civics+ citizenship history geography economics +business

Good Humanities

7

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Good Humanities 7

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Some content in *Good Humanities 7 Victoria 2nd edition* has been sourced and adapted from material contained in titles previously published by Matilda Education: *Good History NSW Stage 4*, ISBN 9780655093428 (first published in 2025), *Good Geography NSW Stage 4*, ISBN 9780655093473 (first published in 2025), and *Macmillan History NSW 7*, ISBN 9781420232295 (first published in 2016). The authors of these titles are: Samantha Frappell, Khya Brooks, Lorraine Chaffer, Peter van Noorden, Danielle O'Leary, Aleryk Fricker, Ben Lawless, Diana Millar, Luke Cashman, Matthew Leeds, Miriam Meehan, Nick Cummins, Richard Ford, Rose Searby and Joanna Clyne.

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Note about language

Please note that we use the terms 'Aboriginal and Torres Strait Islander' and 'First Nations' interchangeably. We acknowledge that there is no one term that is universally accepted and we use these terms with respect.

First published in 2025 by **Matilda Education Australia**, an imprint of Meanwhile Education Pty Ltd

Melbourne, Australia

Telephone: 1300 277 235

Email: customersupport@matildaed.com.au

Web: www.matildaeducation.com.au

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Publication data

Title: Good Humanities 7

ISBN: 9780655093923

NATIONAL LIBRARY OF AUSTRALIA

A catalogue record for this book is available from the National Library of Australia

Printed in Malaysia by Vivar Printing

May 2025

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First Nations readers are advised that the following chapter contains images of deceased persons.

How can I investigate early societies?

Historians and archaeologists have their own set of skills to help analyse and understand societies in the past. Historical skills are based around interpreting sources of evidence from the past, promoting debate and encouraging investigation.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	How historians and archaeologists investigate the past	Early human migration and development of societies	Continuity and change	Causes and consequences
5	I can analyse research methods and interpretations of historical events.	I can analyse how technology influenced early societies.	I can evaluate patterns of continuity and/or change.	I can analyse causes and consequences.
4	I can explain how a historical or archaeological investigation takes place.	I can compare the social and political organisation of different early societies.	I can explain patterns of continuity and/or change.	I can explain why something was caused or why it led to certain consequences.
3	I can describe how historians and archaeologists investigate the past.	I can describe the migration of early humans and features of early societies.	I can explain continuity and change.	I can explain how something was caused or its consequence.
2	I can recognise different methods of historical and archaeological inquiry.	I can recognise the features of early societies.	I can describe continuity and change.	I can describe causes and consequences.
1	I can identify historical and archaeological evidence.	I can identify how modern humans evolved, migrated and developed societies.	I can identify continuity and change.	I can identify a cause and a consequence.
	Knowledge and understanding			

Source 1: Parts of a female skull and a headband discovered by archaeologists in Germany in 2017. The 3200-year-old blue glass beads in the headband were traced to ancient Mesopotamia. The discovery helps to prove that there was trade between Germany and Mesopotamia during the Bronze Age.

I can evaluate historical perspectives.	I can evaluate historical significance.	I can evaluate the evidence supporting a historical interpretation.	I can explain change or causality from a timeline.	I can evaluate sources to determine their accuracy, usefulness and reliability.	5
I can compare perspectives.	I can explain why something is historically significant.	I can compare historical interpretations.	I can summarise the events on a timeline.	I can explain the historical context of a source.	4
I can explain a perspective.	I can explain something historically significant.	I can explain an interpretation of history.	I can follow timeline conventions.	I can apply historical knowledge to explain sources.	3
I can describe perspectives.	I can describe something historically significant.	I can describe an interpretation of history.	I can place events on a timeline chronologically.	I can describe a source.	2
I can identify the perspective of a person from the past.	I can identify something historically significant.	I can identify a historical debate.	I can read a timeline.	I can identify the origin of a source.	1
Perspectives	**Significance**	**Interpretations**	**Chronology**	**Sources**	Steps in skills progression

Historical concepts and skills

Why does history matter?

History is the study of our past. It is easy in our busy modern world to forget that every invention, every country and every idea has a history, which is a long chain of events that lead to right now. Studying history helps us to understand our world.

Thinking like a historian

Historians specialise in the study of history. Historians conduct investigations by asking questions and analysing sources. Sources can be written evidence from the past, such as letters, inscriptions and books. Sources can also be artworks, photographs, tools, toys, clothing and stories passed down from one generation to the next. Sources can even be human remains.

After considering a range of sources, historians interpret the evidence, make judgements and communicate their conclusions.

As a history student, your goal is not to memorise facts or dates; your goal is to think like a historian.

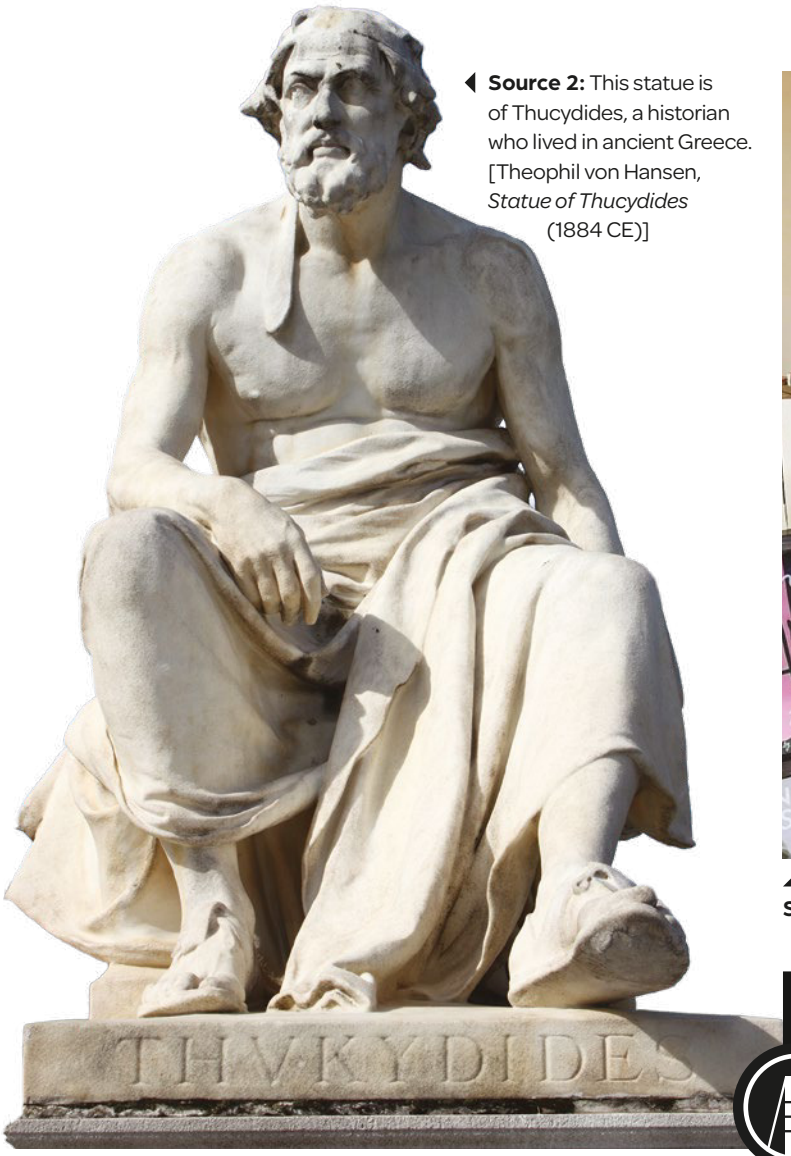
Three reasons why history matters

A historian's role has three parts: historians ask questions, examine sources and use evidence to answer questions or tell a story about the past.

1 Exploring history helps you to develop powerful skills

Many people think that history is just a set of facts about events that happened in the past. However, history is much more than facts. Studying history gives you access to a new set of skills. Think of these skills as your 'superpowers'. This year you will practise skills such as asking interesting questions, expressing opinions, thinking critically, processing information, analysing, researching and communicating. These skills will help you to succeed inside and outside your history classroom.

Source 1: Look closely at the tree in this photo. What can it tell you about events in the past? Think like a historian: Ask questions, examine sources and use evidence. Ask yourself, 'Why did humans remove a large panel of bark from this tree a long time ago? What might they have used it for?'.



Source 2: This statue is of Thucydides, a historian who lived in ancient Greece. [Theophil von Hansen, *Statue of Thucydides* (1884 CE)]

Source 3: Dr Clare Wright is a historian living in Australia today.

2 Exploring history is the closest you will get to time travel

Do you want to know how the Egyptian pyramids were built? Do you wonder why the Great Wall of China was constructed? Are you interested in lions fighting gladiators? Do you want to know how democracy started? Have you ever wondered what Australia looked like 60 000 years ago? The study of history allows you to take a trip back in time to discover fascinating people and events, and to understand the *how* and *why* of our world.

3 Exploring history helps form your identity

Studying history can help us to understand ourselves better. Human history is a long story about everything that people have ever done. There is a lot to take in from this story. We can learn what we should and should not do, and we can also learn about who we are.

Learning ladder H0.1

How historians and archaeologists investigate the past

1. Identify the role of a historian.
2. Describe the sources a historian might investigate.
3. Explain how studying history gives you new thinking skills.
4. Explain why history is important.

Sources

1. Sources 2 and 3: Identify these two historians.
2. Source 1: Describe the image in this source.
3. Sources 2 and 3: Explain how these sources demonstrate the value people place on studying history.
4. Source 2: This statue was created more than 2300 years after Thucydides lived. What does that tell you about people living in 1884 CE?

HOW TO Sources, page 191

H0.2

How do historians measure time?

The concept of time means different things to different cultures. In some cultures, time is considered circular – meaning that events happen in a series of repeating cycles. In other cultures, the concept of time is linear and continually changes (from past, to present, to future).

Timelines

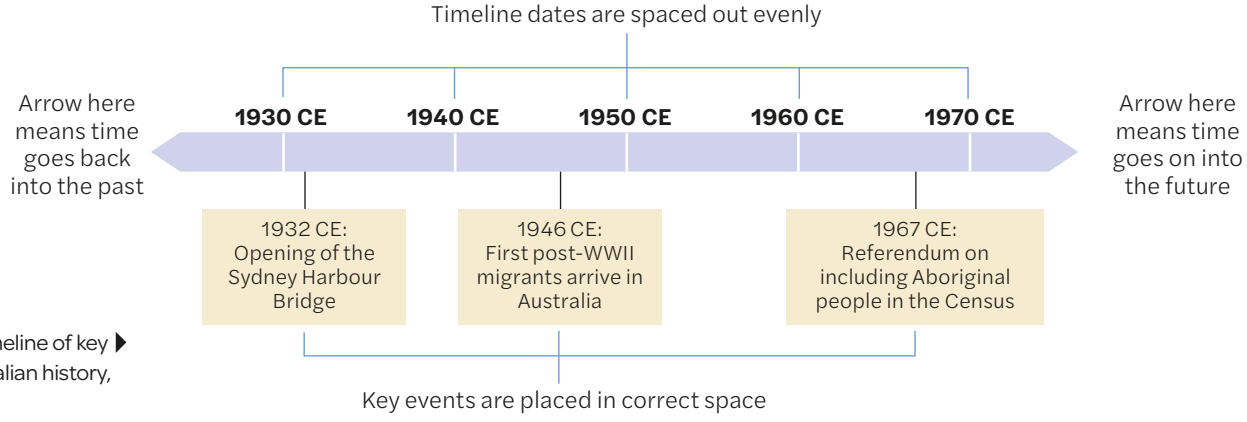
Historians often view time as linear. They use timelines to put historical events in order. This order is known as **chronological order**, from the Greek *kronos* (meaning time) and *logos* (meaning order).

Dating methods

All cultures that see time as linear have their own dating method. This dating method is usually based on an important event. For example, in Christian cultures, the birth of Jesus is the most important event in history. Therefore, Christians measure time from around the birth of Jesus. Events that happened before the birth of Jesus are identified as 'BC', meaning *before* the birth of *Christ,* while events that happened after the birth of Christ are identified as 'AD', meaning *anno Domini* (a Latin phrase meaning 'in the year of our Lord').

In Japan, dates are determined by the reign of the emperor. In the past, the emperor of Japan was believed to be a direct descendant of the goddess Amaterasu. The current Emperor Naruhito's reign is known as Reiwa. Naruhito ascended the throne in 2019 or 'Reiwa 1', so the year 2020 is called 'Reiwa 2', and so on.

Source 2: *The Nativity,* showing the birth of Jesus Christ. This image was created by Dunois Master in 1455 CE.



Source 1: A timeline of key events in Australian history, 1930–1970 CE

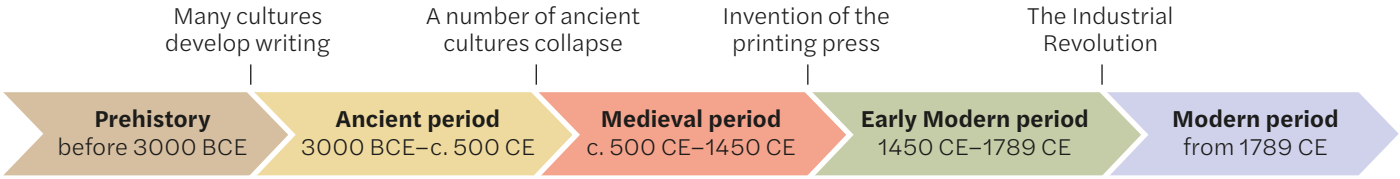
In Muslim cultures, time is measured from the year Muhammad left Mecca and went to Medina (a journey known as 'the Hijrah'). This occurred in the year 622, which is called 1 AH, meaning *anno Hegirae* (meaning 'in the year of the Hijrah').

Since different cultures use different dating methods, the world has adopted a common dating term: 'CE' for '**Common Era**' and 'BCE' for '**Before Common Era**'. As a reference point, CE is the same as AD and BCE is the same as BC. We will use 'CE' and 'BCE' throughout this text.

Periods

Historians who see time as linear also use periodisation. They break time up into distinct periods. These periods are known as Prehistory, Ancient, Medieval, Early Modern and Modern. The start of a new period is determined by a key event that causes dramatic changes to society.

▲ **Source 3:** Emperor Meiji (reigned 1867–1912 CE) shown with a range of other emperors. The background features important Japanese gods (*kami*), including the goddess Amaterasu. This painting was created by Toyohara Chikanobu in 1878 CE.



▲ **Source 4:** The five main historical periods

Learning ladder H0.2

How historians and archaeologists investigate the past

1. Source 1: List the key events shown on the timeline.
2. Describe the term 'chronology'.
3. Source 1: Explain how:
   - **a** the timeline dates are spaced on the timeline
   - **b** the key events are included on the timeline.
4. Source 1: Explain why there are arrows at each end of the timeline.
5. Create a timeline of key events in your life from your year of birth to the year you started high school. You might like to include events such as the year you started primary school, the year a brother or sister was born, or the year you moved house.

HOW TO Continuity and change, page 193

Continuity and change

1. **a** Sources 2 and 3: Identify the key events that form the basis of the Christian and Japanese dating systems.
   - **b** Calculate the current year in CE, AD and AH.
   - **c** Sources 2, 3 and 4: In which periods were Source 2 and Source 3 created?
2. Source 4: Describe the way historians have broken up history into time periods.
3. Source 4: Explain how historians have determined when one period ends and another begins.
4. Source 4: Explain why periodisation is an example of historical continuity and change.
5. How does different cultures' understanding of time demonstrate the concept of continuity and change?

H0.3

How did humans develop?

The universe is approximately 13.8 billion years old. Earth came into being about 4.5 billion years ago and life first emerged on our planet around 3.6 billion years ago. The first simple animals appeared about 600 million years ago and the first mammals 160 million years ago. The first primates appeared around 60 million years ago.

Evolution of *homo sapiens*

About 300 000 years ago, the species we belong to, ***homo sapiens***, evolved from earlier primate ancestors in Africa (Source 2). *Homo sapiens* means 'wise men' in Latin.

