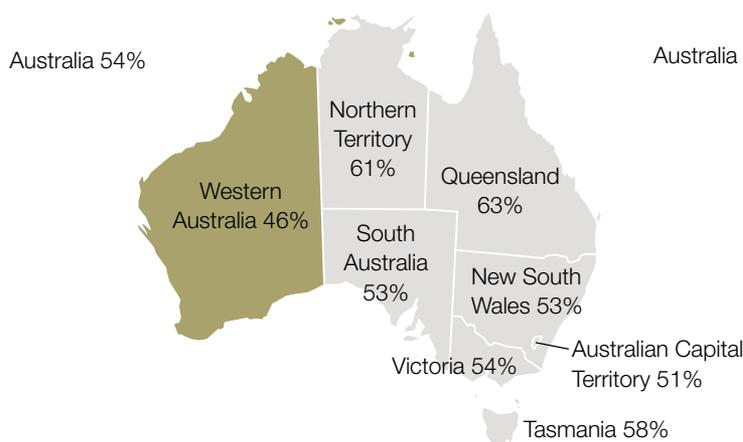
More than the legal consequences, the referendum also had major symbolic implications as it showed that millions of non-indigenous Australians wanted to strengthen the rights of Australia's Indigenous peoples.

Today, 27 May marks the start of National Reconciliation Week, a time when Australia celebrates the relationship between Aboriginal and Torres Strait Islander peoples and other Australians. It is also a time for Indigenous communities to shed light on past and present injustices.

SCENARIO ONE

CHANGE THE CONSTITUTION

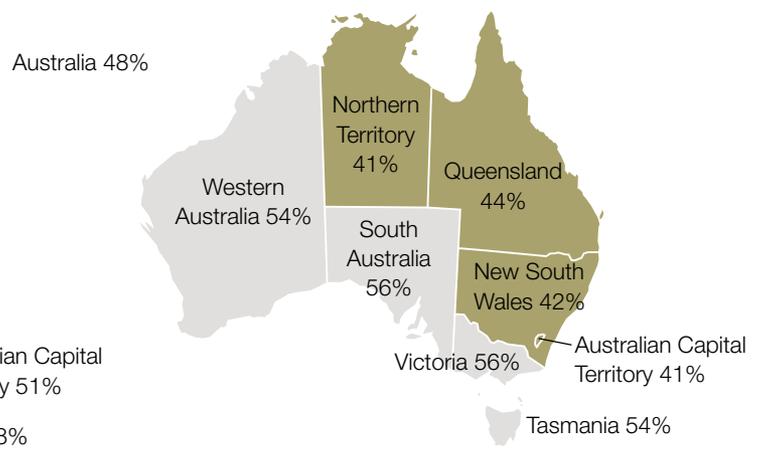
- ✓ Majority of Australian voters
- ✓ Majority of voters in at least four states



SCENARIO TWO

DON'T CHANGE THE CONSTITUTION

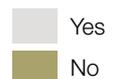
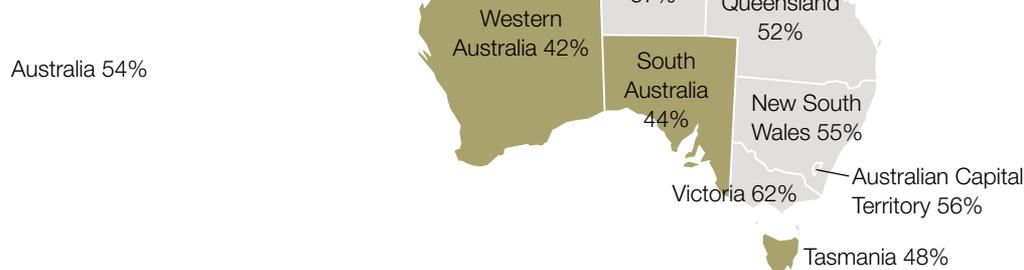
- ✗ Majority of Australian voters
- ✓ Majority of voters in at least four states



SCENARIO THREE

DON'T CHANGE THE CONSTITUTION

- ✓ Majority of Australian voters
- ✗ Majority of voters in at least four states



Source 2 The Australian Constitution can only be changed with the support of the majority of voters and a majority of voters in at least four states.

casestudy

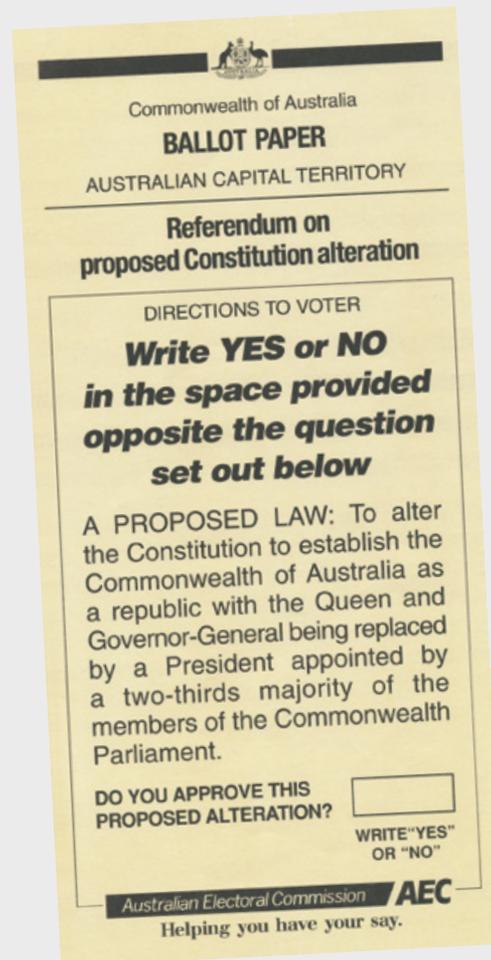
Rejecting the republic

Our most recent referendum was held on 6 November 1999 when Australians were asked if they wanted to become a republic and replace the Queen and the Governor-General with a president. Unlike the 1967 referendum, which had overwhelming support, the republic referendum divided the nation. Both the 'Yes' side, headed by Malcolm Turnbull, and the 'No' side, headed by Kerry Jones, tried winning voters over with their respective arguments.

The 'Yes' side argued that:

- Australia is an independent nation and our head of state should be Australian, not British
- in a democracy, the head of state should be elected, not born, into their position
- Australia is a multicultural nation and many people feel no affiliation to Britain.
- The 'No' side argued that:
 - the monarchy has been working well for more than 200 years and there is no need to change it
 - the 'Yes' supporters are too divided in their views on how a republic should be organised (e.g. what powers the president would have)
 - some states might want to break out from the federation.

In the end, all six states failed to reach a majority and the 'No' side won by 54 per cent nationally.



Source 4 The most recent referendum took place in 1999. The public voted against becoming a republic.

Check your learning 17.5

Remember and understand

- 1 What is a referendum?
- 2 Why do people vote on a referendum when they have already elected politicians to represent them?
- 3 What is meant by double majority?
- 4 What happened in 1967 and why is this important?

Apply and analyse

- 5 Look at Source 4.
 - a What is the ballot asking people to vote on?
 - b Australia is a constitutional monarchy, which means that we elect a prime minister as a representative for a monarch (Queen Elizabeth II).

Other countries, such as the United States, nominate a president to lead the country. Do you think Australia should become a republic? Why or why not?

Evaluate and create

- 6 Create a poster arguing whether Australia should remain a constitutional monarchy or have a referendum to become a republic. Use the Internet to research facts that will support your poster and include images that you believe represent Australia as a constitutional monarchy or republic.

17A rich task

A classroom constitution

Many countries and organisations around the world have developed a constitution, which acts as a set of rules for everyone to follow. A constitution is important as it clearly defines the rights and responsibilities of all members. This helps to promote a fair nation or organisation, as everyone is required to follow the constitutional rules that are developed by the members.

While many organisations have constitutions, they are most important for not-for-profit organisations. A not-for-profit organisation is run as a charity and does not generate a profit. By developing a constitution, a not-for-profit organisation can ensure that it acts within the specific principles and beliefs set by the organisation's constitution.

Many schools also have constitutions which map out the roles and responsibilities for staff, students and anyone else who might be involved in the day to day activities of the school.

The constitution might cover things such as the process for decision-making by the school council, how staff are appointed or how rules and policies can be made or changed.

A constitution should reflect the values and goals of a group or organisation. Imagine your class was creating its own constitution. What shared values and goals do you think should be included?



Source 1 Work together with your class members to develop a classroom constitution.

skilldrill

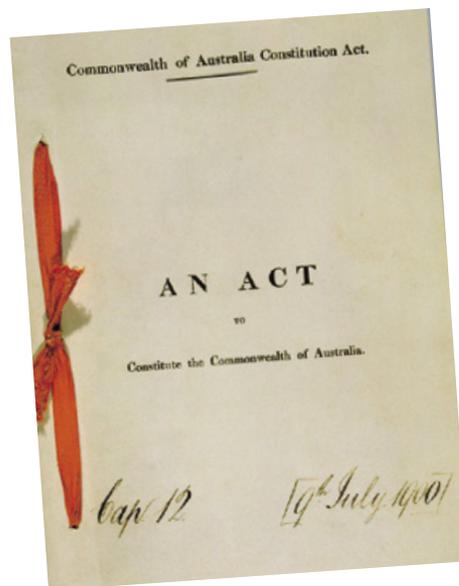
Creating a constitution

An organisation is any group of people who work together with a common goal. This can include businesses, religious groups, schools or even classes. An organisation's constitution is written by the members of the organisation and is developed to reflect the beliefs and principles of the majority. In this way, it helps the organisation to function to benefit its members.