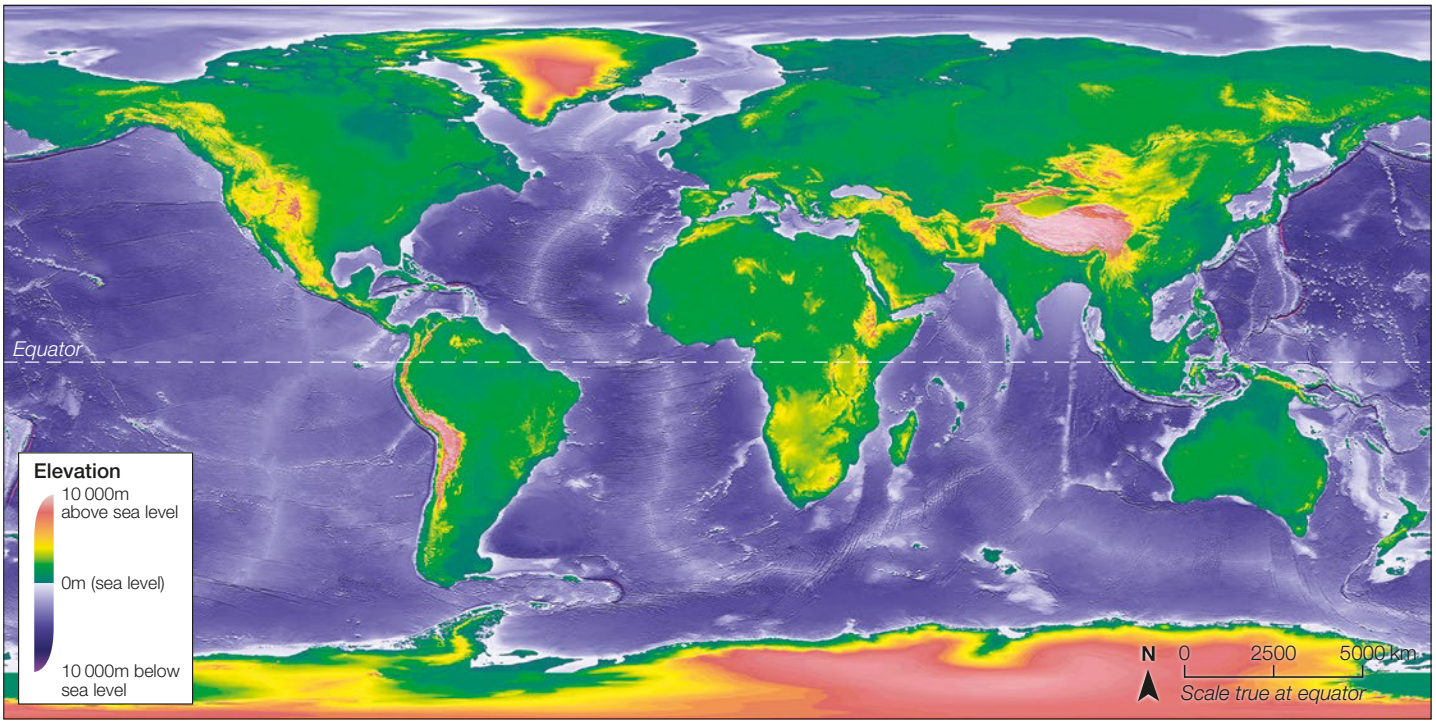
Migration of *homo sapiens*

Around 70 000 years ago, *homo sapiens* started migrating out of Africa to all the major landmasses of the Earth (Source 4). This happened in a few different waves: humans first travelled to the Middle East, then India, Asia and Australia, then to Europe and the Americas.

We do not know why our distant **ancestors** left Africa. Some scientists have suggested that humans left because there were too many people in the area, or because they were looking for food and resources.

The migration of early *homo sapiens* was possible because they lived during a period known as the **Ice Age** (the Pleistocene epoch: c. 2.5 million years ago to c. 12 000 years ago). During the Ice Age, much of Earth's water was frozen at the northern and southern tips of the planet, which meant the seas were more than 100 metres lower than they are today. Consequently, land masses that are today separated by water were connected (Source 1). When the Ice Age ended, the water melted and the seas rose to their current levels.

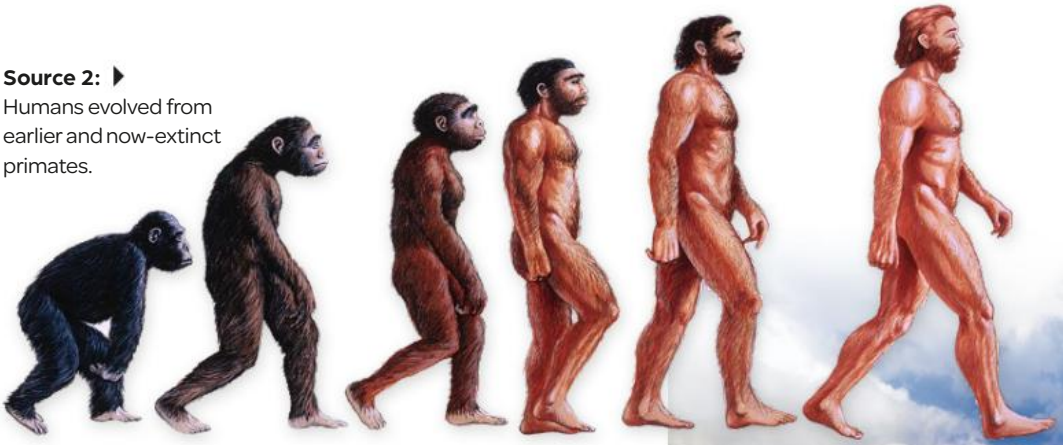
The world during the Ice Age



Source: NOAA

Source 1: During the Ice Age, sea levels were much lower and land bridges joined the Australian mainland to Tasmania and Papua New Guinea.

Source 2: ▶ Humans evolved from earlier and now-extinct primates.



Source 3: One of Europe's best-preserved Neolithic sites is Skara Brae on the Orkney Islands, off the coast of Scotland. ▼

The Stone Age

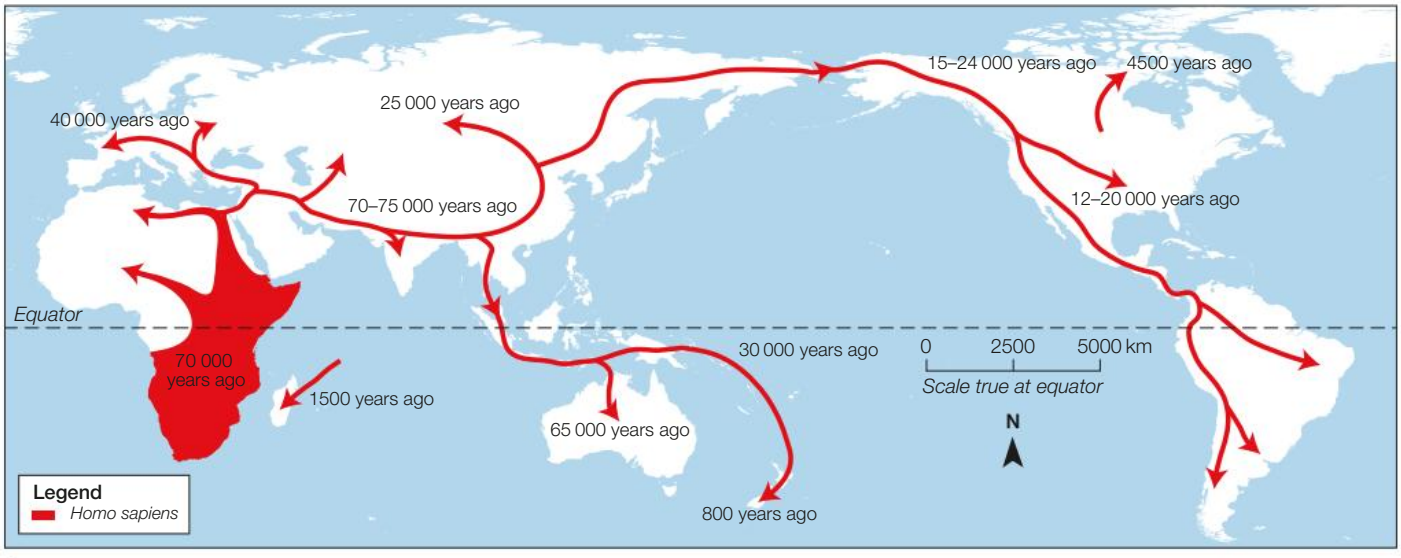
The **Stone Age** marks a significant stage of development for *homo sapiens*: they learnt how to make and use stone tools. The Stone Age can be divided into two periods of time: the **Palaeolithic** period (the 'Old Stone Age': c. 2.6 million years ago to c. 14 000 BCE) and the **Neolithic** period (the 'New Stone Age': c. 10 000 BCE to c. 2000 BCE).

The Neolithic Revolution

The Neolithic Revolution (also called the agricultural revolution) was when many humans began farming. The Neolithic Revolution led to huge changes in people's lives. Instead of being **nomads**, people lived in permanent settlements, such as that shown in Source 3. Rather than hunting animals and following herds from place to place, humans began keeping animals with them in settled areas, and instead of gathering wild plant foods, people grew plants from seeds they dropped into the soil.

Food could now be produced in smaller areas, and technology was developed to clear land and work the soils. Farming was more efficient than hunting and gathering, so more food was produced and populations grew.

The migration of *homo sapiens* from Africa to all the world's major landmasses



Source: Nord NordWest

▲ **Source 4:** Early human migration patterns

Early human societies

The shift to using **agriculture** to produce food meant that not everyone needed to spend most of their days hunting or gathering food. This allowed some people to specialise in developing other skills, including crafts, writing and systems of administration.

The main features of these early societies included:

- production of readable texts
- consistent living patterns, such as living in towns or cities, or moving to certain areas at certain times of the year
- specialised occupations
- laws
- religion
- stable food supply
- well-defined social structures and technology
- trade.

Not all humans followed the same path from hunting and gathering to farming. Some groups continued life as hunter-gatherers for thousands of years, while others developed farming and built complex societies. Different environments and needs led to different ways of living.

The river societies

The early societies sprang up in the valleys of major rivers. These rivers provided an abundant, constant supply of fresh water. Rivers also allowed people to travel, and the physical barrier of the water made it easier to protect territory from invaders.

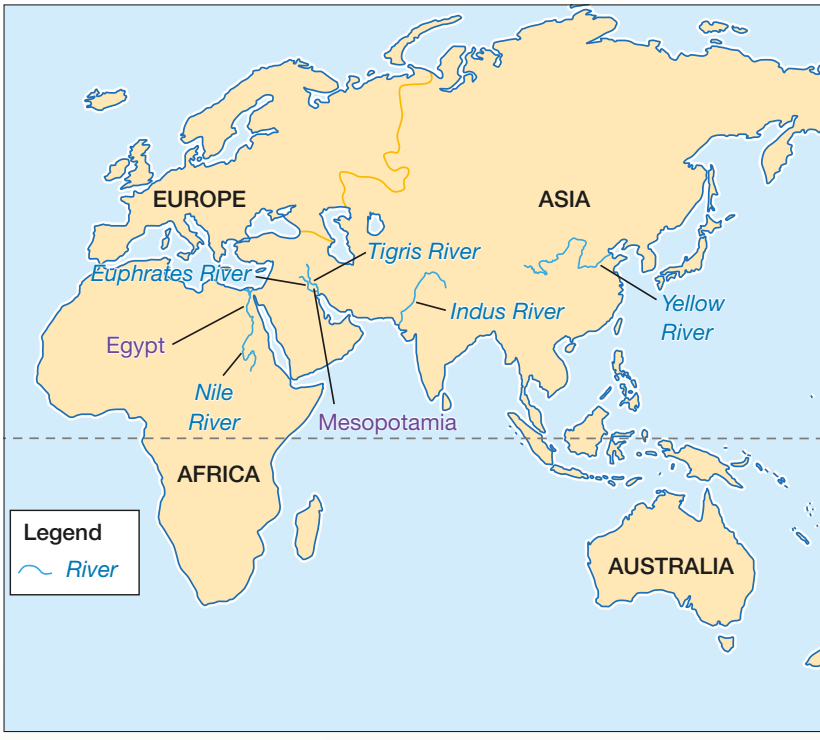
The Tigris and Euphrates Rivers

Humans started to settle in Mesopotamia around 10 000 BCE. Mesopotamia was situated in the fertile valleys between the Tigris and Euphrates Rivers (modern-day Iraq, Kuwait, Türkiye and Syria). These rivers flooded unpredictably and violently. The world's first complex society was founded in Sumer, in southern Mesopotamia, in c. 5500 BCE.

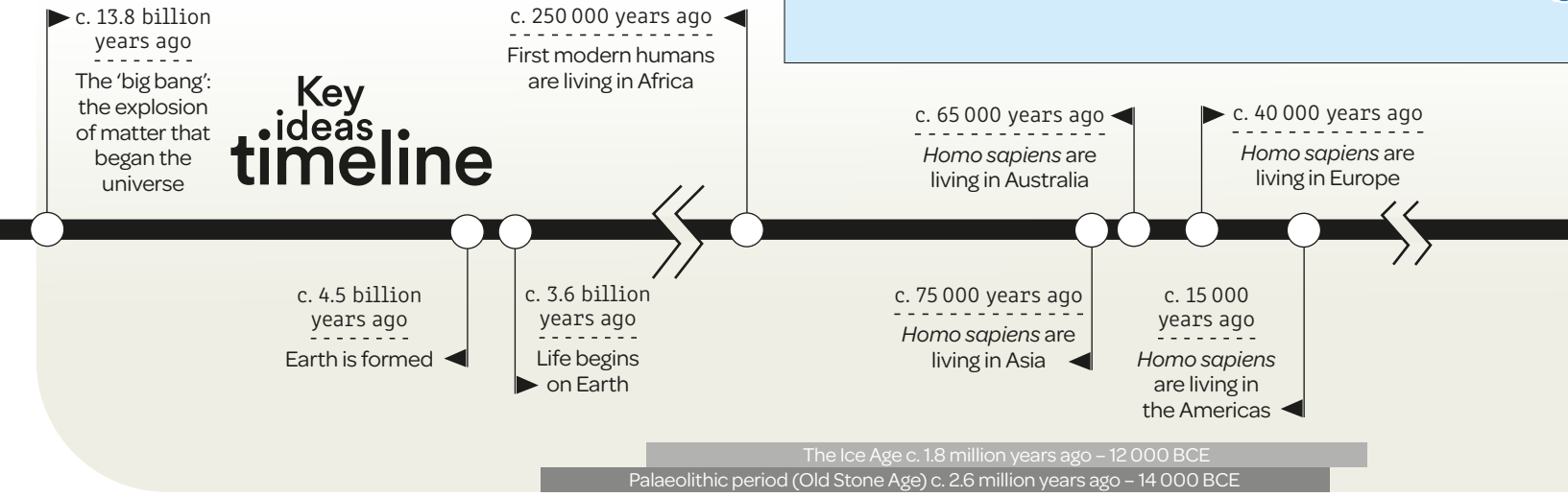
The Nile River

In about 6000 BCE in northern Africa, groups of hunter-gatherers began settling along the Nile River and growing crops. This river allowed people to easily travel the long distances between the separate kingdoms in the Upper and Lower Nile. These kingdoms were unified by about 3150 BCE, which led to the development of an Egyptian society.

A modern-day world map showing the rivers along which early societies were located



Source 5: A timeline from the beginning of the universe to the end of the ancient world. Historians use 'c.' meaning 'circa' or 'about' when they don't have an exact date.



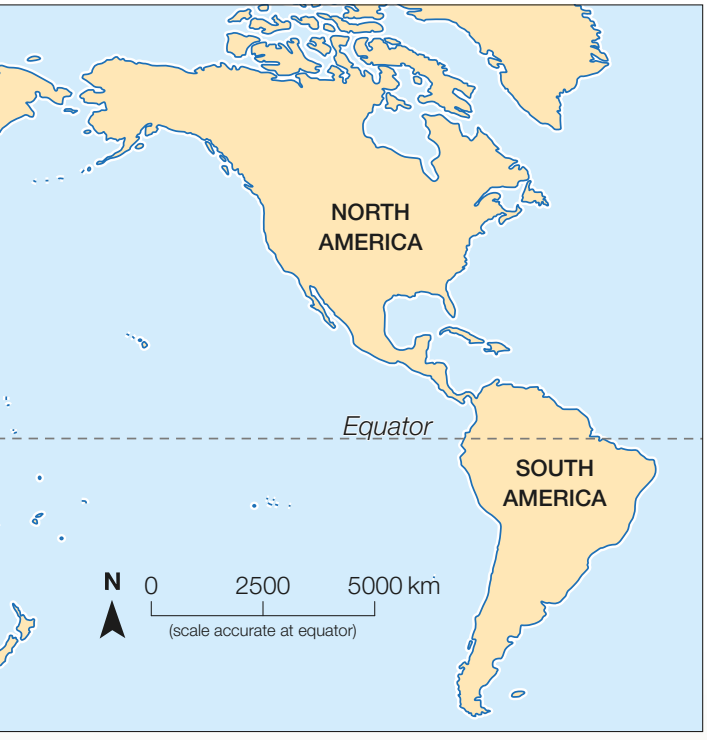
The Indus River

Another society developed along the Indus River in modern-day north-west India and Pakistan. There is evidence of farming in this area from around 4000 BCE. By about 2600 BCE, many towns and cities had been established. The Indus River society was at its peak from about 2500 BCE to 2000 BCE.

The Yellow River (Huang He)

The Yellow River civilisation is considered to be the cradle of Chinese culture. Some archaeologists suggest the area was settled by 9500 BCE. By about 2500 BCE, tribes had united to solve common problems such as flooding and irrigation.

Source 6: Sites of early societies



Source: Matilda Education Australia

Learning ladder H0.3

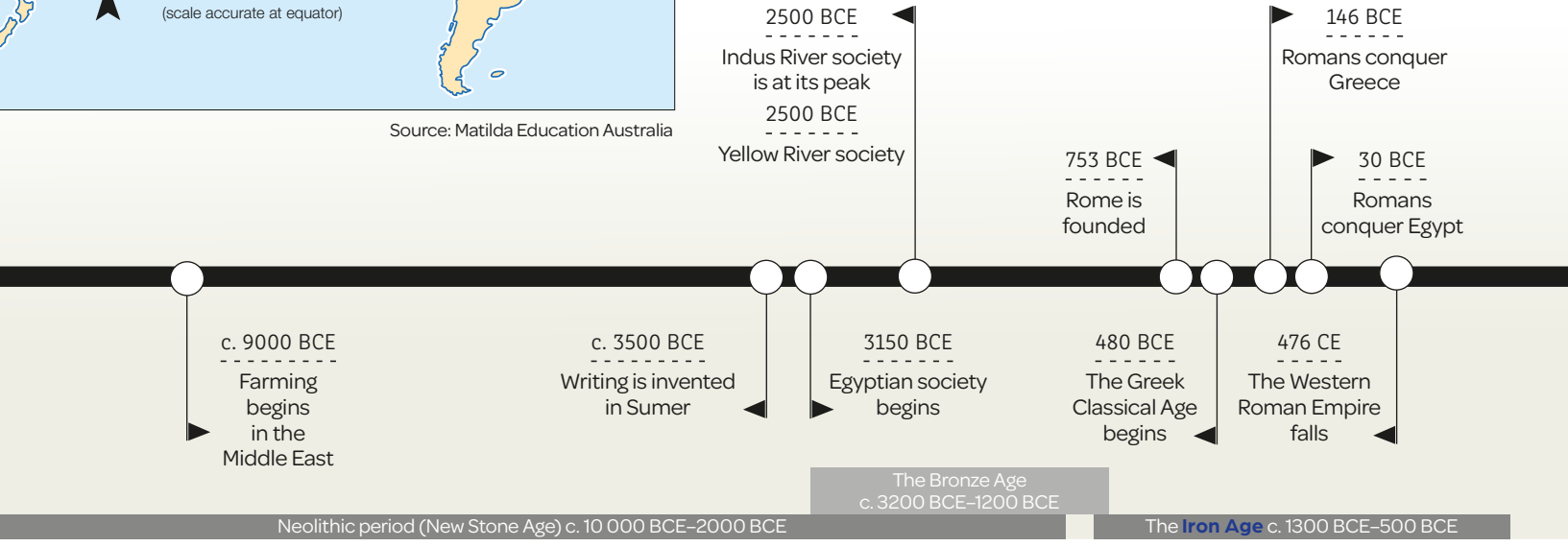
Early human migration and development of societies

1. Source 6: Identify the locations of the river societies.
2. Source 2: Describe the physical changes you can see as humans evolved.
3. Source 4: Using the source, explain how humans travelled from Africa to Australia.
4. Sources 1 and 4: Using the sources and your knowledge, explain why historians know when humans reached Australia.
5. Evaluate the benefits and disadvantages of settling near river systems for humans.

Chronology

1. When did humans first exist on Earth?
2. Place these events into chronological order, from the oldest to the most recent:
   - 70 000 years ago: humans reach India
   - 40 000 years ago: humans reach Europe
   - 20 000 years ago: humans reach North America
   - 45 000 years ago: humans reach China
   - 65 000 years ago: humans reach Australia.
3. Create a timeline using the dates from Question 2.
4. Source 5: Explain how the timeline demonstrates the concept of change.

HOW TO Chronology, page 188



H0.4

Who were the first people to live on the Australian continent?

It is thought that the first people to live on the Australian continent migrated from South-East Asia during the Ice Age.

Out of Africa

DNA evidence shows that First Nations people living today are descendants of the people who left Africa between 50 000 and 70 000 years ago and migrated to Australia in search of new hunting grounds and places to live (Source 1). This means that First Nations Peoples have the oldest continuous cultures on Earth.

Arriving in Australia

It is thought that humans crossed from South-East Asia to Australia during the Ice Age. Sahul was a mega-continent that connected Australia to New Guinea and Tasmania. As sea levels were about 120 metres below their current levels, it would have been possible to walk most of the way.

Creation stories

Some First Nations people believe that the world was created during the Dreaming, and that their ancestors have been here since the beginning of time.

First Nations stories, songs, dances and art explain that the Earth's surface was once nothing but mud. The landscape changed when Ancestor Spirits formed the mud into mountains, rivers, islands and other landforms. The Ancestor Spirits also gave life to humans, plants and animals.

First Nations technologies

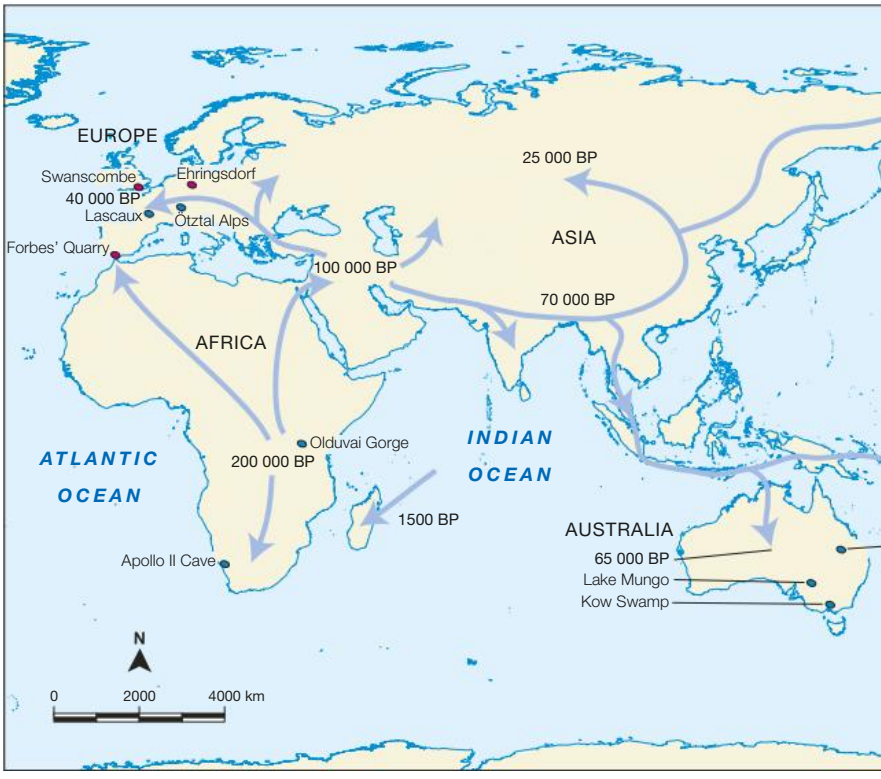
In Kakadu in 2017 CE, archaeologists found more than 10 000 **artefacts** in a layer of soil that has been dated to at least 65 000 years ago.

The archaeological dig took place on the Mirarr people's land. It was led by Associate Professor Chris Clarkson from the University of Queensland. In the top layer of soil, archaeologists found shells, bones and spear heads. Further down, they found axes and different grindstones.

'We have technologies developing here that we don't see developed anywhere else in the world for another 30 000 years – even 50 000 years ago in the case of Europe. They didn't have axes until 10 000 years ago,' Clarkson said.

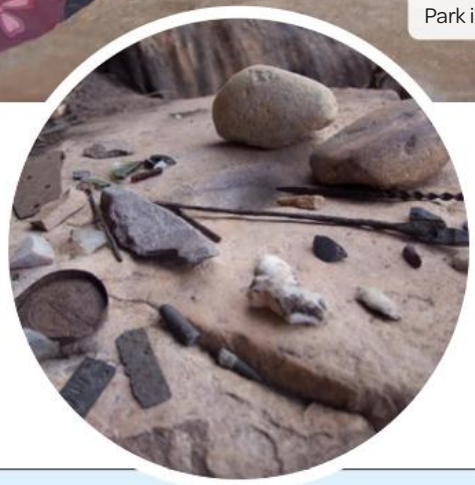
To reach Australia, the first peoples had to cross over 90 kilometres of ocean, which suggests they had reliable seagoing craft and astronomical navigation skills.

A map of the world showing ancient human migration routes



Source 1: World map ▶ showing migration routes of ancient humans

Source 2: Scientist Dr Elspeth Hayes (left) with May Nango (right) and Mark Djandjomerr (centre). May is a Traditional Custodian of an archaeological site on Mirarr land, located in the Kakadu National Park in the Northern Territory.



Source 3: An axe-grinding stone found in Kakadu National Park in 2017 is the oldest confirmed evidence of the occupation of Australia 65 000 years ago. The tool-making technology developed by early Australians was the most advanced in the world.

Source: Matilda Education Australia

Learning ladder H0.4

Early human migration and development of societies

1. Identify the evidence that shows the link between First Nations Peoples and the first humans who left Africa.
2. Why is it believed that people crossed from Asia to Australia during the Ice Age?
3. What archaeological evidence confirms the date when people arrived in Australia?
4. Source 3: What does this archaeological evidence demonstrate about the advanced nature of the technology used by these early humans?

Chronology

1. Source 1: Use the map to determine whether people arrived in Australia before or after people arrived in North America.
2. Find the dates of these events in the text and list them in order, from the oldest to the most recent:
   - Ancient migration to Australian continent stops
   - First people arrive on the Australian continent
   - People leave Africa
   - End of the Ice Age.
3. Use the events in Question 2 to create a timeline.
4. Source 1: Why do you think humans arrived in Australia before North America, South America or New Zealand?

HOW TO Chronology, page 188

How do we know about the ancient past?

Modern humans evolved about 300 000 years ago in Africa. Sometime around 70 000 years ago, they began to migrate to other parts of the world where they established complex societies. These ancient societies were located in places such as Mesopotamia, Australia, Egypt, and in the valleys of the Yellow River (China) and the Indus River (India).

Evidence for the establishment of ancient societies

How do we know our ancient ancestors lived all over the world? How can we trace their movements? Luckily for us, these modern humans left behind clues as they moved from place to place. These clues come in different forms. Historians and archaeologists piece together these clues to gain a picture of what life was like for our ancient ancestors.

All the sources discussed in this section are primary sources, which are sources made during the historical time you are learning about.

Human remains

The physical remains of modern humans can give us lots of useful information. By carbon dating the bones, we can tell roughly what era a skeleton comes from. Archaeologists can also determine the sex of the skeleton. They can also figure out approximately how old the person was when they died by examining the teeth. Some skeletons show evidence of arthritis, a condition that causes swollen, painful joints. This suggests that life for our ancestors was hard. Occasionally we can tell how someone died.

Source 1: This prehistoric human skeleton was found surrounded by jewellery. Skeletons can tell us the age and sex of the person and sometimes give us clues as to how they died.

Some skeletons have been found with an arrowhead lodged in their rib cage or vertebrae (the small bones of the spine). We can also use human remains to determine where a person lived and what they ate.

Artefacts

An **artefact** is any object made by humans (that is, not a natural object). Humans are creative and inventive and have left behind many artefacts, including arrowheads, axes, spear points and spear-throwers. Archaeologists have found beautiful jewellery made from stone, bone and obsidian (a type of dark, glass-like volcanic rock), and needles made from ivory, which were likely used to sew together animal hides to make clothing.

An extraordinary advance occurred around 9500 BCE when humans discovered copper. **Prehistoric** people in south-east Europe and west Asia learnt how to beat this metal into jewellery, tools and weapons. By about 4000 BCE, people in Mesopotamia had learnt how to extract pure copper from ores (rocks or minerals that hold metals) by applying heat to melt the metal (this is called metallurgy or smelting). The melted copper was then poured into stone or clay moulds to make knives and axes. Eventually, metal smiths worked out how to combine copper with tin to make bronze, which is stronger than pure copper. Later, people extracted iron from its ore and used it to make tools, weapons and armour.

Source 2: These ground-edge axes with handles are similar to the world's oldest ground-edge axe (c. 49 000–44 000 years old), which was found in the Winjana Gorge in the Kimberley region of Western Australia in 2014. Stone was fashioned into knifes, axes, spearheads, chisels and saws by First Nations peoples. Stone tools were used for hunting, grinding seeds, and for making ochre, clothes, nets and baskets.

People in other societies also began writing shortly after the Mesopotamians. In the valley of the Indus River (in modern-day Pakistan and north India), Harappa script appeared around 3300 BCE and hieroglyphs emerged in Egypt circa 3200 BCE.

The Canaan people (in the Middle East) had developed their script by around 1900 BCE. Canaanite script was adapted by the Phoenicians in 1700 BCE, and in turn was adapted by the ancient Greeks in 800 BCE. Ancient Romans used elements of Greek scripts to form the Latin script that we use in Australia today.

Writing

In some ancient societies, people developed writing because they needed to record agricultural produce and trade activity. Archaeologists believe that writing first appeared in Mesopotamia in 3500 BCE. By 3000 BCE, the people of Sumer in southern Mesopotamia were using triangular-shaped writing tools to press symbols into soft clay to record numbers. Before long, pictures were drawn beside the numbers to show what was being counted. Around three centuries later, symbols that represented language sounds and syllables emerged. These were written with a sharpened writing stick called a stylus. This writing is known as 'cuneiform'.

Source 3: Early clay tablets like this one were used to record agricultural produce in Mesopotamia, c. 3100–2900 BCE.

Artwork

Some of the most remarkable achievements of prehistoric people were artistic. Like tools and jewellery, artwork was created with many different materials.

Small statues and elaborate carvings are common forms of prehistoric artwork. Some statues made by prehistoric humans are more than 35 000 years old. Venus figures (Source 4), named after the Roman goddess of love and beauty, are some of the oldest figurines that have been found. The shape of the bodies – many look like heavily pregnant women – suggest that the statues may have been used in religious ceremonies relating to health and fertility.

Rock art

Rock art is the oldest surviving art form. This type of art consists of paintings, drawings, engravings, stencils and carvings in rock shelters and caves. This art often depicts humans and animals.

Rock art is an integral part of First Nations cultures and gives us a glimpse into the lives of people who lived on the Australian continent thousands of years ago. Paints were made from natural materials such as charcoal and red ochre. These were mixed with water and blown onto cave walls by mouth or applied with sticks or fingers.

Some of the most famous examples of rock art are in the Kimberley in north-west Australia (Source 5). Drawings of animals found in the region are believed to be up to 40 000 years old. At Raft Point in the Kimberley, cloud and rain spirits called Wandjina have been painted on the walls of sandstone caves (Source 5). The Mowanjum people believe that the Wandjina bring the annual rains and storms, which is why this cave art has been continually refreshed over thousands of years, to ensure the spirits bring rain to the region. The original depictions of the Wandjina at Raft Point are thought to be 40 000 years old.

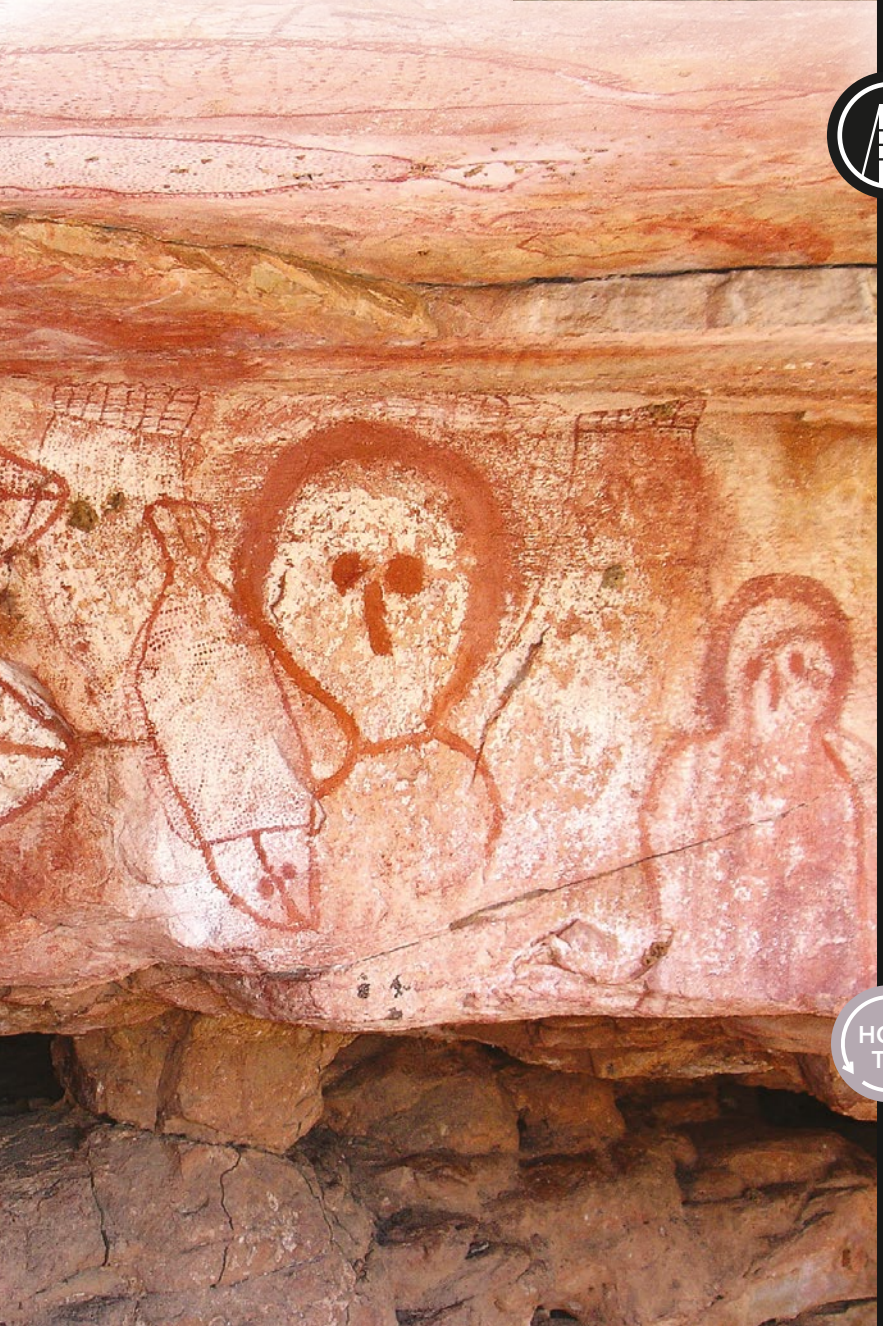
Oral histories

Another important historical source is oral history, which is stories that are passed down from one generation to the next. Scientists and geographers have shown that the oral histories of the Gadigal people – which have been passed down for nearly 10 000 years – accurately describe features in Sydney Harbour that date to the end of the Ice Age.