- Step 1** Write a preamble. A preamble is usually a brief paragraph that states the overall purpose of the constitution.
- Step 2** Write the name of the organisation.
- Step 3** Write the purpose of the organisation.
- Step 4** State who will be considered a member of the organisation.
- Step 5** Provide the rules and responsibilities that relate to the people leading the organisation.
- Step 6** Provide the rules and responsibilities for all members of the organisation.
- Step 7** Outline what action can be taken if members do not follow the rules.
- Step 8** Explain how amendments can be made to the constitution.
- Step 9** Explain how and when a referendum can be called.

Apply the skill

- 1** Develop a classroom constitution: Developing a classroom constitution will require you to work with your class members and teacher. The constitution you come up with must reflect the rights and responsibilities of all students to create the best possible learning environment for all. Remember that, by law, the teacher has certain rights and responsibilities that are not negotiable. Use the steps of the skill drill to develop your ideas for your classroom constitution. Share your ideas with the rest of the class and then vote on what should be included in the constitution.
- 2** How do you feel about the classroom constitution? Were there any things you feel should or should not have been included?
- 3** What kind of situation do you think would benefit from a classroom referendum?



Source 2 The Australian constitution sets out the rules of our political system.

Extend your understanding

- 1** Visit the Parliament of Australia website and go to 'About Parliament', 'Senate', 'Role of the Senate' and then 'The Australian Constitution' (www.aph.gov.au/About_Parliament/Senate/Powers_practice_n_procedures/Constitution) to see the Australian constitution in full.
- 2** What differences can you see between your classroom constitution and the Australian constitution?
- 3** What similarities can you see between your classroom constitution and the Australian constitution?

17.6 Australia's legal system

The constitution is not just important for setting out the way government should operate and how power should be distributed. It also sets out the rules we must live our lives by.

Laws are the official legal rules that are set out by the federal and state constitutions. These laws have been designed to guide our society so that we can live and behave peacefully together.

In Australia, the legal system, sometimes known as the justice system, is made up of the people who make the laws and the organisations who must enforce the laws (such as the courts or the police). The purpose of the legal system is to make sure laws are followed and that we are all treated fairly and receive justice.

The three levels of government in Australia each make rules, either laws or by-laws, which must be followed by Australian citizens. If we do not follow these rules, we can be punished.

The role of the courts

As part of the judiciary, Australia's courts act as a place where people can resolve disputes and laws can be enforced fairly. If we break the law in Australia, we can be called to appear in court to face the consequences or plead that we are innocent. In court, the person accused of a **crime** will be known as the defendant. The court will appoint another party, known as the prosecution, to prove that the accused is guilty.

If we are found not guilty by the court, we can go free. However, if we are found guilty by the court we can be punished. How we are punished depends on the law we have broken and whether or not we meant to break it. For example, in extreme cases, breaking the law can result in a person being put in jail for life. At the other end of the scale, breaking a minor by-law (such as parking somewhere for too long) would result in a fine.

The purpose of Australia's court system is to provide justice to its people. This includes any person who has been accused of something they may not have done. It is therefore very important that the



Source 1 The Magistrates Court in WA is the busiest court in the state.

court treats all people fairly, as we will see on pages 452–455. Source 2 shows some of the courts involved in Western Australia's justice system.

Source 2 Some of the courts in Western Australia

| Court | Role |
|-------------------|---|
| Magistrates Court | <ul style="list-style-type: none"> the lowest court in the hierarchy the busiest court in the state hears cases about minor criminal matters and minor legal disputes between people (civil disputes) |
| District Court | <ul style="list-style-type: none"> intermediate court in the hierarchy hears cases about serious criminal matters (such as theft, drug offences or assault) |
| Supreme Court | <ul style="list-style-type: none"> the highest court in Western Australia hears the most serious criminal cases (such as murder and drug trafficking) and major civil disputes (usually worth over \$750 000) also has the power to review decisions from the lower courts in a process known as an appeal |

The role of the police

The Western Australian police force was officially established in 1853. Today it is one of eight police jurisdictions (an area over which police have legal authority) in Australia. In fact, Western Australia Police has the largest jurisdiction in the world, covering the entire state and run by more than 150 police stations.

It is Western Australia Police's responsibility to make sure people obey the laws. It does this by preventing, detecting and investigating crime, as well as arresting people who have broken the law. People who are arrested by the police for a crime must go to court, where they will either be found not guilty or guilty.

Police around Australia, and in other countries too, are there to ensure the community is safe. They do this in a number of ways (shown in Source 3). The police force is made up of many different roles or specialist units that look after citizens in different ways.

Source 3 Specialist units of the Western Australia Police

| Specialist unit | Role |
|-----------------|--|
| Water Police | <ul style="list-style-type: none"> responsible for underwater search and rescue missions and safety on boats and other water vessels |
| Canine Section | <ul style="list-style-type: none"> uses dogs to help detect explosives or drugs, track people or weapons, and arrest violent offenders |
| Mounted Police | <ul style="list-style-type: none"> ride horses so they are more visible to crowds responsible for crowd control, searches for missing people, and attending ceremonies (such as Anzac Day parades) |
| Police Air Wing | <ul style="list-style-type: none"> responsible for crime detection, search and rescue missions, and medical transfers by helicopter |



Source 4 The Western Australia Police Mounted Section are often responsible for crowd control.

Check your learning 17.6

Remember and understand

- 1 What are laws?
- 2 What is the purpose of the legal system?
- 3 Organise the District, Supreme and Magistrates Courts in order from lowest to highest, and state one feature of each of the courts.

Apply and analyse

- 4 Give two reasons why a person might have to go to court.

- 5 Why do you think we need police?
- 6 Think of another specialist police unit or role the police plays. How does this help us enforce the law?

Evaluate and create

- 7 Use the Internet to research one of the specialist police units shown in Source 3. Create a poster on your chosen unit, explaining what they do and why it is important.

17.7 Principles of Australia's legal system

There are several key ideas, or principles, that guide Australia's legal system. They focus on our responsibility as individuals to obey the law, as well as our right to fair treatment within the legal system.

The key principles of Australia's legal system are in place to ensure justice is served.

The rule of law

We don't just make up the rules as we go along; the legal system creates and enforces the laws that determine our rights and responsibilities. This is known as the rule of law.

Laws are the rules we must follow within a society. They are designed to protect our way of life by defining our rights and responsibilities. For example, we have the right to live and work in a safe environment, free from discrimination. This means that we also have the responsibility not to harm or discriminate against others.

The rule of law can be broken down into the following ideas:

- Power is distributed across the three branches of government (known as the separation of powers).
- Laws are made by the legislature and enforced by the judiciary.
- Judges must make decisions independently, without being told what to do.
- Laws are applied to everyone equally, without discrimination or special privileges.
- Everyone should know about the law, so that everyone can obey the law.
- We cannot be punished for an act that does not break any laws.
- We cannot be punished for an act that was committed before a law was created to make it illegal.



Source 1 Trials take place in courtrooms in one of Australia's many courts.



Source 2 Lawyers such as barristers are highly skilled professionals who use their knowledge of the law to represent people in court.

The right to a fair trial

The right to a fair trial is a crucial part of justice in Australia. An adversarial system has been adopted in Australia's legal system as a way to provide a fair trial. This means if you are arrested and later charged for breaking the law, you can plead not guilty and have the right to appear in court to face trial. Under the adversarial system, two opposing sides, the defence and the prosecution, present their argument to either a judge or magistrate (depending on which court the trial is conducted in).

The right to a fair trial means that the person's race, sex, characteristics or any other factors not related to the crime should not affect the outcome of the trial. It is also important that the person accused of the crime and the person doing the accusing are treated equally and have the same opportunity to present their arguments in court.

Another cornerstone of a fair trial is the appointment of impartial, independent and unbiased judges. That means, for example, that those involved in the trial cannot be friends or family members of the accused or the victim, or have any other personal

connections that could affect their judgement. In a fair judicial system the court is also separate from the government and without political bias.

In Australia you, as a member of the public, can visit any court and observe the proceedings, except under special circumstances. Allowing the public to visit courts and observe trials helps ensure transparency.

The right to legal representation

Australia's legal system is complicated. It is made up of many laws and rules that determine how these laws are to be applied in certain situations. Most members of the public have limited knowledge of the law and need help from professionals to understand legal processes. That is why every Australian who is accused of having committed a crime has the right to a legal professional, such as a lawyer, to represent them in court. We will learn more about legal representation on page 447. In addition to a legal representative, a person with hearing disabilities, or who do not speak English, also has the right to access translation services or interpreters.