Source 4: The Woman of Willendorf (formerly known as the Venus of Willendorf) was carved from limestone in about 22 000–24 000 BCE. The statuette stands about 11 centimetres high and was found in Willendorf, Austria, in 1908.

Source 5: This rock art is in sandstone caves at Raft Point in the Kimberley in Western Australia.

Source 6: This is a modern reconstruction of a prehistoric hut made from mammoth bones. The sites of temporary camps are another form of evidence that give us information about our ancient ancestors. Early humans probably travelled in small groups of about 25 to 30 closely related individuals. As hunter-gatherers, these groups travelled widely in search of food.



Learning ladder H0.5

How historians and archaeologists investigate the past

1. Sources 1–6: Identify the type of evidence in each of the sources.
2. Source 1: What can human remains tell us about the lives of ancient people?
3. What do artefacts tell us about the resources used by ancient people?
4. Source 4: Explain what some historians think is the reason statues like this one were created. What additional evidence might they use to confirm this idea?

Sources

1. Source 2: Identify the origin of this source.
2. Source 5: Describe this source.
3. Sources 2 and 6: Explain what useful information each source provides.
4. Source 4: Explain why statues like this one were created. What additional evidence might you use to confirm this idea?

HOW TO Sources, page 191

How do historians study the past?

Historians study a wide range of sources such as books, reports, letters, diaries, inscriptions, artworks and artefacts to to help them draw conclusions about the past.

The work of historians

The word 'history' comes from the Greek word *historia*, which means 'knowledge acquired by investigation'. Historians conduct investigations by asking questions, researching, analysing sources, interpreting evidence, making judgements and communicating their conclusions.

Historians and archaeologists rely on finding and analysing sources to investigate the past. A historian is likely to examine hundreds of sources when they are investigating one aspect of history. The sources historians find – including written sources, artworks, artefacts, oral histories and human remains – are used to reach a conclusion.

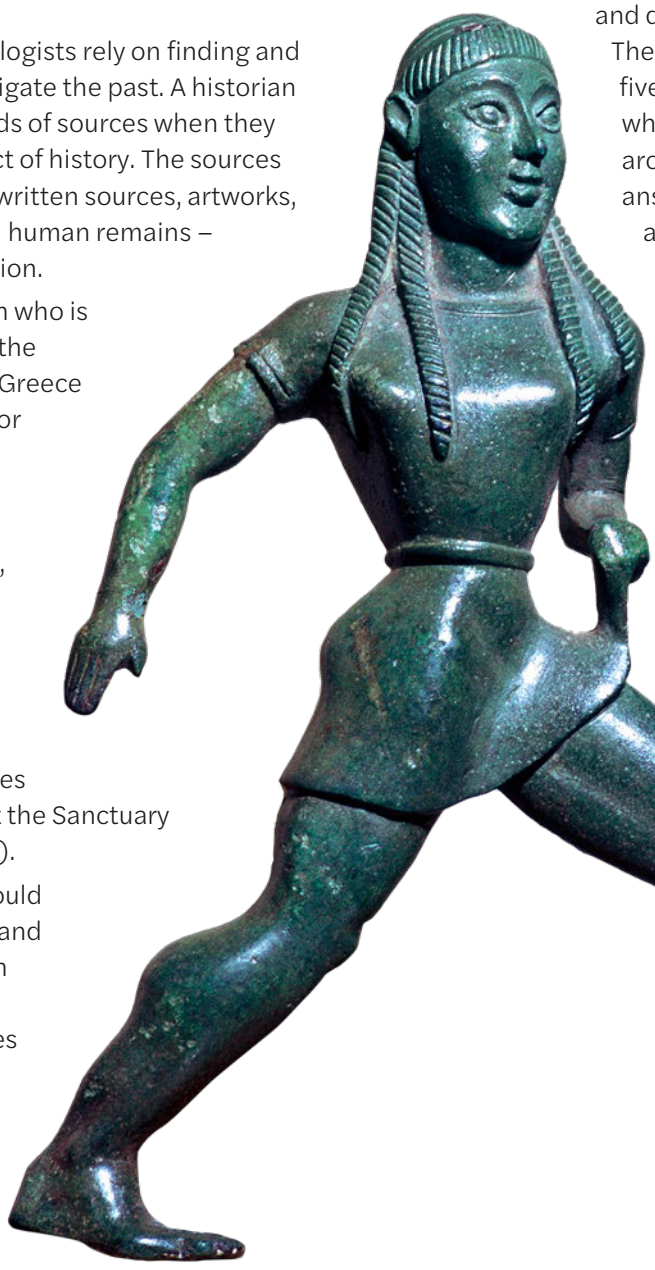
For example, a historian who is investigating what clothes the Spartan women of ancient Greece wore may start by looking for written sources. There are some descriptions, such as that by the ancient Greek writer Euripides (Source 2), but these have only a small amount of useful information. The historian could then examine any available archaeological sources, such as the figurines of Spartan women found at the Sanctuary of Artemis Orthia (Source 1).

Finally, the historian would read what other historians and archaeologists have written about women in Sparta (Source 3). All these sources inform the historian's conclusions about the clothes worn by the women of ancient Sparta.

Analysing artefacts

Artefacts (objects made by humans) can provide valuable information about the past, as long as you know what questions to ask about the artefacts.

When examining an artefact, asking yourself certain questions will help you to identify and describe the origin of the source. These questions are known as the five Ws: who, what, when, where and why. It is common for historians and archaeologists to have different answers to questions about the same artefact. These disagreements are different historical interpretations of the past.



Source 1: This bronze figurine is thought to depict a Spartan girl (c. 520–500 BCE).

Analysing written sources

Written sources are any materials or objects that have been written on. Ancient writing has been found on papyrus, clay tablets, parchment (skins of cattle, sheep or goats), wooden tablets and stone.

A written source can be either a **primary source** or a **secondary source**. Primary sources are first-hand accounts of a topic that were created during the time that is being investigated. For example, Source 2 is a primary source because it was written during the period in which Spartan girls lived.

Secondary sources are those that were produced after the time period being investigated by those who did not witness the event themselves. For example, Source 3 was written about Spartan women's clothing in 1992. Secondary sources use and analyse primary sources to draw conclusions about a particular period of history.

No Spartan girl could grow up modest, even if she wanted to. You never find them staying at home; no, they go out with bare thighs and loose clothes, to wrestle and run races along with the young men.

Source 2: A primary source: An extract from *Andromache*, a play written by Euripides, an ancient Greek playwright, c. 428 BCE

Spartan women wore the Dorian *peplos*, with slit skirts, permitting freedom of movement, while Athenian women wore the confining, long Ionian *chiton* ...

Source 3: A secondary source: An extract from *The Concept of Work: Ancient, Medieval and Modern* by Herbert A Applebaum, written in 1992

Source 4: Decorations on an ancient Greek vase showing Athenian women going about their daily activities

Studying the ancient past

The ancient past is an incredible period of human history that began with the migration of modern humans from Africa around 60 000 BCE and ended with the fall of the Western Roman Empire in 476 CE.

Historians who investigate the ancient past face the problem of a lack of sources. Most of the remains of the ancient past have been destroyed or lost. Others are badly damaged. Writing did not appear until c. 3500 BCE, so there are no written records for much of this period. The written sources that were produced during this era were created by wealthy men who were the elite members of society. Very few people learned how to read or write. As a result, little was written about the lives of ordinary people.

Learning ladder H0.6

How historians and archaeologists investigate the past

1. Identify two different types of evidence used by historians.
2. Identify which of the following are primary sources and which are secondary sources:
   - history textbook
   - photograph
   - coin
   - toy
   - history documentary
   - shoe
   - tomb painting
   - webpage article
   - marble statue
   - stone axe.
3. Describe how a historian investigates the past.
4. Source 2: Analyse the author's opinion of Spartan girls.

Sources

1. Source 2: Identify the origin of this source.
2. Source 3: Is this a primary or secondary source? Why?
3. Source 1: Describe the garment worn by the statue.
4. Sources 1–4: Using the sources and your knowledge, explain what the differences in women's clothing tell us about ancient Sparta and Athens.

HOW TO

Sources, page 191

How do archaeologists study the past?

Archaeologists conduct extensive historical research to locate possible sites of human habitation. They then carefully excavate these sites, ensuring they do not damage any artefacts.

Finding archaeological sites

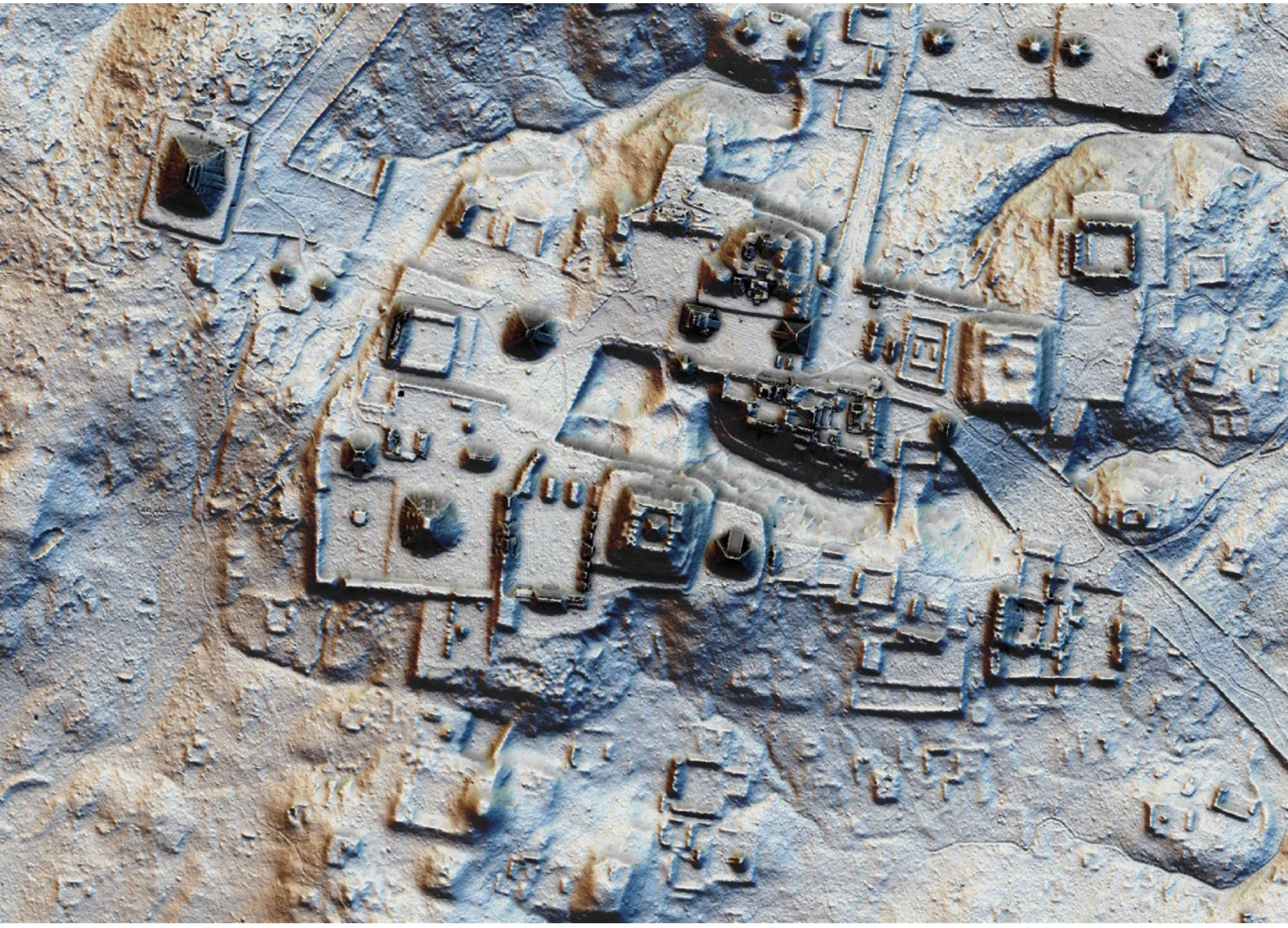
Archaeological sites are places where artefacts are found. These sites can be discovered in many ways, including by being revealed over time by the wind, rain or other natural forces. For example, in the Willandra Lakes Region in New South Wales, erosion caused by the wind exposed hundreds of human footprints from around 18 000 BCE.

Archaeological sites can also be discovered by chance or by human activities such as digging foundations, building roads and dams, ploughing fields and even fishing. For example, in 2006 CE, work on a gas pipeline in Wales had to be stopped when a 3400-year-old canoe was found. Much earlier, in 1599 CE, the ancient Roman city of Pompeii was uncovered by workers building an underground drain.

Some archaeological sites need little effort to discover because they never fully disappeared, such as Stonehenge in England, Angkor Wat in Cambodia, the Pyramid of Khufu in Egypt and the Colosseum in Italy. Usually a great deal of expertise, time and effort goes into discovering an archaeological site.

One of the methods used by archaeologists to discover archaeological sites is to use the information in ancient written sources. The German archaeologist Heinrich Schliemann read Homer's epic poem 'The Iliad', which is set in Troy, and used Homer's descriptions to locate the city. At the time, many people believed Troy was a mythical city. For three years Schliemann's team dug until he was able to prove that he had found Troy, modern-day Hisarlik in Türkiye. Archaeologists have also used the Bible to locate ancient towns and cities.

Source 1: These are some of the remains of the ancient Roman city of Pompeii, which was blanketed in volcanic ash when nearby Mount Vesuvius (in the background) erupted in 79 CE.



Source 2: This is a LIDAR image of an ancient Mayan 'megalopolis' in Guatemala; the city lies buried beneath dense jungle foliage.

At the beginning of the 20th century, archaeologists began to use aerial photography to help them locate archaeological sites. These bird's-eye view photographs reveal differences in the height of the land, vegetation or crop marks, building foundations and ancient roads.

Using new technology to find archaeological sites

Archaeologists now use advanced technology called LIDAR (light detection and ranging) to uncover hidden cities in the jungles of Asia and Central America. LIDAR images are three-dimensional representations of an area. These images are created by aiming beams of laser light at an area and calculating how long it takes for the beams to hit a hard object and reflect back to the scanner. Millions of these measurements are used to create one three-dimensional image. Source 2 is a LIDAR image of an ancient Mayan city that lies buried under deep jungle foliage.

In the Valley of the Kings in Egypt, tombs have been found using ground-penetrating radar. Machines called magnetometers detect the magnetic properties of materials below the ground, while resistivity meters identify structures such as walls or pits below the ground.

Excavating a site

Once archaeologists have found where a site is located, they need to excavate it. Ideally, archaeologists carefully and thoroughly excavate sites to ensure nothing is damaged or missed. However, there can be pressure on archaeologists to quickly remove artefacts from a site so that development can proceed. This was the case in the lead-up to the 2004 Olympic and Paralympic Games in Athens. Teams of archaeologists worked around the clock to excavate sites before construction on new sports venues and highways went ahead.

The excavation team

Excavating an archaeological site is a team effort. The person in charge of the dig is usually an academic or someone employed by the government. They coordinate the members of the team, who can include people responsible for organising funding and sourcing equipment (which might include large earth-moving machinery), photographers, illustrators, surveyors, cartographers (map-makers), IT staff, people who measure and record artefacts, laboratory specialists and, of course, people to do the actual digging. Often, the digging is done by students or members of the public who have volunteered to work on the site. If no volunteers are available, then labourers are hired.

Excavation techniques

Archaeologists use different techniques to excavate sites; the technique chosen depends on the characteristics of the site and what archaeologists hope to learn from it.

Regardless of which technique is chosen, archaeologists usually start excavating a site by using large earth-moving equipment to remove grass, foliage and topsoil. Next, they dig through several layers of dirt that have built up over time. The diggers carefully work their way through these layers using hand-tools such as spades (not heavy machinery) and placing the soil into wheelbarrows and buckets.

Archaeologists call the layers of dirt (or rock or other matter) **strata**. Each layer can contain artefacts (for example, coins and broken pottery) and natural remains (from plants and animals).

Source 3: Excavating an archaeological site involves a team of people working together to survey the site, carefully dig up artefacts, and record and label findings.

Source 4: Archaeology students excavate part of the ancient city of Heraclea Lyncestis; this site is in the city of Bitola in North Macedonia.

Excavation can either focus on a number of strata – a cross-section of the site over a long time – or on just one layer of the site.

If archaeologists are interested in a cross-section, they use an excavation technique known as the box grid system. This method involves dividing the surface of the site into a grid of 'boxes', which are then dug out. The boxes are separated by 'walls' of earth that are left as a record of the strata. Each box is dug out one layer at a time. Each layer is carefully examined in case it contains artefacts.

The keyhole excavation technique involves digging trenches at specific points on a site. It gives archaeologists a general idea of what artefacts they might find if they were to excavate the entire site. While this technique does not let archaeologists examine the full site, it is less costly and less destructive than digging up the whole area.

A third excavation technique is open-area excavation. This involves digging up a large horizontal area one layer at a time. Open-area excavation gives archaeologists a good understanding of the entire site and is best used on sites where there has been only one occupant.