Getting a sentence reviewed

People who are not satisfied with the outcome of their case have the right to appeal and have their case reviewed in a higher court, as long as there are reasonable grounds. There can be many reasons for an appeal to be granted. For example, new evidence might have surfaced that has the potential to free, or reduce the sentence of, the accused. Appeals can also be granted if there is reason to believe that the trial was not conducted in a fair manner. For example, if it is found that the jury was biased, influenced by

threats or bribed, the accused would have the right to have their case heard again. If a case is reviewed in a higher court, this court will either reverse or confirm the existing sentence.

One of the dangers of appealing a sentence is that a judge in a higher court might find that the original sentence was not enough. Instead of having a sentence reduced, a person might end up in a worse position than when they began their appeal.

For more information about the key concept of justice, refer to page 414 of 'The civics and citizenship toolkit'.

Presumption of innocence and burden of proof

The idea that someone is innocent until proven guilty is an important part of any legal system. It means that a person who is accused of a crime is not required to prove their innocence. Instead, the prosecutor must prove that the person is guilty of the crime, beyond reasonable doubt. This means that the burden of proof is on the prosecutor, as they are the one required to prove or disprove a disputed fact in court.

Burden of proof is the phrase used in the legal system to indicate who has the responsibility of proving a fact in court. In criminal cases (such as murder, robbery or assault cases) the prosecutor must prove that the person accused of a crime is guilty. In civil cases (such as disputes between people) it is up to the complainant (the person making the complaint) to prove that they are right.

In order to uphold the presumption of innocence, it is important that the jury and others involved a court case are not influenced by what they read or watch in the media (see Source 4). That is why authorities like the police do not make statements about whether or not they think the accused person is guilty. They are not allowed to influence or bias a jury's opinions based on anything else other than the facts of the case.



Source 3 One of the key cornerstones of our legal system is that people are presumed innocent until proven guilty. This is primarily because we do not want to convict and potentially imprison innocent people.

Presumption of innocence in court is considered a human right around the world and is used as a guiding principle in most democracies. The most basic reason behind this principle is that it is better to free someone who is guilty than to convict someone who is innocent.



Source 4 Media representations can affect the public's perceptions of a person accused of a crime.

Trial by media

In order to uphold the idea of presumption of innocence when a case gets to court, it is important that the person accused has not already been judged in the eyes of the public, by what they have read in the newspaper or watched on TV.

'Trial by media' has been a potential threat to fair trials since the birth of the newspaper. That is why most media organisations have ethical codes in place to stop them from, for example, publishing personal information about a suspect before he or she is convicted. However, social media makes it increasingly hard to control the information that is made public before trials.

Check your learning 17.7

Remember and understand

- 1 How does the rule of law protect our way of life?
- 2 What is meant by the right to a fair trial?
- 3 Why might someone need legal representation if they are legally allowed to represent themselves in court?
- 4 Why do you think that the burden of proof is on the prosecutor and not the defendant?

Apply and analyse

- 5 Look at the photograph of the barristers in Source 1.
 - a Why do you think they might be wearing that type of clothing?
 - b Search the Internet to find out why some barristers wear wigs. Why do you think they don't wear wigs anymore in Western Australia?

Evaluate and create

- 6 Have you ever felt like you were being judged unfairly? Has someone accused you of doing something wrong even though they had no proof? Write a diary entry explaining the situation and how that made you feel. In your diary entry, reflect on the importance of following principles such as the right to a fair trial and the burden of proof.

17.8 Participants in the legal system

Like the Australian political system, the Australian legal system is designed so that citizens can participate. Throughout our lifetime, many of us will become involved in the legal system, as part of a **jury**, as **witnesses** or maybe even as lawyers or **judges**.

Juries

Jury service, or jury duty, is the term used to describe a citizen's responsibility to serve as part of a jury.

In Australia, juries are usually made up of 12 people who are chosen at random to listen to a court case and decide together if they believe an accused person is guilty or not. Once they have heard the evidence of a trial, a judge will ask the jury to consider their verdict, or decision. During this time, jury members will discuss the case privately. They may only make a decision based on what has been presented in court, not on any opinions or information they have heard outside of the court room.

The role of the jury in criminal and civil court cases might vary. For example, criminal cases (for offences such as robbery, assault or murder) require the jury to decide whether or not the accused is guilty. In civil cases (which include individual disputes such as fights over property or business), the role of the jury is to decide if a person, known as the defendant, is in the wrong and whether or not they owe any compensation or money to the person who has brought them to court.

Juries are not used in all court cases. Sometimes very minor offences, such as unpaid fines, are heard by a single judge who will make any decisions that are necessary.

People are selected to be part of juries at random from the electoral roll. This means you must be 18 or over to be part of a jury. Citizens who are chosen for jury duty do not need to be experts on law. They just need to listen to the facts of the case, and decide whether or not they believe the accused is guilty. This gives Australians the opportunity to participate in the legal system and help to deliver justice.



Source 1 Juries play an important role in the delivering justice by listening to the facts of a case and then delivering a verdict, or final decision, about whether or not they believe the accused is guilty.



Source 2 Witnesses can provide evidence to the court based on what they have seen or heard.

Witnesses

Witnesses also play a very important role in the legal system. People who have seen or heard an event or dispute may be called upon to present their observations as evidence in a court case. Evidence provided by witnesses can play a crucial role in proving whether or not a person is guilty. For example, many people have been able to get away with a crime because no one has witnessed it.

Witnesses are therefore required to swear an oath that they will tell the truth when giving evidence. However, sometimes witnesses can be mistaken and think they have seen or heard something that never happened. In these instances, the testimony or statements of witnesses in court can be damaging to delivering justice.

Expert witnesses are a specific type of witness who can provide important information about a case even though they might not have seen or heard it take place. Expert witnesses, such as doctors or forensic scientists, are often called to apply their understanding, skills and expertise of a topic to a case. For example, a forensic accountant might be called upon to analyse a person's bank accounts if they are suspected of committing a financial crime such as fraud. The evidence provided by expert witnesses can help a jury to better understand the facts of a case, and therefore decide on the best verdict.

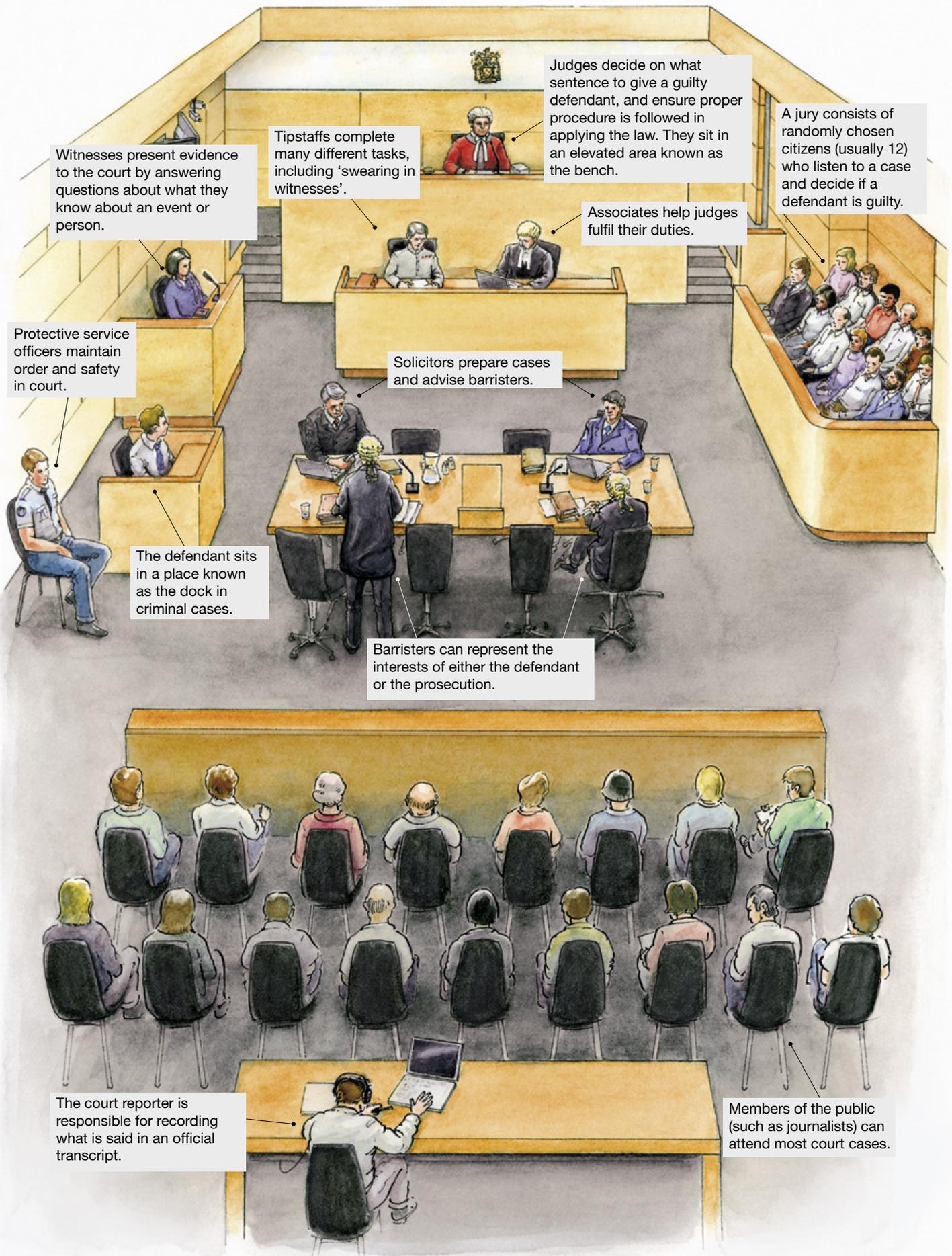
Judges

As part of the judiciary, judges are extremely important participants in the legal system. They act independently of the executive and legislature to apply laws to different cases.