Learning ladder H0.7

How historians and archaeologists investigate the past

1. Identify three ways that archaeological sites can be discovered.
2. Source 2: How do archaeologists use LIDAR technology?
3. Describe how archaeologists use strata to investigate the past.
4. Explain the advantages of the keyhole excavation technique.
5. Source 2: Analyse this LIDAR image, which has been taken through thick jungle. Explain what can be seen using this technology and how it can be used for locating archaeological sites.

Sources

1. Source 3: The key tasks involved in excavating an archaeological site are listed below (a–h). Match each task with a number from the source.
   - **a** Photographing the site
   - **b** Digging new trenches
   - **c** Sifting dirt through a sieve to locate small objects
   - **d** Washing artefacts found on the site
   - **e** Drawing artefacts to scale
   - **f** Removing soil from objects that have been dug up
   - **g** Digging up artefacts
   - **h** Photographing artefacts
   - **i** Recording a video of the excavation
2. Source 2: Describe the layout of this ancient city.
3. Source 4: Describe the features of this area of Heraclea Lyncestis. What type of evidence do you think they might find here?
4. Evaluate the reliability of archaeological evidence compared with written evidence.

HOW TO

Sources, page 191

How do we know the age of an ancient artefact?

Archaeologists use different methods to establish the ages of objects, artefacts and sites. Some of these methods have been used since the study of archaeology began, but others are more recent and use a range of scientific techniques.

Working out the exact age of an object is easy if the date is marked on the item, which is often the case with coins and inscriptions. However, for many objects, archaeologists use relative and absolute dating methods to establish the age of an item.

Relative dating

Relative dating establishes whether an artefact is older or younger than other artefacts that have been found. Archaeologists use **stratigraphy** to date artefacts. Different artefacts are found in different strata (or layers) of rock and soil. By dating a stratum (a layer), archaeologists can assume that the artefacts found in that stratum are all the same age.

However, using stratigraphy to date artefacts can be unreliable, as the movement of earth over time can mean that objects move to layers in which they were not originally located.

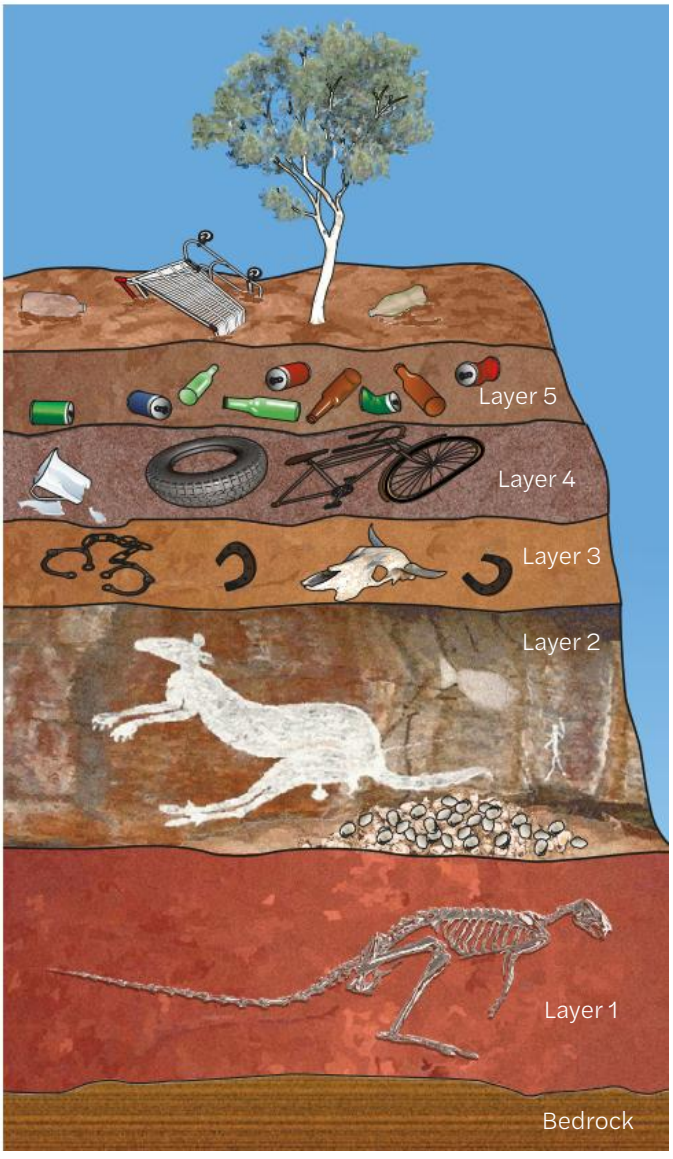
Another form of relative dating relies on the principles of **typology**. This is where artefacts are put into chronological order (organised from the oldest to the most recent object) based on features such as decoration, construction material and shape.

Absolute dating

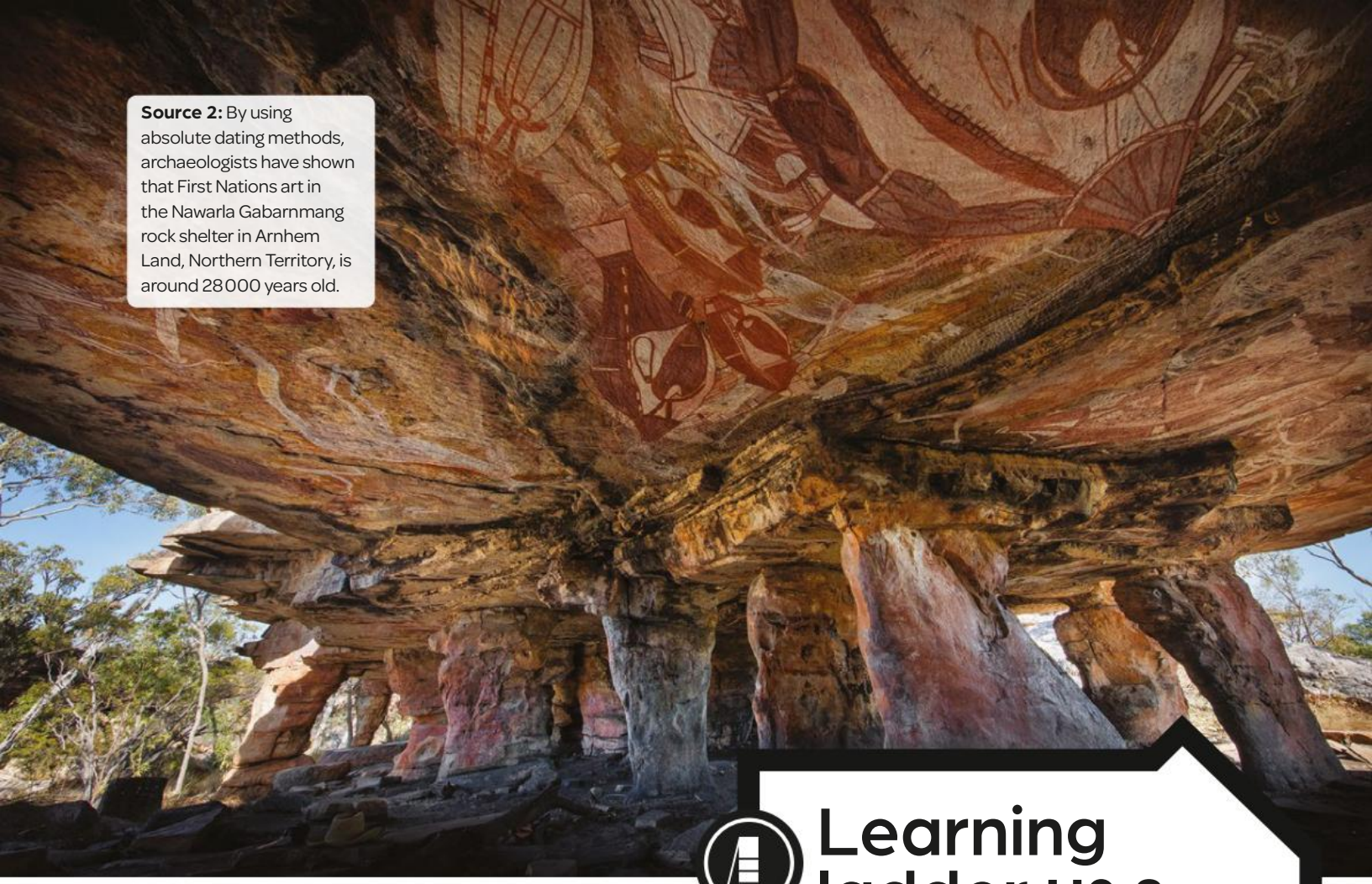
Absolute dating methods measure the physical properties of an object and use these measurements to calculate its age.

One absolute dating method is **radiocarbon dating** (also known as carbon dating). This method is used to date organic matter (that is, something that once lived, such as animals and plants). From the moment an animal or a plant dies, the amount of carbon-14 (a radioactive form of carbon) in the plant or animal starts to decrease at a constant rate.

By measuring the amount of carbon left in an organic object, archaeologists can estimate when the animal or plant lived. Radiocarbon dating has helped to confirm that First Nations Peoples have inhabited the continent of Australia for 65 000 years, changing earlier misunderstandings that First Nations Peoples had been on the Australian continent for 20 000 years.

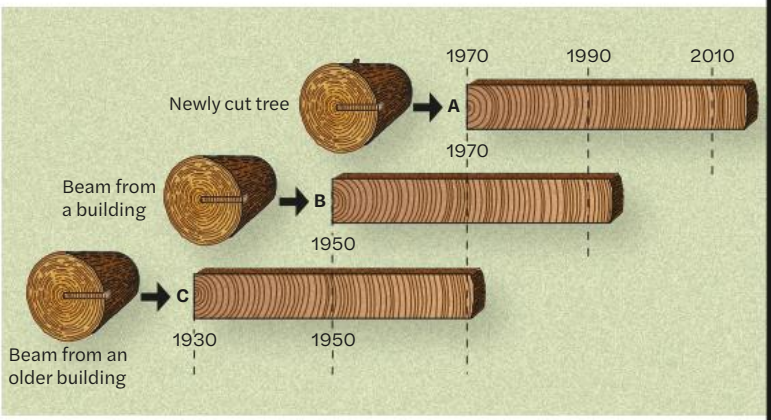


Source 1: A cross-section of an archaeological site showing layers (or strata) of rock and soil



Source 2: By using absolute dating methods, archaeologists have shown that First Nations art in the Nawarla Gabarnmang rock shelter in Arnhem Land, Northern Territory, is around 28 000 years old.

Although rock art does not contain any organic matter, archaeologists have been able to use radiocarbon dating to determine its age by analysing fossilised wasp nests that had formed on the rock art thousands of years ago. By dating the wasp nests found on the rock art, scientists have then been able to determine the age of the rock art.



Source 3: Dendrochronology is an absolute dating method that is used to date wood by examining the rings in the timber. Each year, trees grow a new outer layer of bark and add a 'ring' to the trunk. Archaeologists have developed 'master' sequences of rings that go back thousands of years for different geographic regions, with which samples from wooden artefacts can be compared.

Learning ladder H0.8

How historians and archaeologists investigate the past

1. Source 1:
   - **a** Identify how many layers are shown in the diagram.
   - **b** Which layer is the most recent?
2. Describe the objects that radiocarbon dating can be used to date.
3. Explain how typology is used to date objects.
4. Explain why stratigraphy may sometimes be an unreliable dating method.

Continuity and change

1. Source 1: Identify the changes in transportation revealed in Layer 3 and Layer 4.
2. Describe how archaeological dating methods have changed.
3. Source 2: Explain how radiocarbon dating has changed earlier understandings of First Nations Peoples' occupation of Australia.
4. Source 3: Explain why dendochronology demonstrates the concepts of continuity and change.

HOW TO

Continuity and change, page 193

How was the mystery of the Iceman solved?

In 1991 CE, a mysterious frozen body was found in the mountains between Austria and Italy. Who was he? Why was he on the mountain? How did he die?

Solving an archaeological mystery

On Thursday 19 September 1991 CE, Erika and Helmut Simon were walking in the Ötztal Alps between Austria and Italy when they discovered the remains of what has become known as the 'Iceman' in a rocky gully. All that was visible were his head, shoulders and part of his back. After photographing the corpse, they left to notify the police, assuming that the body was no more than a few years old.

The body was recovered, along with an axe, numerous pieces of string, leather fragments, a dagger and a long stick. The dead man was placed in a coffin and taken to the Institute of Forensic Medicine in Innsbruck, Austria. An examination of the axe led scientists to suspect the body might be very old.

That year and the next, archaeologists excavated the site where the corpse had been found. Excavation at 3210 metres above sea level proved to be challenging. Even when the weather was good, hot-air blowers had to be used to melt the snow so that the gully could be fully examined. Archaeologists established a detailed plan of the site and found items including leather and hide remnants from the Iceman's kit, his bearskin cap, a section of a longbow, string, pieces of skin, muscle fibres, hair, a fingernail and grasses.

Examining the evidence

The first archaeologist to examine the Iceman was Professor Konrad Spindler from Innsbruck University. Based on the body and his knowledge of axe typology, Spindler estimated that the body was at least 4000 years old and dated from the early **Bronze Age** (c. 3000 BCE–c. 1000 BCE).

Radiocarbon dating was used to analyse bone and tissue samples to more accurately date the Iceman. Results from four different scientific institutions concluded that the Iceman lived between 3350 and 3100 BCE. Chemical analysis of the blade of the Iceman's axe revealed that it was made of copper and dated from between about 4000 and 2200 BCE. The more scientific dating methods supported Spindler's estimate.

Clothing

The discovery of the Iceman has provided archaeologists with an understanding of life in the Alps 5000 years ago. While only fragments of the Iceman's clothing remain, a lot has been learned from these items. The clothing found with the Iceman includes:

- **Leggings:** The Iceman's leggings were made of goat hide, and covered the calf and thigh. At the top, two laces joined each leg to the belt, while laces attached to the Iceman's shoes to stop the leggings riding up.
- **Loincloth:** This was made of thin strips of leather and was worn over the belt and leggings. It was held together with animal sinew (the tough tissue that connects muscles to bones).

- **Fur cap:** The Iceman's cap resembled a baseball cap without the eye-shade. It was made of strips of fur stitched together. Two leather straps that went under the chin kept the cap in place.

Source 2: The cap found with the Iceman

- **Coat:** Only part of the coat survived. The coat was made of goat hide and stitched together with animal sinews. Tears in the coat had been repaired using grass fibres. The striped coat may have had sleeves.
- **Cloak:** Three sections of matting made of plaited grass were found. These could have been remnants of a cloak or backpack, or worn over the head as protection from the rain.
- **Shoes:** The Iceman's shoes were made of bearskin and deerskin. The shoes were lined with hay for insulation.
- **Belt and pouch:** Attached to the calf hide belt was a pouch that contained flint, bone tools and tinder fungus, which is a type of mushroom that catches fire easily.

Source 1: The Iceman shortly after being excavated in the Ötztal Alps in September 1991

Equipment

The Iceman had many pieces of equipment with him, including the following:

- **Axe:** The axe had a wooden handle and a copper blade; the parts of the axe were bound together with skin.
- **Dagger:** The Iceman's dagger was kept in a scabbard or sheath made of leather and grass cord. The dagger had two cutting edges on its flint blade and a handle made from ash wood.

Source 3: The dagger and scabbard found with the Iceman; these artefacts are on display at the South Tyrol Museum of Archaeology in Bolzano, Italy

- **Retoucher**: The Iceman had a retoucher made from a stag antler. This was used to sharpen flint tools.
- **Bow:** The Iceman's wooden bow was broken when archaeologists removed it. There was no bow string.
- **Quiver and contents:** The quiver – which was made of hide stitched together and supported by hazelwood rods – contained two completed arrows, 12 partly completed arrow shafts, four tips of stag antlers, animal sinew and string.
- **Backpack:** The only surviving parts of the Iceman's backpack were a U-shaped hazel rod and two narrow wooden boards. They were probably tied together with grass string, and a hide sack or net would have been attached to the frame.
- **Net:** Archaeologists found fragments of a grass net. It would have been suitable for catching birds or fish.
- **Containers:** The Iceman had two cylindrical, pot-shaped containers made of birch bark. One contained maple leaves, plant remains and charcoal.
- **First-aid kit:** The Iceman was carrying birch fungus – which was used for treating wounds and stomach ache – threaded onto fur strips.

Who was the Iceman?

In 1994, Spindler decided that the Iceman had most likely been a shepherd in the Val Venosta region of Italy. This conclusion was based on the Iceman's age, health, clothing, equipment and place of death. He was old enough to be a shepherd and, apart from some injuries that he seemed to have received just before he died, appeared to be healthy. His clothing would have kept him warm even when it was cold, and his equipment would have allowed him to survive for a considerable period of time without returning to his village.

How did the Iceman die?

Spindler initially thought that the Iceman had been caught in a storm and this led to his death. After X-rays and CT scans revealed that several of the Iceman's ribs were broken, Spindler developed his theory to explain how this had happened. Spindler concluded that, on returning to his village with his flock, the Iceman had come under attack. The Iceman escaped his attackers and fled to the mountains. Exhausted and injured, he stopped to rest in the gully but the cold conditions led to him developing hypothermia, from which he died.

Further evidence-based theories have been put forward to shed light on who the Iceman was and how he died. These include:

- **1998 CE:** Peter Vanezis, a forensic pathologist, found well-preserved hop hornbean pollen in the Iceman's intestines. Vanezis concluded that the Iceman had eaten the pollen just before he died. As the hop hornbean tree only flowers between March and June, the Iceman died in spring.

Source 4: This illustration depicts one of the theories explaining the death of the Iceman, Europe's oldest natural mummy at the time of its discovery in 1991 CE. He may have been attacked, as he had several wounds to his body and was carrying weapons, including a copper axe.

- **2001 CE:** An X-ray of the Iceman revealed a shadow in the shape of an arrow near his left shoulder. This turned out to be a flint arrowhead. A small skin wound on the left side of the Iceman's back confirmed that he had been shot in the back with an arrow, which he had pulled out. While the arrow did not puncture his lungs, it would have severed a major blood vessel and resulted in heavy bleeding.
- **2003 CE:** Dr Tom Loy and his team from the University of Queensland's Institute of Molecular Bioscience discovered evidence that suggested the Iceman had been in a fight with multiple people before he died. Loy took blood samples from the Iceman, his knife, coat and axe and ran them through a DNA sequencer. The DNA analysis revealed five different DNA sequences: one belonging to the Iceman's blood, a different sequence on the knife blade, two different sequences on one arrow and a fifth sequence on his coat. Loy has suggested that the Iceman shot two of his attackers, possibly killing them, and retrieved his arrow on both occasions.
- **2007 CE:** Researchers from the University of Zurich used a CT scanner to get a clear image of the wound the Iceman had on his left shoulder. The scan revealed the exact path of the arrow and the damage that was done. The arrow tore a hole in an artery below his left collarbone that caused him to lose a lot of blood, particularly in his chest cavity. This caused him to go into shock and suffer a heart attack.

Source 5: ▶ This statue representing the Iceman is displayed at the Museum of Archaeology in Bolzano, Italy. The statue was created by Dutch experts using three-dimensional images of the Iceman's skeleton and the latest forensic technology.

Learning ladder H0.9

How historians and archaeologists investigate the past

1. Identify the sources of evidence found.
2. Source 1: What relative dating methods were used to date the Iceman's remains?
3. Source 1: Describe how absolute dating methods were used to date the Iceman's remains and belongings.
4. Explain the methods that were used to learn more about how the Iceman died.

Significance

1. What is historically significant about the discovery of the Iceman?
2. Sources 2 and 3: Describe the objects that were found with the Iceman.
3. Explain how X-ray technology allowed researchers to learn more about the Iceman.
4. Evaluate the historical significance of the discovery to our understanding of life in Italy 4000 years ago.

HOW TO

Significance, page 202

How can we protect our heritage?

It is important that we conserve the remains of the past – including the artefacts and cultural sites of ancient societies, such as those of First Nations peoples – as these are part of our heritage.

Our heritage

The things that have been passed down to us are our heritage. Our heritage helps us to understand our place in a larger story, whether it be the story of our family, community, nation or world. For many people, their heritage contributes to their understanding of who they are. By making places of exceptional natural or cultural value into National Heritage sites or World Heritage sites, we are trying to protect them for future generations.

Threats to ancient sites and artefacts

Ancient sites around the world are being damaged by pollution and tourism. The chemicals in polluted air eat away at buildings and monuments such as the carvings on the Athenian Parthenon in Greece and the face of the sphinx in Egypt. Ancient sites are also damaged by tourists; the trampling feet of large crowds cause significant erosion and, unfortunately, tourists have been known to graffiti ancient sites and to chip off pieces of buildings and monuments to take home as souvenirs.

Natural disasters, theft and conflict have also damaged and destroyed many ancient sites. In 1980 CE, a major earthquake in Italy severely damaged the ruins of the ancient city of Pompeii. In 2001 CE, two large statues of Buddha that were carved into the cliffs at Bamiyan in Afghanistan in the 3rd and 4th centuries CE were destroyed with anti-aircraft guns. This was part of an attempt by the Taliban to erase any evidence of other religions from Afghanistan. In 2003 CE, looters ransacked Iraq's National Museum in Baghdad and stole 15 000 artefacts.

Source 1: The Parthenon is an ancient temple situated in the Acropolis in Athens, Greece. The Acropolis is a major tourist attraction, attracting more than 16 000 visitors every day. The Parthenon was originally constructed between 447 and 432 BCE. The Greek government works hard to conserve this ancient cultural site, which is an important part of Greek heritage. In 2019 CE, a major project was started to reinstate up to 360 ancient stones and install 90 new pieces of marble.

Source 2: These First Nations shields are on display in the South Australian Museum.

Industry, such as the mining industry in Australia, is also responsible for the destruction of ancient sites. In 2020 CE, in order to expand an iron ore mine, a mining company blasted the Juukan Gorge in the Pilbara in Western Australia. A cave in this gorge was a sacred site for First Nations people that not only contained evidence of human occupation from 46 000 years ago but also provided a 4000-year-old genetic link to present-day First Nations people.

Conserving sites and artefacts

To ensure that both present and future generations can learn from the remains of the past, sites and artefacts need to be conserved. Conservation can protect the remains of the past by working out what is causing a site or artefact to deteriorate and identifying what can be done to slow or stop the deterioration.

Although safeguarding ancient sites and artefacts is a responsibility that is shared by governments, museums and the international community, museums play a critical role in protecting the remains of the past. Museums are also places where people can learn about and see artefacts that have survived (Source 2). For example, artefacts from ancient Australia are researched at museums by specialists and often interpreted by First Nations people who have cultural knowledge and understanding.

Many sites and artefacts that are important to First Nations Peoples have been destroyed. To conserve the sites and artefacts that remain, it is important that First Nations Peoples are given control of these important parts of their heritage.

Learning ladder H0.10

How historians and archaeologists investigate the past

1. Why is it important to conserve the remains of the past?
2. Identify four ways that ancient sites are threatened.
3. Why should First Nations Peoples be the custodians of the artefacts and sites that are important to First Nations cultures?
4. Source 2: Analyse the advantages and disadvantages of putting ancient artefacts in museums.

Causes and consequences

1. Source 1: Identify why the Greek government wants to preserve the Acropolis.
2. Describe the cause of the destruction of Juukan Gorge.
3. Explain why it is important that First Nations Peoples be given control over their heritage sites and artefacts.
4. Explain the consequences of the destruction of Juukan Gorge for the world's heritage.

HOW TO

Causes and consequences, page 196

H0.11

Site study

Why is Mohenjo-daro a protected site?

The ruins of the largest city of the Indus Valley society at Mohenjo-daro were uncovered in Pakistan in 1922. Flooding and salinity threaten this well-preserved urban settlement.

World Heritage criteria

World Heritage Sites such as Mohenjo-daro are important cultural and natural sites with protection from removal or redevelopment through an international agreement administered by the United Nations. Mohenjo-daro meets two of the six cultural heritage criteria for a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage site:

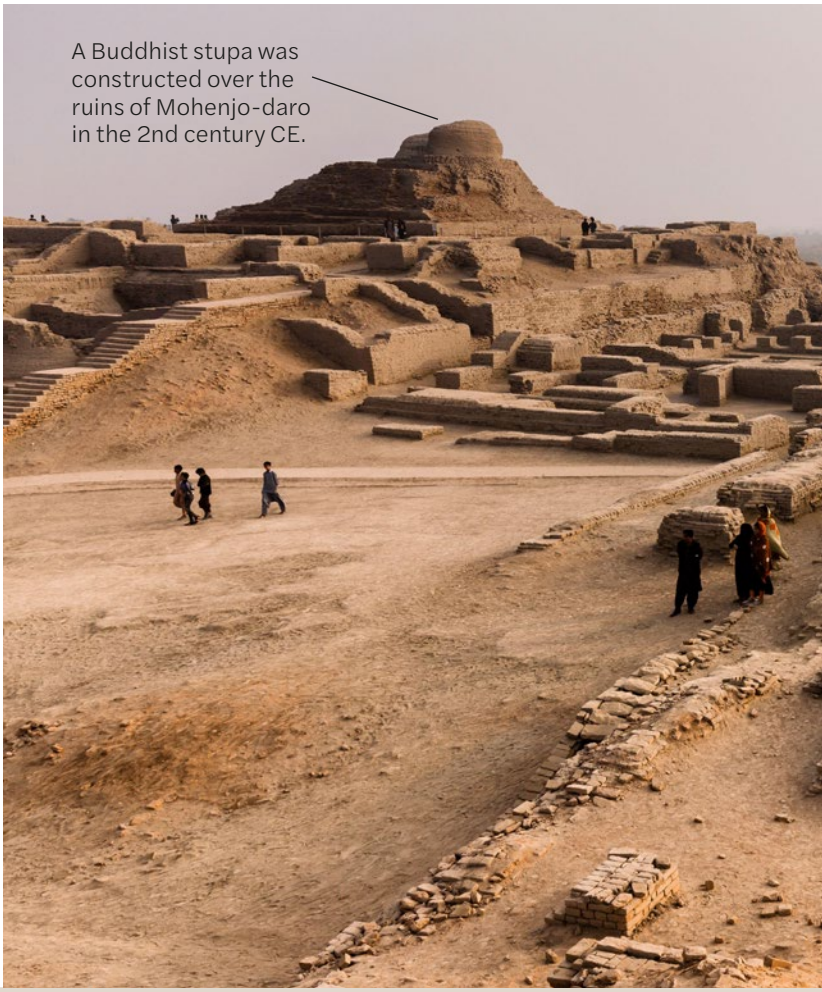
(ii) to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design.

(iii) to bear a unique or at least exceptional testimony to a cultural tradition or to a civilisation which is living or which has disappeared.

Mohenjo-daro represents the largest urban settlement in South Asia, dating back to the beginning of the 3rd century BCE. Evidence of careful town planning is shown with the placement of the acropolis on a high embankment and a well-planned city with a drainage system, pits for sewage and grain storage.

The well-preserved site of Mohenjo-daro represents the cultural traditions of Indus Valley society, which was at its height between 2500 and 2000 BCE. Archaeological discoveries such as statues, copper and stone tools, carved seals, scales, gold jewellery and toys have revealed evidence of the culture, religion, art and administration of the Indus Valley society.

▲ **Source 1:** Zebu Bull seal with Indus script found at Mohenjo-daro



Threats to the site

Armed conflicts, earthquakes, fires, floods and unchecked tourism pose threats to World Heritage sites around the world. Two key threats to Mohenjo-daro are salinity and flooding. Mud brick walls have collapsed or are crumbling from salt contained in the rising water table of the Indus River. A series of wells has been installed and planting of vegetation has taken place to reduce the impact of salinity.

Heavy flooding driven by climate change in Pakistan remains a constant threat to Mohenjo-daro.

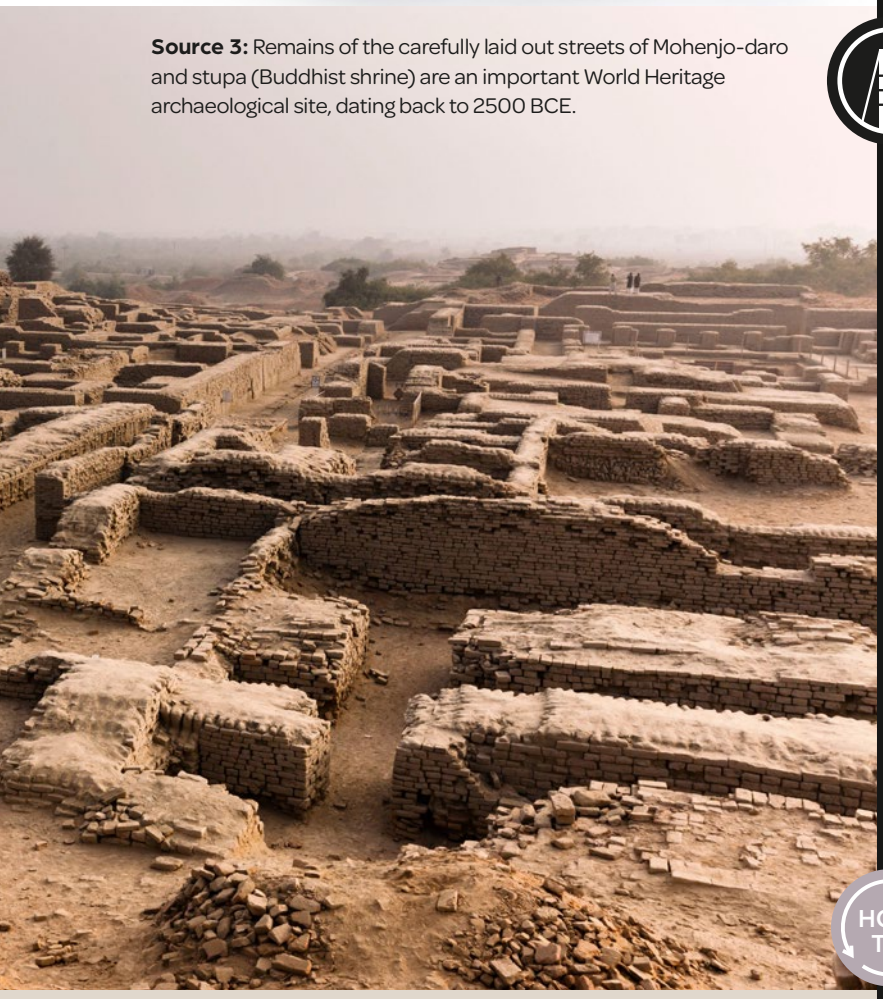
Source 2: Toy clay bullock cart found at Mohenjo-daro

In flood-stricken Pakistan, where an unprecedented monsoon season has killed hundreds of people, the rains now threaten a famed archaeological site dating back 4,500 years.

The recent flooding has not directly hit Mohenjo-daro but the record-breaking rains have inflicted damage on the ruins, said Ahsan Abbasi, the site's curator. 'Several big walls which were built nearly 5,000 years ago have collapsed because of the monsoon rains,' Abbasi said.

He said dozens of construction workers under the supervision of archaeologists had started the repair work. Abbasi said the civilisation at Mohenjo-daro, also known as 'Mound of the Dead' in the local Sindhi language, built an elaborate drainage system, which had been critical in flooding in the past.

Source 4: *The Guardian*, 7 September 2022



Source 3: Remains of the carefully laid out streets of Mohenjo-daro and stupa (Buddhist shrine) are an important World Heritage archaeological site, dating back to 2500 BCE.

Learning ladder H0.11

How historians and archaeologists investigate the past

1. Identify the types of archaeological evidence found at Mohenjo-daro.
2. Describe the current threats to Mohenjo-daro.
3. Explain how Mohenjo-daro meets the UNESCO criteria for a World Heritage site.
4. Evaluate the efforts made to prevent further damage to Mohenjo-daro.

Significance

1. Identify the reasons why Mohenjo-daro is historically significant.
2. Describe the artefacts found at Mohenjo-daro.
3. Source 1: Explain why the discovery of a seal is significant. What does it suggest about the Indus Valley society?
4. Explain the significance of the impacts of climate change on Mohenjo-daro.

HOW TO

Significance, page 202

How do I conduct a good inquiry?

Now that you've finished the History overview chapter, it's time to conduct your own **historical inquiry** on the ancient past. Throughout the chapter you have developed knowledge and understanding of the ancient past. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own historical inquiry!

A historical inquiry gives you the opportunity to be an active historian: forming questions, interrogating sources and communicating insights about the past on a topic of your choice.

The chapter has covered the origins and legacies of the ancient past in addition to significant people, events, ideas and beliefs. What would you like to know more about?

- Early human migrations, page 8
- Ancient Mesopotamia, page 14
- Archaeological dating methods, page 24
- The role of UNESCO, page 32
- The return of First Nations peoples' artefacts, page 31

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you formulate your own research ideas. Once you have worked through this process, you are ready to start the historical inquiry.

Refer to pages 208–213 of the How-to chapter for a step-by-step guide to this process.

See

What do you see?
Who is involved?
What are the key features?
When and where was this happening?

Think

What do you think about that?
How do you think people were affected at the time?
How is this similar to or different from today?

Wonder

What did different groups think about this?
Why is this important to know?
What does it make you wonder?

Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to expand your knowledge and attempt new skills.
When planning your inquiry, consider how the experiences and perspectives of individuals and groups shaped societies, beliefs and events in the past. Think about how the past has had an impact on the present. Use the How-to chapter to support your planning and research.

Deep time history of First Nations Australians

H1

WHAT IS DEEP TIME? 40

HOW DID FIRST NATIONS PEOPLES ARRIVE ON SAHUL? 54

WHAT IS TANDERRUM? 66

WHO WERE THE FIRST BAKERS? 70

First Nations readers are advised that the following chapter contains images of deceased persons.

H1.0

How can I study First Nations Peoples?