In Western Australia, judges must swear an oath 'to do right to all manner of people according to the laws and usages of the State without fear or favour, affection or ill will'. This means they promise to apply the law without discriminating against or favouring anyone.

A judge's role can vary depending on the court they are in. Some of the roles they may need to perform include:

- ensuring proper procedures are followed during a court case
- maintaining order in the courtroom during a hearing or trial
- deciding if a person is guilty or at fault based on the facts of the case (in cases that do not have a jury)
- deciding what is an appropriate sentence for a person who is found guilty (in criminal cases) or who is at fault (in civil disputes).



Source 2 People who have been accused of something have the right to legal representation and a fair trial.

Legal practitioners

Any person has the right to a **legal practitioner** to act on their behalf in court. The law is not only complex, the court must listen to both sides of an argument equally and impartially. A legal practitioner is a person who specialises in knowledge of the law and courtroom arguments. They also have a certificate granted by the legal profession to act on the behalf of a citizen who need their services. Having a legal practitioner act on behalf of a person makes the trial process fairer.

Solicitors

A solicitor is a registered legal practitioner who practises and represents their client. A solicitor typically spends most of their time out of court. Their day-to-day affairs include communicating with their clients and other people related to the case, listening and taking instructions from clients, writing letters, filling in court documents and on occasions, negotiating settlements out of court. A solicitor may appear on behalf of their client in court but usually it is for less important hearings. More formal court appearances and hearings are left to barristers.

Barristers

A barrister is a legal practitioner who specialises in court trials, hearings and procedures. They spend most of their time in court. Because they are not involved in the day-to-day to running of a case file for a client, barristers are able to specialise in conducting arguments and knowing specific areas



Source 3 The people who represent us in court play an important part in making sure we have a fair trial.

of the law. For example, some barristers can become experts in criminal law, family law or contract law. With increasing knowledge of the area of law, barristers have the training and experience to anticipate the range of likely court outcomes. They can then work with the solicitors (and their clients) to choose the most appropriate argument. The level of specialisation in knowledge becomes recognised by the legal profession and often very experienced and respected barristers are given the title of Senior Counsel. Previously, the title was Queen's Counsel (QC).

Check your learning 17.8

Remember and understand

- 1 What is a jury?
- 2 What role do witnesses play in the legal system?
- 3 What is a legal practitioner?
- 4 What is a solicitor?
- 5 What is a barrister?
- 6 List three of a judge's responsibilities.

Apply and analyse

- 7 Why do you think it is important that juries only refer

to information presented during the court hearing when making a decision on a court case?

- 8 In what other jobs or roles could Australians participate in or contribute to the legal system?

Evaluate and create

- 9 Create a Venn diagram to show the similarities and differences between the roles of typical witnesses and expert witnesses in a court case.

17.9 Accessing legal representation

As we have already learnt, everybody in Australia is entitled to legal representation, however, there is no right to free legal representation. Many people pay for a legal practitioner to represent them. The principle of legal representation is so important that if you cannot afford a legal representative, you may be entitled to **legal aid** – a form of affordable legal representation so you can be represented in a court of law.

However, this does not mean that everyone receives the same quality of legal representation. The prosecution has access to state resources to obtain the best solicitors and barristers. Defendants relying on legal aid will only get access to a certain amount of funds, which limits how they will be represented.

Legal aid

Legal aid is a taxpayer-funded service that ensures that legal practitioners are available for people who cannot afford their own lawyer. This means that citizens will maintain the right to be treated equally by the law and therefore to receive a fair trial. Legal aid is offered by several organisations, including state-based legal aid commissions, community legal centres, and Aboriginal and Torres Strait Islander legal services.

Because it is taxpayer-funded, an important part of legal aid is that a citizen must be assessed for a grant. The assessment is made up of three parts:

- A means test determines whether you can afford a legal practitioner on your own. It doesn't necessarily mean a highly qualified lawyer. If you can afford any lawyer, you will not be eligible for a grant.
- A type of matter test determines whether your problem is one of the identified 'priority' categories. If it is not, you will be directed to get appropriate assistance elsewhere.
- A merit test determines whether you are likely to succeed in your case and whether providing aid to you will achieve what you want.



Source 1 Community legal centres provide legal services to people in need.

Some of the services legal aid provides include:

- legal representation through lawyers working for Legal Aid WA or for private law firms (only people with incomes below a certain level get their own lawyer)
- minor assistance, which means that solicitors can help you negotiate, write letters, draft documents or prepare to represent yourself in court
- legal advice through its duty lawyers located at court, either a face-to-face meeting, phone conversation or video conference to people in remote areas
- information services such as a telephone information line, community legal education, an informative web site and a range of publications.

Community legal centres

Community legal centres (CLCs) are non-profit, non-government organisations that provide legal services to people in need. Community legal centres tend to be located in metropolitan areas that are low-income and have an above average number of people from a non-English-speaking background. Both of

these factors can inhibit the people's opportunity for equality before the law. Community legal centres tend to provide legal services pertaining to less serious matters of law. These include laws relating to tenancy (rent), family law, civil law and some minor criminal matters. There is often a strong community bond between community legal centres and the local area as people seek legal advice, education, advocacy and some representation when required. Often lawyers who work for a private firm may provide pro bono work for a community legal centre on a part-time or casual basis. Pro bono originates from the Latin phrase '*pro bono publico*', which means 'for the public good'. In our legal system, it means providing legal services on a free or significantly reduced fee basis, with no expectation of a commercial return.

There are a number of community legal centres but they are not related to one another.

Law Access – The Law Society of Western Australia

The Law Society of Western Australia is the professional association for Western Australian barristers and lawyers. They manage Law Access, which aims to assist people who cannot afford a lawyer or need legal assistance. It also provides access to lawyers who work in private firms that provide a pro bono service. Similar to legal aid, Law Access carries out a means test in order to determine which people to help because of limited resources.



Source 2 Some lawyers take on pro bono work on a part-time or casual basis.

Check your learning 17.9

Remember and understand

- 1 What is legal aid?
- 2 What are community legal centres?

Apply and analyse

- 3 Explain the test measures that determine a person's ability to access legal aid.
- 4 Why would solicitors and barristers provide services that are pro bono?

Evaluate and create

- 5 Should there be a limit to the funds available for people charged with serious crimes, such as murder or drug trafficking? How may this impact the principles of justice? Create a chart that suggests some of the advantages and disadvantages of having limited funds for legal aid.

17B rich task

The code of Hammurabi

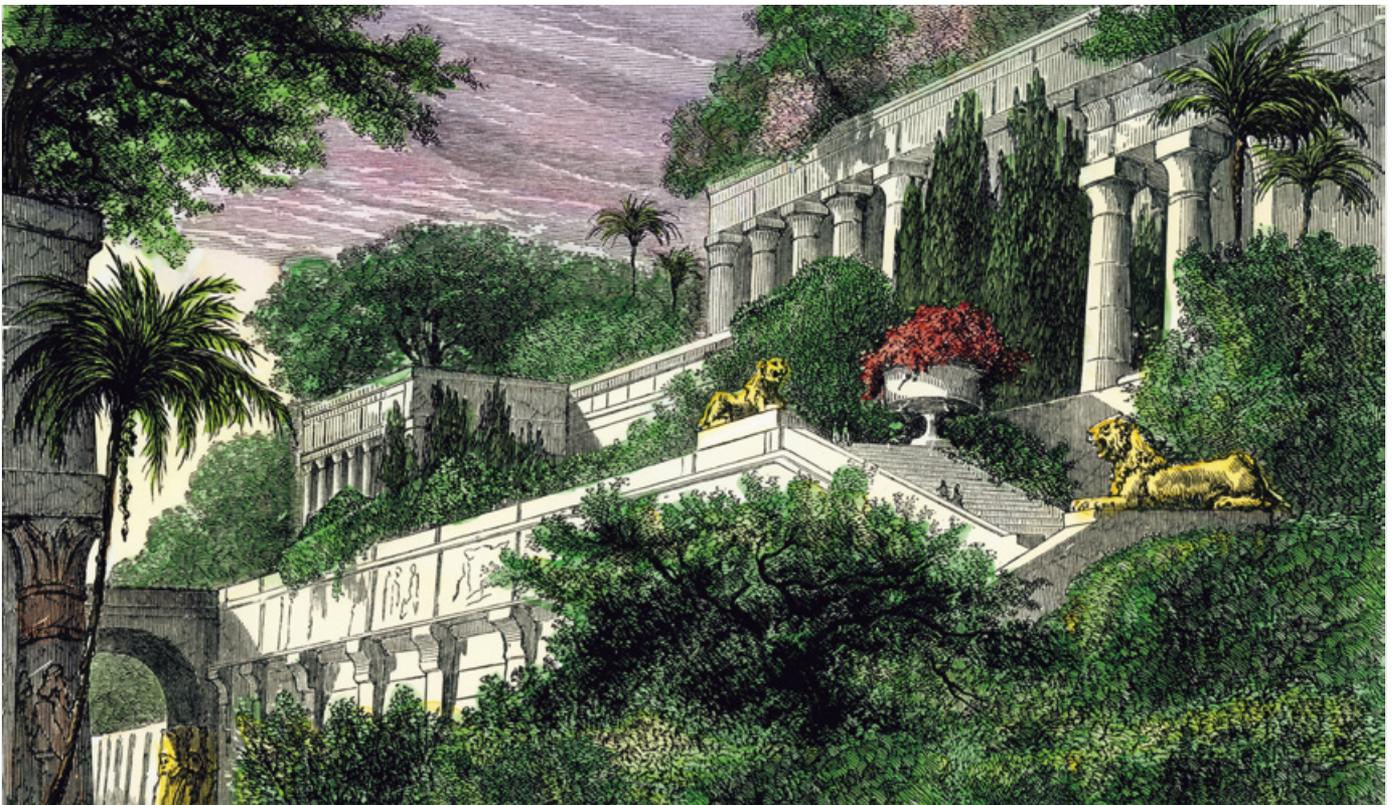
Laws have existed for thousands of years. Without laws or rules people would do whatever they liked, leading to chaos. As ancient tribes grew into complex societies, the need to determine the rights and responsibilities of people became greater. One of the oldest known groups of laws comes from Babylon between 1792 BCE and 1754 BCE. Legend has it that the laws were given to King Hammurabi by Shamash, the god of justice.

The code of Hammurabi had many laws that covered everyday life in that society. One of the most famous laws translates loosely to:

If a man destroys the eye of another man, they shall destroy his eye. If one breaks a man's bone, they shall break his bone.

The ancient Babylonian laws, as enacted by King Hammurabi, were used to govern his fast-growing empire of citizens. There were as many as 300 laws, which covered a wide range of issues, including murder, assault, divorce, debt, adoption, trade and agricultural practices.

Not only did the code stipulate the rules that all citizens must follow, it also dictated what actions must be taken by the judges, accuser and accused.



Source 1 Ancient Babylonia was one of the first great civilisations. Its capital Babylon was located in modern-day Iraq.

skilldrill**Interpreting a law in a court case**

To interpret a law we must read and understand what it intends to achieve. We must then apply that to the facts of the case before us.

Step 1 Read and understand the law thoroughly. What is the context of the law? From what perspective is the law written? What is it trying to achieve?

Step 2 Carefully consider all of the factors of the court case. This will include factors like evidence, witnesses, and the circumstances of the accused person and the accusing person or group.

Step 3 Consider how the law applies to the court case. Consider which other laws might apply to the case. Has there been another case of a similar nature or is this the first case of this kind?

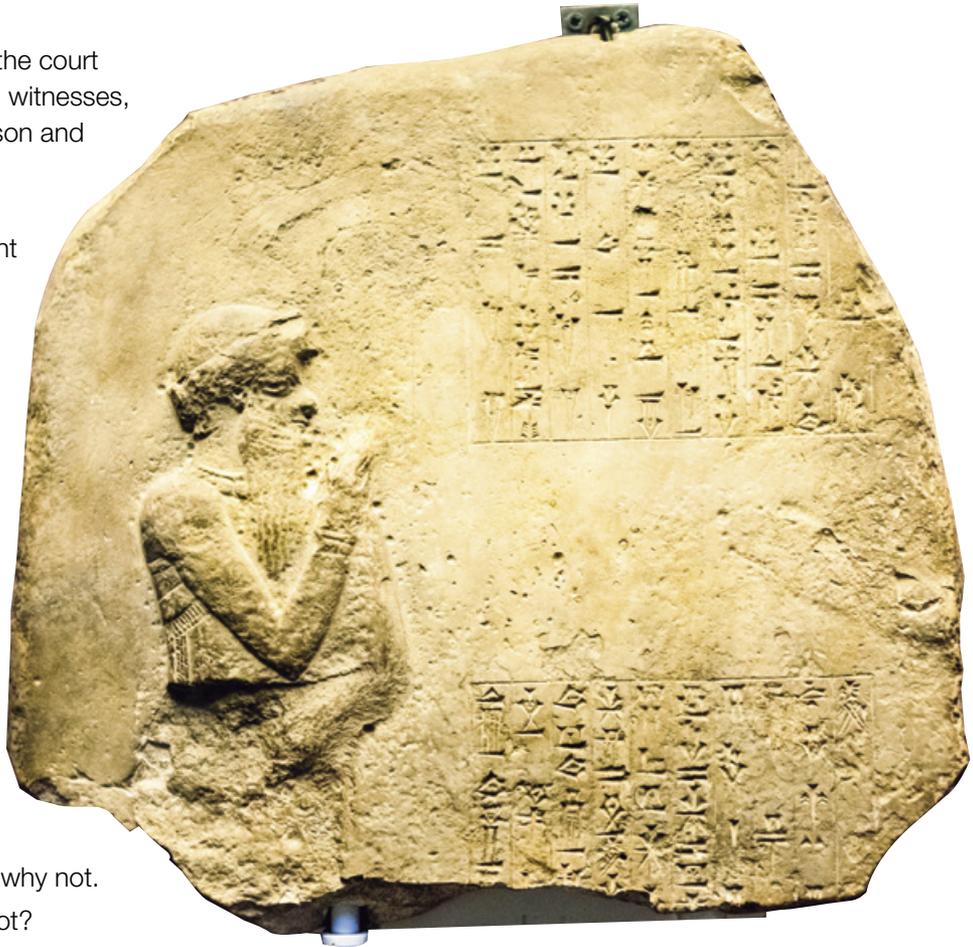
Step 4 Identify and apply the relevant laws to the court case. Explain and justify why the relevant laws have been applied.

Apply the skill

- 1 Consider the law described from the code of Hammurabi. What do you think it is trying to achieve?
- 2 Explain how you think the law would apply to a situation where a person physically attacked someone.
- 3 Do you think the law could apply to a situation whereby someone destroyed another person's property? Explain why or why not.
- 4 Do you think this law is just? Why or why not?

Extend your understanding

- 1 Use the Internet to research more laws from the code of Hammurabi. Make a list of the laws in your notebook and state your opinion on whether or not you think each law is a good way of dealing with such issues. Give reasons for your answer.



Source 2 The code of Hammurabi was carved into stones, which were then placed around the city of Babylon for the public to see.

Glossary: Geography

A

- aerial photograph** a photograph taken at some distance above (for example, from an aeroplane)
- alphanumeric grid** a row of numbers and a row of letters on adjacent sides of a map or other image providing an easy way to locate particular features
- annotated visual display (AVD)** a way of presenting the final results of a research project, incorporating images, graphs, notes and explanations in a poster-style format
- aquifer** layers of rock or soil in the ground that hold water or that water can pass through

B

- bar graph** a graph that shows information as a series of horizontal bars
- BOLTSS** a mnemonic (memory device) for remembering the essentials of a map: border, orientation, legend, title, scale and source
- bore** (also called an Artesian well) a drilled well that brings water up from deep in the ground

C

- cardinal points** the four main directions shown on a compass; north, south, east and west
- change** a key concept in geography: the dynamic nature of all processes on Earth, whether slow or fast, small or large
- choropleth map** a map that shows particular data or characteristics, such as population density, by using different shades of the same colour or different colours to show variations (e.g. light green to dark green)
- civil unrest** disturbances in a city or country characterised by protests against the government or ruling structures
- climate** the average weather – particularly rainfall and temperature – experienced in a particular area

over a period of time (usually 30 years)

- climate change** the generally accepted idea that the Earth's climate is warming and will continue to warm due to pollution
- climate graph** a combination column and line graph that shows the average monthly rainfall and temperature of a given place; also known as a climograph
- column graph** a graph showing information as a series of vertical columns
- compass** an instrument with a magnetic needle that points to the north; used for navigation
- compass bearings** a precise way of giving compass directions, such as 135° south-east
- compound column graph** a column graph that has subdivided columns for further comparison of groups
- concept map** a diagram or chart used to organise thoughts and ideas to show their relationship
- condensation** the process that takes place when a gas cools and forms a liquid; for example, water vapour becoming water droplets
- consumption** the use of a resource
- continuous resource** a resource, such as the Sun, that will never run out no matter how much we use it
- contour lines** lines drawn on a map that connect points at the same height to show the height and steepness of land