Deep Time refers to the history of life on Earth. First Nations Peoples from Australia have the oldest continuous cultures on Earth that span geological eras and major climatic changes. During this time, complex cultures, technologies and belief systems that reflect deep connections to Country have been developed.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	First Nations cultures	First Nations communities	First Nations Countries	Continuity and change	Causes and consequences
5	I can analyse how Dreaming has influenced all aspects of culture, community, technology, wellbeing and caring for Country.	I can analyse the innovations and systems developed by First Nations Peoples.	I can analyse the consequences of and responses to environmental change for First Nations Peoples.	I can evaluate patterns of continuity and/or change.	I can analyse causes and consequences.
4	I can explain the significance of First Nations Peoples as the world's oldest continuous cultures.	I can explain how cultural and technological developments have supported community health and development.	I can explain why it is important for historical sites to be studied, preserved and conserved.	I can explain patterns of continuity and/or change.	I can explain why something was caused or why it led to certain consequences.
3	I can describe the purpose, importance and relevance of creation stories.	I can describe how social organisation and cultural practices have been passed down through generations.	I can describe how First Nations Peoples are connected to Country and what the obligations are to care for it.	I can explain continuity and change.	I can explain how something was caused or its consequence.
2	I can recognise the cultural diversity of First Nations Peoples.	I can recognise the social and political systems and beliefs that govern First Nations Peoples.	I can recognise a site that represents the heritage of First Nations Peoples.	I can describe continuity and change.	I can describe causes and consequences.
1	I can identify key terms such as Deep Time, Everywhen, Dreaming and Songlines.	I can identify key social organisation characteristics such as kinship, moieties and totems.	I can identify sites that are important to First Nations Peoples.	I can identify continuity and change.	I can identify a cause and a consequence.

Knowledge and understanding

Source 1: Australia has more than 100 000 rock art sites that help us understand how First Nations Peoples lived on the Australian continent for more than 60 000 years. The sites have great importance to First Nations people and must be respected and protected.

	Perspectives	Significance	Interpretations	Chronology	Sources
5	I can evaluate historical perspectives.	I can evaluate historical significance.	I can evaluate the evidence supporting a historical interpretation.	I can explain change or causality from a timeline.	I can evaluate sources to determine their accuracy, usefulness and reliability.
4	I can compare perspectives.	I can explain why something is historically significant.	I can compare historical interpretations.	I can summarise the events on a timeline.	I can explain the historical context of a source.
3	I can explain a perspective.	I can explain something historically significant.	I can explain an interpretation of history.	I can follow timeline conventions.	I can apply historical knowledge to explain sources.
2	I can describe perspectives.	I can describe something historically significant.	I can describe an interpretation of history.	I can place events on a timeline chronologically.	I can describe a source.
1	I can identify the perspective of a person from the past.	I can identify something historically significant.	I can identify a historical debate.	I can read a timeline.	I can identify the origin of a source.

Steps in skills progression

Historical concepts and skills

How should I learn about First Nations Peoples, cultures and histories?

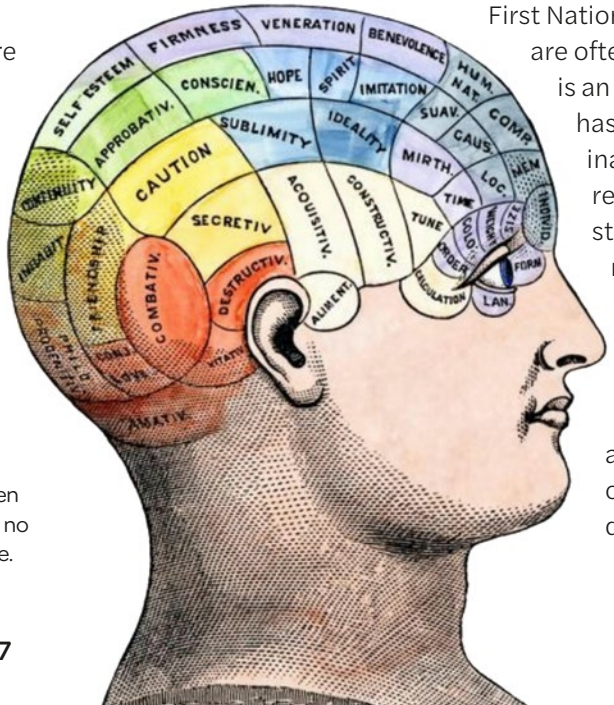
When it comes to learning about Aboriginal and Torres Strait Islander Peoples, Australia has a troubled history. One of the ways that European colonists were able to justify the colonisation and dispossession of First Nations Peoples was through a process known as **dehumanisation**. An important way we can learn about First Nations cultures and histories is to start with open minds and open hearts.

Dehumanisation in Australia

Dehumanisation is a process by which the humanity of a person or group of people is denied. One of the ways this happens is by making claims that the person or group of people are not human. In Australia, for over 150 years, European 'scientists' tried to prove that Aboriginal and Torres Strait Islander people were the 'missing link' in human evolution.

This meant that First Nations people were forced to be subjects in unethical experiments. Scientists during this period used several techniques now recognised as being **pseudoscientific**, most notably phrenology. This technique uses the shape of a person's skull and facial features to determine what kind of person they are and predict their life outcomes.

Phrenology has been completely debunked, but it was one of the main approaches used to try to prove that First Nations people were the missing link in human evolution and not human.



Source 1: This is a typical phrenology diagram. This would be used by a practitioner of this pseudoscience to measure an individual's head and make predictions about the kind of person they were. This has been definitively debunked and has no place in contemporary science.

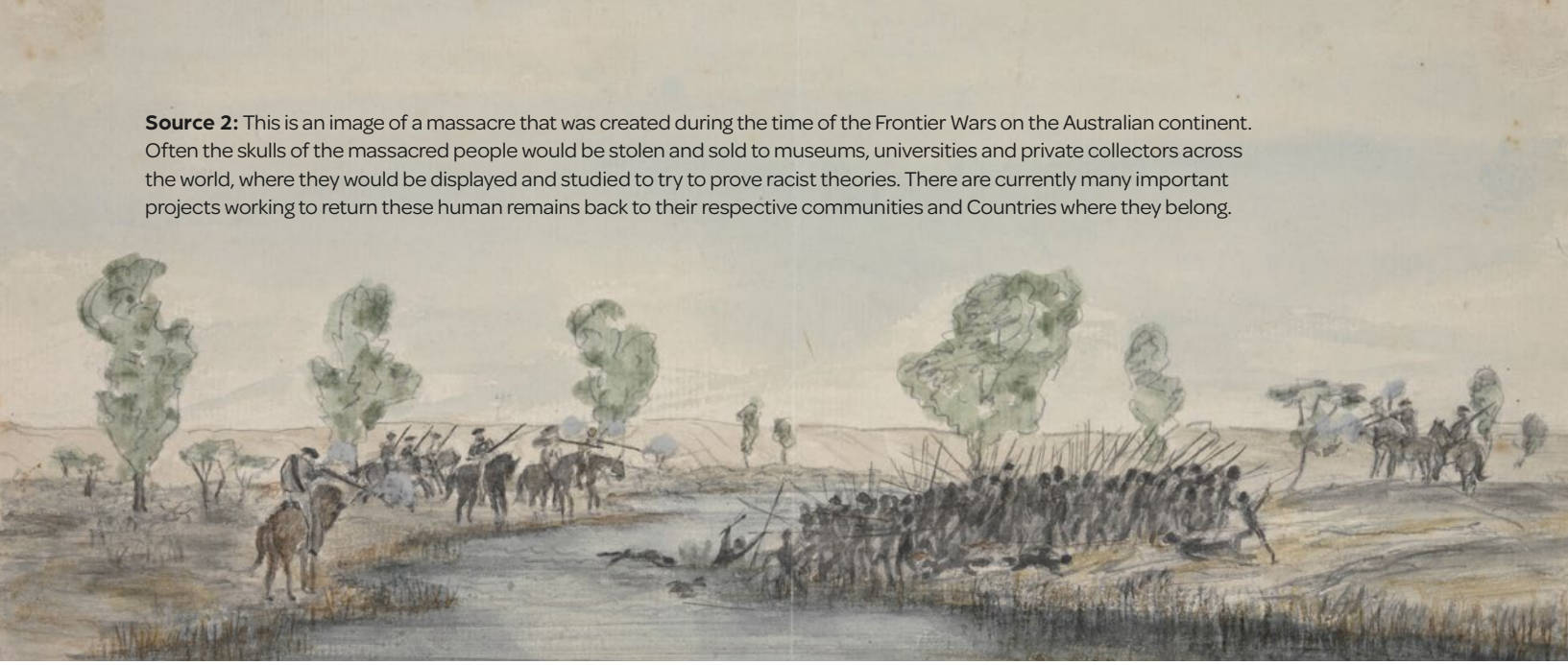
Outcomes of dehumanisation

Dehumanisation almost always leads to violence against people who have been dehumanised, and it is used to justify terrible decisions. In Australia, the dehumanisation of First Nations people was used to justify many of the massacres perpetrated against them. First Nations people were often considered to be animals to be exterminated to protect the introduced European livestock and the land, which had been illegally and violently seized.

These conflicts and massacres are collectively known as the Frontier Wars and they lasted from around 1788 until 1928, with the last state-supported massacre at Coniston in the Northern Territory.

Beyond the massacres and taking of First Nations lands, the dehumanisation of First Nations people has also created a lot of false and harmful information about First Nations people, cultures and histories. These are often known as **stereotypes**. A stereotype is an idea or assumption that an individual has about another person or group which is inaccurate and harmful. Stereotypes can relate to culture, gender, socioeconomic status and many other characteristics that make people diverse.

In Australia, there are many stereotypes which are harmful to Aboriginal and Torres Strait Islander people. This is why it is important to learn as much as possible about First Nations cultures and histories to ensure that we do not perpetuate these harmful lies.



Source 2: This is an image of a massacre that was created during the time of the Frontier Wars on the Australian continent. Often the skulls of the massacred people would be stolen and sold to museums, universities and private collectors across the world, where they would be displayed and studied to try to prove racist theories. There are currently many important projects working to return these human remains back to their respective communities and Countries where they belong.

Learning about First Nations histories and cultures

To ensure that we are able to consider the pain and genocide in Australia's recent past, it is important that you approach your learning with an open heart and open mind. This will not only allow you to consider the sadness of the Australian genocide that occurred in more recent times, but also help you to admire and celebrate the intelligence and achievements of First Nations people from Deep Time to the contemporary era.

An open mind will also help you call out the stereotypes that you and your classmates might have already encountered. As you progress through this section of the textbook, you will learn much about Aboriginal and Torres Strait Islander cultures and histories, which will enable you to challenge some of the lies with facts. This is an important process and will go some way to helping us to achieve reconciliation and justice for Aboriginal and Torres Strait Islander people. This will make Australia a better place for everyone.

Source 3: This is an image of proud Adnyamathanha and Narungga man Adam Goodes. He is a former Australian Football League (AFL) premiership captain and Australian of the Year. In this image he is responding to racism during an AFL men's match in 2013. The person in the crowd called him an 'ape', which was especially harmful given the historical context of dehumanisation of First Nations people in Australia.

Learning ladder H1.1

First Nations communities

1. Identify the two First Nations groups that Adam Goodes belongs to.
2. How did phrenology support the lie that First Nations people were a 'missing link' in human evolution?
3. Describe how learning about First Nations histories and cultures prevents the perpetuation of stereotypes.
4. Explain how engaging with First Nations histories and cultures can help to support reconciliation.
4. Analyse how dehumanisation of people can lead to violence.

Perspectives

1. Identify what European scientists thought phrenology could do.
2. Describe how European perspectives of First Nations people were used to justify massacres.
3. Explain how stereotypes can be harmful to people.
4. Evaluate the harm that pseudoscientific approaches such as phrenology had on First Nations people.

HOW TO

Perspectives, page 200

How ancient is the Australian continent?

Deep Time is the concept that Earth and its life forms have shared a history of billions of years with great environmental changes. Confirmed evidence shows that the first humans arrived in northern Australia from Africa more than 65 000 years ago. Living in a new land, First Nations people developed innovative land management techniques and rich cultures tied to Country. Many were forced to adapt to environmental change such as rising sea levels and reduced water supplies.

Source 1: Excavation by archaeologists at the Warratyi rock shelter in the Flinders Ranges found a bone from a diprotodon that suggests humans were hunting and eating megafauna (giant animals) about 49 000 years ago. The megafauna became extinct as a result of climate change during the last Ice Age.

Source 2: An axe-grinding stone found in Kakadu National Park in 2017 is the oldest confirmed evidence of the occupation of Australia 65 000 years ago. The tool-making technology developed by First Nations people was the most advanced in the world.

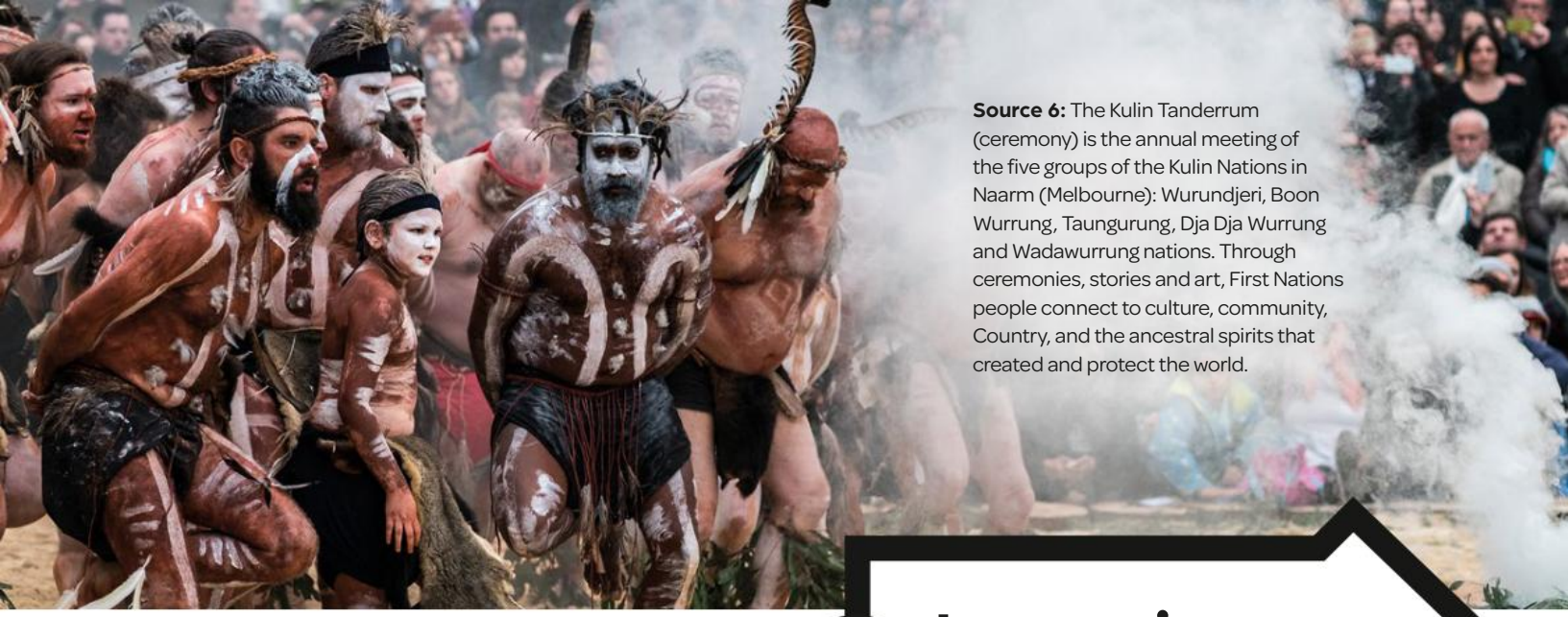
Source 3: The discovery of the oldest human remains at Lake Mungo has provided important evidence about the past and how the ancestors of the Paakantji, Mutthi Mutthi and Ngyiampaa people lived.

Source 4: A charcoal drawing found at Narwala Gabarnmang in the Northern Territory is Australia's oldest known rock art, thought to be painted 28 000 years ago. Rock paintings give us clues about the everyday life of the first Australians.

Source 5: Deep time history of First Nations Peoples timeline

Key ideas timeline

- c. 65 000 years ago – Estimated time of human arrival in Australia
- c. 49 000 years ago – Evidence that humans were hunting megafauna in Australia
- c. 43 000 years ago – Mungo Man dies – his skeleton later becomes the earliest evidence of humans in Australia
- c. 40 000 years ago – Tasmania occupied by this time
- c. 30 000 years ago – First Nations people dispersed across whole continent
- c. 28 000 years ago – Australia's oldest known rock art created



Source 6: The Kulin Tanderrum (ceremony) is the annual meeting of the five groups of the Kulin Nations in Naarm (Melbourne): Wurundjeri, Boon Wurrung, Taungurung, Dja Dja Wurrung and Wadawurrung nations. Through ceremonies, stories and art, First Nations people connect to culture, community, Country, and the ancestral spirits that created and protect the world.

Source 7: The Torres Strait Islands formed when Sahul was split into the continent of Australia and the island of Papua New Guinea. The land bridge was submerged at the end of the Ice Age, 8000 years ago. Torres Strait Islander Peoples, also known as Zenadth Kes, are sea travellers and traders.

Source 8: In 1770, James Cook landed in Australia and claimed the east coast of the continent for Great Britain. In 1788, the First Fleet arrived to establish a colony at Sydney Harbour. [Algernon Talmage, *(1937 CE), The Founding of Australia. By Capt Arthur Phillip RN Sydney Cove, Jan 26th 1788.*]

c. 12 000 years ago
The land bridge between mainland Australia and Tasmania submerged, isolating the Tasmanian population

c. 8000 BCE
Land bridge between Australia and Papua New Guinea submerged by rising seas

c. 4000 BCE
Dingo introduced to Australia

Learning Ladder H1.2

First Nations communities

1. What is the meaning of Deep Time?
2. Who are the five Kulin Nations?
3. Source 6: Describe what ceremonies, stories and art tell about the ancient past of First Nations Peoples.
4. Explain why ancient artefacts and human remains are important sources for understanding the daily lives of First Nations people from the past.
5. Using the sources and your knowledge, analyse the consequences of environmental change during Deep Time for First Nations Peoples.