D

- delta** a fertile area of land that forms at the mouth of a river
- desalination** the process of removing salt from sea water
- desert** area that receives less than 250 mm of rain every year; can be hot or cold
- developing country** a less economically developed country that has some difficulties in supporting its own people
- direction** a way of orienting a map, usually shown by the use of compass points, such as north

distance the amount of space between two objects or places, generally measured by using the scale on a map

distribution the way in which things are arranged on the Earth's surface; the pattern formed by the way objects or places are distributed across a space

dot distribution map a map using dots or other shapes to show the location of a particular feature

E

- eastings** the gridlines that run vertically on a topographical map
- effluent** contaminated water that flows out of a treatment plant, sewerage system, industrial site, etc.
- environment** a key concept in geography: a specific place on Earth and all the things, both living and non-living, that are there

Equator an imaginary line that runs around the middle of the Earth separating the Northern Hemisphere from the Southern Hemisphere

ethnicity the background, nationality or culture of a person or group of people

evaporation the process by which a liquid (such as water) is converted to a gas

exception in geography, a feature that falls outside a usual pattern or does not follow an observed pattern

F

- feature** a distinctive landform or characteristic of the landscape, either naturally occurring or made by humans
- fieldwork** geographical study that takes place outside the classroom at the site of inquiry
- FIFO** fly-in, fly-out; used to describe the lifestyle of workers who live far away from their place of employment (such as a mine)
- floodplain** low-lying land next to a river or stream that is regularly flooded by water

flow map a map that shows movement (such that of as people or goods) from one place to another

fossil fuel fuel made from the decomposed remains of plant and animals that lived millions of years ago (e.g. coal, oil)

G

geographical inquiry the stages that geographers follow to guide their investigations

geothermal energy energy that comes from the internal heat of the Earth

Geographic Information System

(GIS) a software application designed to capture, store, manipulate, analyse, manage and present all kinds of geographical information

glacier a large frozen mass or river of ice that slowly moves down a mountain or valley in response to gravity

greenhouse gas a gas (e.g. carbon dioxide, methane) which is partially captured in the Earth's atmosphere preventing some of the Earth's warmth from escaping into space

gross domestic product (GDP) the total value of a country's goods and services

H

HIV/AIDS human immunodeficiency virus infection/acquired immunodeficiency syndrome; an illness that disrupts a person's normal immune system, making him or her susceptible to many other diseases

Human Development Index (HDI) a set of statistics used to indicate life expectancy, education and income for individual countries in order to compare and rank them

hydroponics a method of growing plants without using soil

I

ice cap a permanent layer of ice over the ground, such as found at the North and South Poles

iceberg a large mass of ice that has broken away from a glacier or ice sheet and is floating in open water

infiltration the process of water seeping through the earth

infrastructure the facilities and services necessary for any community, city or country to function (e.g. buildings, electricity, roads, airports and water supply)

interconnection a key concept in geography: the relationship between all things, both living and non-living, and all processes, both natural and human

irrigation the watering of crops in some way other than by precipitation

K

key inquiry question a question that helps geographers to plan and focus their geographical inquiries

L

land use map a map that shows what segments of land are used for (e.g. residential, commercial, agricultural)

latitude imaginary lines running east–west around the Earth's surface, parallel to the Equator, used to work out location and direction

legend (also called a key) a guide to the symbols and shading used on a map or other image

line graph a graph that displays data as a line

liveability a measure of what a place is like to live in according to particular criteria such as access to schools and work, climate, safety, etc.

longitude imaginary lines running north–south around the Earth's surface, from the North Pole to the South Pole, used to work out location and direction

M

magnetic north the physical place on Earth, near the North Pole, to which a magnetised needle points

map a simplified plan of an area shown from directly above

megacity a city with a population of more than 10 million people

metropolitan a term used to describe a major city or urban area

monsoon weather or climate produced by major wind systems that change direction seasonally; in northern Australia, the north-westerly and south-easterly winds that produce the rainy season between December and February

N

natural resource a resource that occurs in nature (e.g. water, minerals, trees, livestock)

nomad a member of a community that moves from place to place, usually based on the availability of seasonal food and resources.

non-renewable resource a resource that cannot be regenerated once it is used up (e.g. oil, coal)

northings the gridlines that run horizontally on a topographical map

O

overlay map a map on some type of transparent paper or layer that is placed over a base map, used to show the relationship between features or events on the Earth's surface

P

physical map a map that shows the locations and names of physical features of the Earth, such as mountains and rivers

pie graph a graphical way of presenting data; a circle is divided up into segments to represent the distribution of data

place a key concept in geography: a part of the Earth's surface that is identified and given meaning by people

plan view a way of showing something as if the viewer is looking down on it from above; a bird's-eye view

political map a map that shows the locations and names of built features of the Earth, such as country borders, cities, roads, dams and railways

population density a measurement of the number of individuals per unit area (e.g. 1500 people per square kilometre)

population pyramid a graph that displays the percentage of males and females in a region by age-group

precipitation the process of water in its various forms (rain, snow, hail, etc.) falling to the ground

primary data data for a geographical inquiry that was collected in the field by a geographer conducting the inquiry (e.g. survey data, hand-drawn maps or photographs)

Prime Meridian an imaginary line of longitude that runs from the North Pole to the South Pole; longitude is defined as 0° at the Prime Meridian

Q

qualitative data any information that can be recorded in words; for example, 'Uluru is very large'

quantitative data any information that can be recorded as numbers; for example, 'Uluru is 3.6 kilometres long'

R

refugee a person who moves to another country because of a natural disaster or to avoid persecution

region an area on the Earth's surface that makes it different from surrounding areas

renewable resource a resource that can regenerate or be regrown (e.g. trees) as opposed to one that cannot be regenerated (e.g. coal)

resource anything human or natural that people can use to satisfy a need

run-off water that does not penetrate the ground but flows on the surface towards rivers, lakes and seas

rural-urban fringe the area where cities end and country or farming areas begin

S

sanitation measures designed to ensure good health in a community by preventing human contact with health hazards (such as sewage)

scale a key concept in geography: the level at which a geographical inquiry takes place – personal, local, regional, national or global

scale (mapping) a system that indicates how the distances in the real world are represented on a map (e.g. written scale, line scale, ratio scale)

secondary data data used for a geographical inquiry that was not collected by the geographer conducting the inquiry (e.g. textbooks, atlases and government websites)

six-figure grid reference a system used to locate exact points on a topographic map

slum a settlement within a city where the inhabitants have inadequate housing and poor access to basic services

space a key concept in geography: the way things are arranged on the Earth's surface

spatial pattern the distribution of features on the Earth's surface that may form particular patterns, such as linear (in lines), clustered or radial (like spokes on a wheel)

sustainability a key concept in geography: the ongoing capacity of Earth to maintain all life

sustainable capable of being continued with minimum long-term effects on the environment

T

tailings the waste material left over from commercial mining operations

thematic map a map that shows details about a particular topic, such as land use or the distribution of resources

topographic map a map that shows the shape of the land, its relief and landforms

trend a general direction in which something is developing or changing (e.g. the trend in population in Australia is positive)

tropics the area of the world between the Tropic of Capricorn and the Tropic of Cancer

tsunami a giant ocean wave caused by an underwater earthquake

U

unsustainable not capable of being continued without long-term effects on the environment

urban sprawl the growth of a city onto productive farming land on the city fringes

V

vertical aerial photograph a photograph taken from directly above the landscape or feature being photographed, usually from an aeroplane or satellite, giving a **plan view**

virtual water the volume of fresh water used to produce a product, measured at the place where the product was actually produced

voluntary migrant a person who is free to choose where and when they move

W

waste-water water that has been used by people in domestic or industrial settings for washing, cleaning or flushing that contains waste products

water cycle the continuous cycle by which water evaporates from lakes and oceans, condenses into clouds, falls on land as rain, finds its way into rivers (often after human use) and returns to the oceans

water footprint an indicator of the amount of water (both direct and indirect) that is used to produce the goods and services

weather map a map that shows conditions in the Earth's atmosphere, such as air pressure, wind speed, wind direction, and warm and cold fronts

Glossary: History

- A**
- Aboriginal peoples** a term used to describe the original inhabitants of a country (e.g. Australia); more specifically, the original inhabitants of mainland Australia, Tasmania and offshore islands (except for the Torres Strait Islands)
- acropolis** a raised and fortified area (often on a rocky hill) within a Greek city-state on which public structures such as temples were built
- AD** the abbreviation of *Anno Domini* (year of our Lord), used to indicate any time after the birth of Christ (*see also* CE)
- age** a period of history with specific characteristics that make it stand out from other periods (e.g. Stone Age, Bronze Age)
- agora** a large open area at the base of an acropolis that was both a meeting place and the centre of business and government for a Greek city-state
- amphitheatre** an ancient version of today's football stadiums, where raised seating rose up around a flat central area where events or performances were held
- amulet** a magical charm thought to keep away evil
- ancestors** anyone from whom a person is descended (i.e. a distant family member or relation from the past)
- aqueduct** a channel (often on top of arches; other times underground) that carried water, by gravity, from distant mountain springs to settlements
- archaeological dig** a site known (or thought) to contain artefacts or items of interest from the past that is roped off and dug up by archaeologists
- archaeologist** a person who uncovers and interprets sources from the past, such as the remains of people, buildings and artefacts; archaeologists often take part in archaeological digs
- aristocrat** a person who (through wealth or birth) belongs to the upper class of a social group
- artefact** any object that is made or changed by humans (e.g. a primitive tool, remains of a building)
- artisan** a person who is skilled at working with his or her hands in some specialised way
- auxiliary** a soldier who fought in the Roman army but who was not Roman; often recruited from a faraway province
- B**
- battering ram** a long pole (often a tree trunk) with a carved ram's head at one end used to knock through enemy fortress doors
- BC** the abbreviation of Before Christ, used to indicate any time before the birth of Christ (*see also* bce)
- BCE** the abbreviation of Before the Common Era, used to indicate any time before the birth of Christ (*see* bc)
- bias** a prejudicial attitude for or against something
- C**
- canopic jar** a jar used in ancient Egypt to store body parts removed during the mummification process
- caste system** a strict hierarchy (class system) used to organise society in India according to the Hindu religion; each person born into society is assigned a certain caste (class) that determines the type of work they will do and their position in society for life; in ancient India there were four main castes – Brahmin, Kshatriyas, Vaishyas and Shudras – as well as untouchables
- cause and effect** a key concept in history: chains of events and developments over time (both long term and short term), and the impact these have on people and places
- CE** the abbreviation of Common Era, which refers to any time after the birth of Christ (*see* ad)
- census** an official population count of a society at a given point in time
- century** 1. a period of 100 years; 2. a military unit in ancient Rome that consisted of between 80 and 100 soldiers
- chronology** a record of events in the order they took place
- chronological order** the order in which events have taken place
- circa** a Latin word meaning 'around' or 'approximately' (abbreviated as 'c.')
- Circus Maximus** a large racing track in ancient Rome where thousands of spectators were entertained by watching horse-drawn chariots race around a circuit
- citizen** someone who through birth (or by meeting certain conditions) is a recognised legal member of a community
- Citizen's Assembly** one of a number of assemblies of citizens set up in ancient Rome to help govern and administer the society
- city-state** an independent settlement (typical of those in ancient Greece) made up of an inner fortified city surrounded by houses
- civilisation** a society with large-scale urban settlements, defined systems of government, social organisation, religion and technologies
- colony** an outpost set up by a country, kingdom or empire, often for reasons of trade or defence
- Colosseum** a large amphitheatre built and used during the Roman Empire to stage gladiator fights and other forms of public entertainment
- concubine** a woman who is kept for the pleasure and entertainment of a man who already has a wife (usually an emperor or leader); a mistress
- conservator** a person who is trained to preserve and restore important historical sources and artefacts (such as paintings, vases, jewellery) that may have been damaged
- conserve, to** to take the action needed to preserve something from the past for future generations; it might be restored to its original condition or adapted in some way; a person involved in this work is called a conservator

consul a title given to the top official in ancient Rome; there were two consuls, each with different responsibilities

contestability a key concept in history: the state of an interpretation being open to debate, because of a lack of evidence or understanding from a different perspective

contest, to to argue against an idea or theory because of new evidence, or because of a different interpretation of existing evidence; an idea or theory that can be contested is said to be contestable

continent one of seven main land masses on Earth; the continents are Europe, Asia, Africa, North America, South America, Australia and Antarctica

continuity and change a key concept in history: the state of remaining the same over time, and the state of progress or decline

cosmos the universe

culture the customs and traditions that a community, society or civilisation develops over time that are passed down from generation to generation

D

decade a period of 10 years

deity (pronounced DAY•ity) a god or goddess

democracy a political system in which people hold the power, either directly or through representative democracy

demotic a system of writing based on the original script of ancient Egypt (i.e. hieroglyphs) that is more like running writing; faster and easier to write than hieroglyphs

dendrochronology a method used to estimate the age of trees by counting the rings in the cross-section of a tree trunk once it has been cut down

desert an area that receives less than 250 mm of rain every year; can be hot or cold

DNA the short way of writing deoxyribonucleic acid; DNA is found in the cells of all known living organisms; it is the unique genetic code of each living thing

Dreaming, the a belief system at the centre of all Aboriginal cultures; the Dreaming has different meanings for different Aboriginal groups; it gives meaning to everything – including creation, spirituality, family, the land and the law; the Dreaming sets the rules governing relationships between the people, the land and all other things for Aboriginal peoples

dynasty a period of rule by members of the same family who come to power one after the other (e.g. the Han Dynasty in China)

E

empathy a key concept in history: the ability to understand from the point of view of a particular group or individual, by taking their special circumstances and values into consideration

emperor the title of someone who rules an empire; ancient Rome and ancient China had emperors

empire a group of countries and/or areas, often with different languages and having different cultures, that are ruled by a central power or leader (known as an emperor or empress)

equite (pronounced EH•kwit•ee) a category of gladiators

era a period of time marked by distinctive characteristics, events or circumstances (e.g. the Roman era, the Victorian era)

evidence a key concept in history: information provided by a source that supports a given interpretation, or provides support for possible answers to inquiry questions

F

feudalism a system of rules and customs that helped to organise societies in Europe and Asia during the medieval period; feudalism organised every person in society according to a hierarchy (social structure) with the most important and powerful people at the top (such as a king or queen) and the least important people at the bottom (such as peasants)

first Australians a term used to describe Indigenous peoples in Australia and the Torres Strait Islands; the original inhabitants of Australia

fluorine dating a scientific method used to estimate the age of objects by measuring the amount of fluorine they contain

forum an open area in the centre of the city of ancient Rome where people met, debated and sold things

G

geneticist a scientist who specialises in the study of genetics

glacier a large frozen river or mass of ice that moves slowly down a mountain or valley in response to gravity

gladiator a person (usually male) who fought to the death in the amphitheatres of ancient Rome for the entertainment of the crowds; many were prisoners; some were criminals or slaves and a few chose to fight willingly

H

Hades (pronounced HAY•deez) the ancient Greek god of the Underworld; also the name of the Underworld itself – the place that the souls of people went when they died

heir someone who will legally inherit the fortunes of another; often the firstborn son

hierarchy (pronounced HIRE•ark•ee) a way of organising things (or people) from top down in order of importance or significance; ancient societies had strict hierarchies with the ruler at the top and the peasants at the bottom

hieratic (pronounced hi•RAT•ic) a simplified form of writing based on hieroglyphs that was used to communicate in ancient Egypt, though not as easy to write as the demotic script

hieroglyph a picture-like sign used in the original writing system of the ancient Egyptians

historical inquiry the process of examining historical evidence, conducting research and asking questions about it to find out about the past

Homo sapiens the scientific name for humans; a Latin term meaning 'knowing man'

hoplite a Greek warrior

hypothesis a considered opinion, theory or statement, based on research and evidence, about something that has not been proven (hypotheses is the plural form)

I

Indigenous Australians the original inhabitants of Australia, includes Aboriginal and Torres Strait Islander peoples

Inundation, the the yearly great flooding of the Nile River in Egypt; an inundation is a flood

K

kheprsh (pronounced kee•PRESH) a blue crown often worn by the Egyptian pharaoh when in battle; it was often studded with semi-precious stones to create a hard surface

L

land bridge a stretch of land connecting between two land masses (especially during pre-historic times) that allowed humans to move from one area to another before being cut off by the rising sea

legion a military unit in the army of ancient Rome made up of 60 centuries (i.e. around 5000 soldiers); soldiers in a legion were called legionaries

M

midden an ancient rubbish heap (that contains the remains of meals such as shells and bones)

millennium a period of 1000 years

monarchy a system of government in which a single monarch (such as a king or queen) has power

mummification the process of preserving a dead body by preventing its natural decay; in ancient Egypt a body was mummified by removing internal organs (except the heart) and drying out the remaining body tissue; the mummy was then buried

mummy a body prepared for burial or entombment in ancient Egypt (see mummification)

mythology a set of beliefs held by a particular people to help explain things that were not understood (e.g. strange natural events); these may include individual stories called myths

O

'Out of Africa' theory the theory that all humans have their origins in Africa

P

palaeontologist a scientist who studies life in the geological past by examining the fossils of plants and animals

palynology the study of microscopic organic matter found in soil

pankratation (pronounced pank•RAY•shun) a dangerous fighting event held as part of the ancient Olympic Games with virtually no rules

papyrus (pronounced pa•PIE•rus) a type of paper that the ancient Egyptians made from the crushed pulp of a riverside plant; the plant itself is also known as papyrus

paterfamilias (pronounced PAH•ter fam•ILL•ee•us) a Latin word meaning 'father of the family'; male head of a household in ancient Rome

patrician an educated and usually influential male member of one of ancient Rome's aristocratic families; usually a wealthy landowner

pentathlon an event of the ancient Olympic Games comprising five events: wrestling, javelin tossing, discus throwing, jumping and running

perspectives a key concept in history: a point of view about an event or issue; a person's perspective is often influenced by their knowledge, culture or beliefs

phalanx (pronounced FAL•anks) a tight battle formation used by the ancient Greeks in which soldiers would pack together with their shields overlapping; spears in the front row were held forward; those in the rows behind were held higher

pharaoh (pronounced FAIR•oh) the leader of ancient Egypt who was believed to be a god; the pharaoh had absolute power and total control

plateau a large section of flat land

plebeian (pronounced PLEH•bee•un) a term used to describe one of the many poor and uneducated people in ancient Rome

polygamy marriage to more than one person at the same time

praetor (pronounced PRE•tor) an ancient Roman official whose responsibilities included running the law courts, leading armies and governing provinces of Rome

prehistory the period of time before written records

primary source a source that existed or was made at the time in the past being studied

pyramid a geometrical shape with triangular sides sloping up to a single point from a square base; in ancient Egypt, stone pyramids were built as royal tombs for pharaohs

Q

quaestor (pronounced KWEE•stor) in ancient Rome, an official in charge of financial matters

R

radiocarbon dating a method used to estimate the age of something that was once alive; the amount of radioactive carbon in the remains of the object is tested and gives a good indication of age because carbon breaks down over time at a known rate

reincarnation the process of being born again; to live life again in another body (human or animal)

republic a system of government in which the people and their elected representatives (such as a president, politicians or senators) have power

resin a sticky substance (similar to the sap from a tree) used in ancient Egypt during the mummification process to glue bandages together

S

sarcophagus the outer case (usually stone) of the nest of coffins containing the dead body of a person of importance

scarab a type of beetle considered sacred by the ancient Egyptians; the word scarab also refers to items of stone or metal jewellery (called amulets) made in ancient Egypt in the form of the scarab beetle

scribe a highly educated person in ancient Egypt who was able to read and write

secondary source a source created after the time being studied

Senate a group of officials (senators) with ruling power during ancient Rome's history; the Senate had a lot of power during the republic; it continued to function during the empire, but its power was reduced

significance a key concept in history: the importance given to a particular historical event, person, etc.

Silk Road a trade route stretching west from China to the Mediterranean Sea; it was the main way in which silk was introduced to the West

sistrum a metal musical instrument in ancient Egypt that rattled when shaken; the plural form is sistra

society a community of people living in a particular area who have a shared culture, customs and laws

source anything that allows us to better understand the past; sources can be primary sources or secondary sources

standard-bearer a soldier chosen to carry the standard (a banner or flag showing the symbol or emblem of an army or people) into battle; in ancient times, a standard had a similar symbolic significance to a country's national flag

stratigraphy a method used to determine the approximate (or likely) age of remains from the past based on the strata (or layer) of earth or rock in which they were found

stupa a religious structure built to house Buddhist relics

T
timeline a sequence of related historical events shown in chronological order

time period a block of time in history

toga an item of clothing worn by the male citizens of ancient Rome

Torres Strait Islander peoples term used to describe the original inhabitants of the Torres Strait Islands

U
Underworld a place that the people of some ancient cultures (e.g. ancient Greeks) believed their souls went when they died

V
Valley of the Kings a deep, rocky valley close to the Nile where many Egyptian pharaohs were buried

value a quality of character that a society or community regards highly; for example, an important Australian value is freedom; a traditional Japanese value is honour

Via Appia (pronounced VEE•a AH•pya) a road built by the ancient Romans in the late 4th century bce; it was about 200 kilometres long and connected the city of Rome to other important cities; it became one of the most important roads of the Roman Empire

W
World Heritage Site a natural or built site, structure or natural feature deemed to be of international importance and worthy of special protection

Y
year a period of 365 days

Glossary: Economics and business

A

allocation and markets a key concept in economics and business: allocation is how we distribute scarce resources among producers; markets are the exchange of resources among buyers and sellers

C

competitive advantage when a business is able to produce better or cheaper products and outperform other businesses

consumer a person who buys things to use

E

economic performance and living standards a key concept in economics and business: economic performance is the evaluation of an economy by measuring it against a number of economic objectives; living standards is the level of wealth, material goods, comfort and life necessities available to people living in a geographical area

economics the study of how people and society use resources to satisfy their needs and wants

employee a person who works for a business

employer a business who employs workers to produce goods and services

employment having a job that returns an income for the work provided

export sending goods to another country

F

factors of production economic resources, which are divided into four categories: land, labour, capital and entrepreneurship

G

Gross Domestic Product (GDP) the total value of goods and services produced in a country over a year

goods and services all products sold or traded within an economy; goods are items (such as books and pens) and services are activities performed by others (such as cleaning and visits to the doctor)

I

import bringing in goods from another country

inflation the general increase in prices of goods and services

interdependence a key concept in economics and business: the way participants in an economy (such as individuals, businesses and governments) rely on each other to provide or trade the goods and services they cannot produce themselves

interest the amount of money a person who borrows money from a bank will have to pay the bank on top of the original amount borrowed

M

making choices a key concept in economics and business: the way consumers make choices about what they buy to satisfy their needs and wants

market the exchange of goods and services among buyers and sellers

N

needs things that we physically cannot survive without, including food, water and shelter

O

opportunity cost what we miss out on when making a choice; when more than two options are available, our opportunity cost is what we miss out on from the next best option

P

producer a person or business who makes and sells things for a profit

profit the amount of money a business earns after taking away the expenses that it has to pay

R

relative scarcity the problem that arises because our wants are unlimited, but the natural resources we use to fulfil them are limited

resources natural or made materials that can be used to produce goods and services; in economics, resources can be divided into four categories, known as the factors of production

S

scarcity a key concept in economics and business: the problem of people having unlimited wants and needs, but limited (or scarce) resources to support those needs and wants

social outcast someone who is not accepted or is ignored by the people around them

specialisation and trade a key concept in economics and business: specialisation is a method of production where a business or area focuses on the production of a limited scope of products or services in order to gain greater degrees of efficiency within the entire system of businesses or areas; trade is activity of buying, selling or exchanging goods and/or services between people and/or countries

strategy a plan for achieving goals

survey a series of questions that are asked to a group of people to gather information about what most people think

U

unemployment rate the percentage of people who are unemployed out of all the people who are able to work

W

wage the money paid to an employee in exchange for their labour

wants things that we desire but can survive without

Glossary: Civics and citizenship

A

Australian constitution a document that describes the rules, or laws, that govern Australia and defines its structure, and its citizens' rights

B

Bill a proposed law

C

citizenship a term used to describe the act or status of being a citizen of a society or country

civics the study of the rights and responsibilities of citizens within a society or country

crime an act that breaks an existing law, is harmful to an individual or society as a whole and is punishable by law

D

democracy a key concept in civics and citizenship: a system of government in which the people have the power to determine how they will be ruled, and elect a parliament to make and implement laws on their behalf

democratic values a key concept in civics and citizenship: attitudes, values or beliefs that represent the system of democracy

direct democracy a system of government where citizens meet together to make laws for their society

E

executive the branch of government responsible for approving laws and putting them into action; it is made up of the prime minister, ministers and governor-general

expert witness a witness who can provide important information about a case even though they did not see or hear it take place; expert witnesses are often called upon to apply their professional skills or expertise to a case

G

government the elected members of parliament who make decisions for a nation or state; in Australia, the government is made up of the party or coalition that has won a majority of seats in the lower house of parliament; the lower house of federal parliament is the House of Representatives and the lower house of the Victorian state parliament is the Legislative Assembly

J

judge a person who is appointed to apply laws to different cases and decide their outcome in a court of law

judiciary the branch of government responsible for upholding the rule of law; it is made up of the High Court and other federal courts

jury a group of people who are required to decide on a guilty or not guilty verdict for a case

justice a key concept in civics and citizenship: the quality of being just; the concept of justice is based upon many differing viewpoints and ultimately states that people and society should behave in a way that is fair, equal and balanced for all

L

laws formal rules that are designed to govern the way in which people behave and act so we can all live together in one peaceful and united society legal aid affordable legal representation to ensure that all people are able to be represented in a court of law

legal practitioner a person who specialises in knowledge of the law and courtroom arguments, and acts on a defendant's behalf in court

legislature the branch of government responsible for creating the law; it is made up of the two houses of parliament, the Senate and the House of Representatives

P

parliament the national or state law-making body that is made up of elected representatives in both the upper and lower houses with a head of state; in Australia, the national parliament is referred to as the Commonwealth or federal parliament

participation a key concept in civics and citizenship: the way in which individuals as good citizens take part in and make a contribution to society

R

representative democracy a system of government where citizens vote for representatives to make laws on their behalf

rights and responsibilities a key concept in civics and citizenship: the entitlements and obligations associated with citizenship, which are a cornerstone of modern democracies; citizens have both rights (such as freedom of speech, the right to vote) and responsibilities (such as the requirement to vote in elections, pay taxes, perform jury service)

W

Westminster system a key concept in civics and citizenship: the parliamentary system of Australia, which originates in the United Kingdom

witness a person who has seen or heard an event or dispute and is called upon to present their observations in court

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