Chronology

1. Identify the first people to arrive on the Australian continent did so during the Deep Time period.
2. Place the following events in chronological order:
   - 28 000 years ago: Australia's oldest known rock art
   - 4000 BCE: the Dingo introduced to Australia
   - 8000 BCE: the land bridge between Papua New Guinea and Australia is submerged by rising sea levels
   - 43 000 years ago: Mungo Man dies
   - 1788 CE: the First Fleet arrives.
3. Create a timeline using the dates from Question 2.
4. What events on the timeline caused some people to become isolated? How do you think this could have affected First Nations cultures?
5. Source 1: Approximately how long ago did the megafauna become extinct on the Australian continent? Explain how this may have affected First Nations people.

HOW TO

Chronology, page 188

H1.3

Who are Australia's First Nations Peoples?

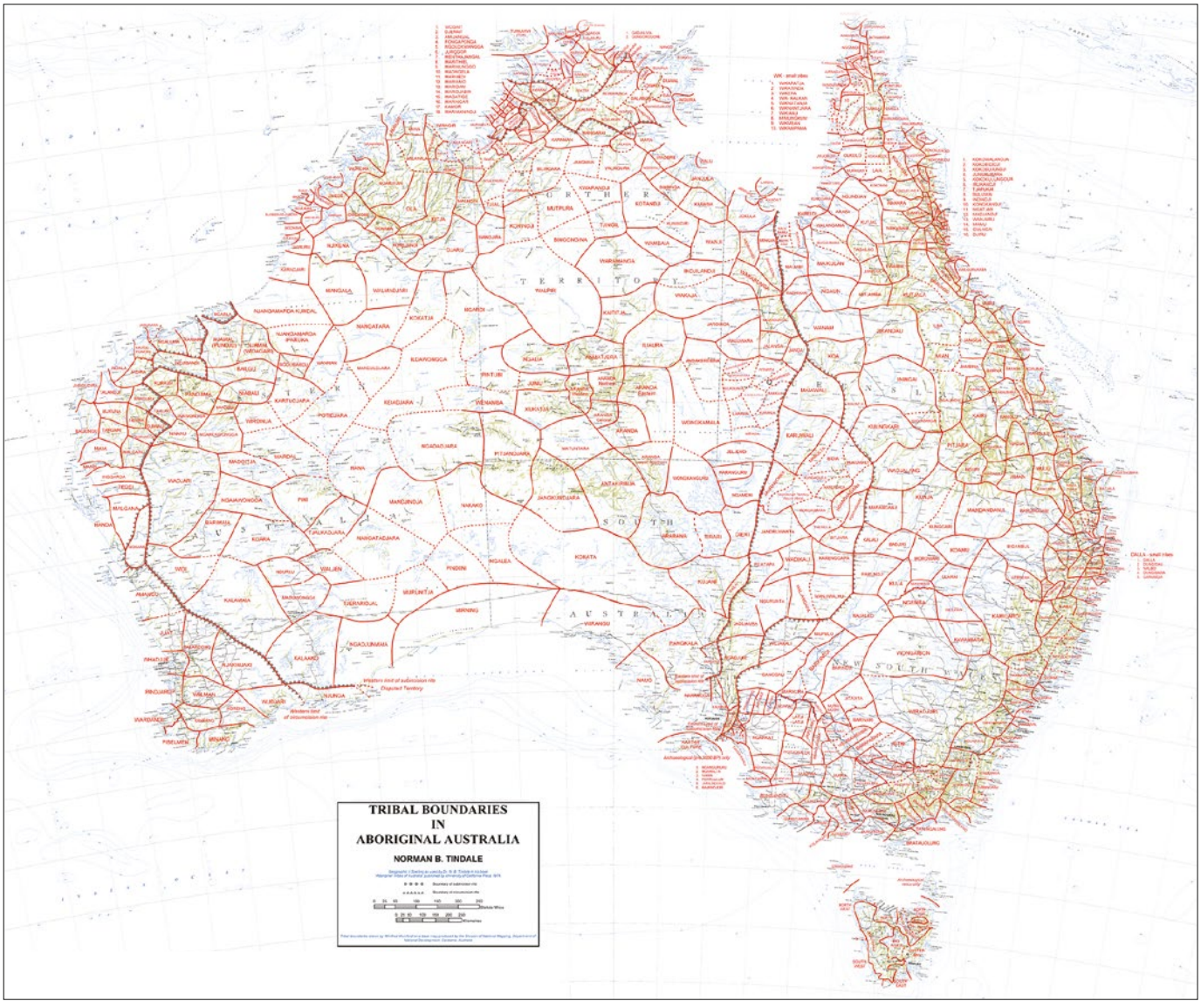
Aboriginal and Torres Strait Islander Peoples are direct descendants of the first humans that emigrated from Africa to what is now known as Australia. Over many tens of thousands of years, distinct cultures were developed in a range of diverse environments.

Source 1 is a reproduction of NB Tindale's 1974 CE map of the First Nations group boundaries at the time of first European colonisation in Australia. It is not intended to represent contemporary relationships to land.

Different cultural groups

Aboriginal and Torres Strait Islander Peoples have well-defined boundaries for their homelands. First Nations Peoples use knowledge and skills developed over many millennia to care for **Country**.

Tribal boundaries in Aboriginal Australia, Norman B Tindale, 1974 CE



▲ **Source 1:** Australian Aboriginal and Torres Strait Islander Nations

Source: South Australian Museum, © Tony Tindale and Beryl George, 1974 CE

Source 2: This is a photo of warriors from Saibai Island in the Torres Strait off far north Australia. Torres Strait Islanders are of Melanesian origin and have unique and rich cultures.

Country is the land, water and sky that connects First Nations Peoples to ancestors and family. It is a place and a relationship. First Nations Peoples had permanent homes, but would seasonally move across Country to manage the landscape. There were extensive trade routes across the continent, but the unique connections to Country mean that it was rare to take land from another group.

When the British invaded the Australia continent in 1788 CE, it is estimated there were up to one million First Nations people living in 500 different **nations**. Aboriginal Peoples occupied and managed the entire continent, and had adapted to and modified a wide range of environments, from tropical rainforests to dry desert regions.

Population densities ranged from 3 to 21 square kilometres per person in fertile riverine and coastal environments to more than 90 square kilometres per person in deserts.

Torres Strait Islander Peoples

Torres Strait Islander Peoples come from the islands of the Torres Strait, which stretches between northern Queensland and Papua New Guinea. Torres Strait Islanders are distinct from the Aboriginal Peoples on the Australian mainland. Torres Strait Islanders originated in Melanesia, a region in the Pacific Ocean to the north-east of Australia.

Along with the Aboriginal inhabitants of Australia, the people of Melanesia also emigrated from Africa. Australia and New Guinea were connected by a land bridge because of low sea levels during the Ice Age, and this is known as the continent of Sahul.

Torres Strait Islander Peoples are sea travellers, traders, fishers and gardeners. Torres Strait Islander culture is linked to the Creator spirit, Tagai. Tagai is represented in the sky by several constellations. These constellations are used as a guide for the seasonal cultivation of crops and gardens.

Learning ladder H1.3

First Nations Countries

1. How many First Nations groups were there when the British people invaded in 1788 CE?
2. Source 1: Approximately how many nations are there between Sydney and Perth?
3. Explain how Torres Strait Islanders and Aboriginal Peoples are different.
4. Source 1: Explain what this source shows about the extent of First Nations Peoples' occupation of Australia.

Significance

1. Identify why colonisation by Europeans was a significant event for First Nations Peoples.
2. Describe First Nations Peoples' significant relationship to Country.
3. Explain the significance of the Ice Age to First Nations Peoples' occupation of Australia and the Torres Strait Islands.
4. How many First Nations Peoples lived on the Australian continent and adjacent islands in 1788 CE? Undertake research to find out how many First Nations Peoples live in Australia now. Has this number increased as much as the number of non-First Nations people? Why or why not?

HOW TO

Significance, page 202

What is the Dreaming?

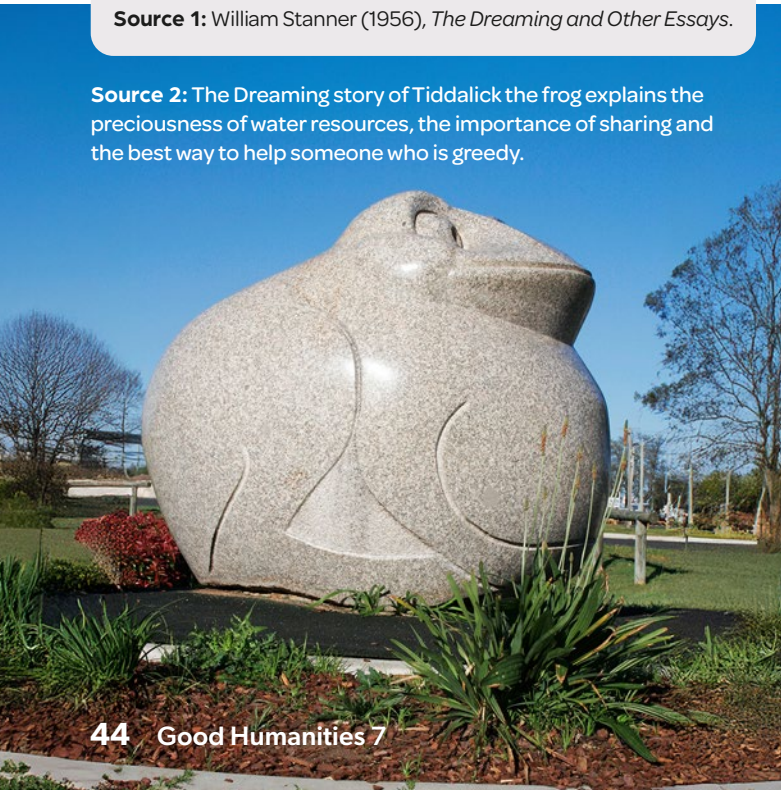
The **Dreaming** is a complex concept to define. It links to both place and time, as well as providing the law (rules to be followed) and lore (stories about Country). It is both a philosophy and a moral code that teaches how to live a good life. At the centre of the Dreaming are relationships and relationality, which means how we all 'fit' together.

The Dreaming in time

Sometimes the Dreaming is called the Dreamtime. This is not accurate, because Dreamtime implies it was a long time ago. For many First Nations people, the Dreaming is the present, the past and the future all at once. This concept is known as 'everywhen'. For many First Nations people, when thinking about the Dreaming in the past, this was when the many different Creator Spirits travelled across the formless Earth and created the land, sea, sky, stars and other natural features, including living things

The process and the Creator Spirit varies between First Nations cultures. Some of the more well-known Creator Spirits are the Rainbow Serpent and Bundjil the Eagle.

> The Dreaming conjures up the notion of a sacred, heroic time of the indefinitely remote past, such a time is also, in a sense, still part of the present... One cannot 'fix' The Dreaming in time; it was, and is, everywhen.
>
> **Source 1:** William Stanner (1956), *The Dreaming and Other Essays*.

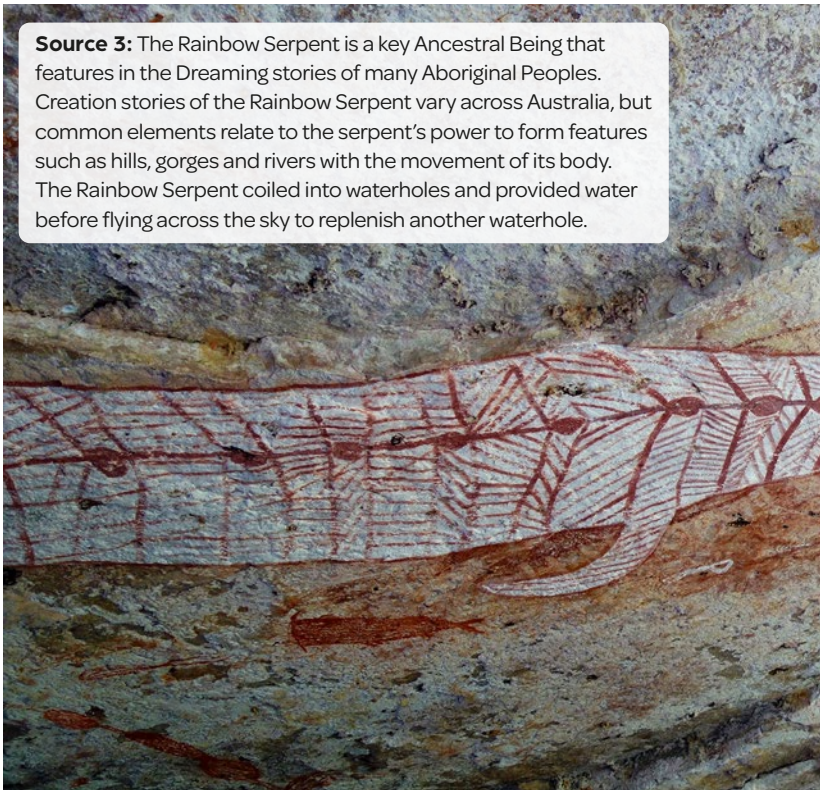


Source 2: The Dreaming story of Tiddalick the frog explains the preciousness of water resources, the importance of sharing and the best way to help someone who is greedy.

The creation stories

Creation stories are central to First Nations people being able to connect to Country. These stories tell of events from the distant past and how all things were created. In addition, these stories often share important information about the best ways to care for Country and honour the Creator Spirits.

In one creation story, Bundjil the Eagle carried with him a blade which he used to carve out the waterways from the Earth. Once he had completed shaping the land, he sculpted two men out of clay. He was pleased with his work and danced around the men. To give them life, he laid upon them and breathed life into them. With the men now living he taught them the ways of making weapons and how to behave appropriately. Once this was done, Bundjil left the men and asked Waang, the crow, to release some winds. Waang did so, and this released large trees into the air and lifted Bundjil and his family into the sky where they became the stars that look upon us every night.



Source 3: The Rainbow Serpent is a key Ancestral Being that features in the Dreaming stories of many Aboriginal Peoples. Creation stories of the Rainbow Serpent vary across Australia, but common elements relate to the serpent's power to form features such as hills, gorges and rivers with the movement of its body. The Rainbow Serpent coiled into waterholes and provided water before flying across the sky to replenish another waterhole.

The Torres Strait and Tagai

Torres Strait Islander people have different creation stories from those on the mainland. In these stories, Tagai, a great fisherman, is central to the creation of the Torres Strait. In one important story, Tagai and 12 other fishermen were on a voyage to catch fish for the community. As the voyage continued, Tagai became separated from the other fishermen, and they drank all their fresh water and Tagai's fresh water too. Tagai was so enraged that he killed the 12 fishermen, cast them into the sea and told them never to bother him again. They went on to become the constellations of Pleiades and Orion. These constellations are still used today to help with navigation and seasonal agriculture, and to teach young people not to be greedy.

Source 4: Tagai is represented by a constellation of stars in the southern sky.

Relationships and relationality

A central part of the Dreaming is recognising that we are connected to all things in the cosmos. Another important part is recognising that not only are we connected to everything else, but also we are required to 'fit together' – that is, working with Country, other people and the community to achieve shared goals.

Source 5: Aboriginal people from different clan groups have different stories associated with Namondjok, an Ancestral Being who lives in the sky and can only be seen at night. In this rock painting in Kakadu National Park, Namondjuk is shown to the left of Namarrgon, the Lightning Man, who is responsible for the lightning storms in the region.

This doesn't mean that we can't be ourselves in all our uniqueness and diversity; it means that we have obligations to ensure that we care for Country, care for the Elders and the old people, care for the children, and care for each other and ourselves. For many First Nations people, these responsibilities are well understood and these obligations are taught though the many different Dreaming stories.

Learning ladder H1.4

First Nations cultures

1. Identify the term that describes how the Dreaming fits in time.
2. What are the names of two well-known creator spirits?
3. Describe the important information that creation stories often include.
4. What does 'fitting together' mean in First Nations cultures?
5. What do Tagai and the fishermen become? How do they help Torres Strait Islander people today?

Significance

1. What do Dreaming stories teach young people?
2. Describe the importance of fitting in for First Nations people.
3. Explain the significance of the constellations of Pleiades and Orion to Torres Strait Islander people.
4. Explain why Dreaming stories help us understand how we 'fit together'.
5. Why do you think that different clans have different stories about Namondjok?

HOW TO Significance, page 202

H1.5

How do we know about ancient First Nations Peoples?

Much of what we know about the ancient people who have lived on the Australian continent for millennia comes from rich oral histories, which have been passed on for more than 2000 generations. These histories are often accurate accounts of ancient geological and climatic events.

Two methods have been used to learn about ancient First Nations Peoples and the history of the Australian continent: oral and visual histories, and **archaeology**, which is the study of the material remains of objects, built structures, waste and human remains that have been preserved for many tens of thousands of years. A limitation of using archaeological techniques is that material remains are usually organic and mostly biodegradable. This means that much of what was left has naturally degraded and returned to Country.

Oral histories

Oral and visual histories have been handed down over thousands of generations as a record of how long people have been living on the Australian continent and the adjacent islands. One of the most important, and often underrated, sources for discovering the past is First Nations oral histories. These remain in song, story, dance and ceremony, and often have captured important historical events. An important example of this is a story which relates to one of Australia's last volcanic eruptions.

The Two Feuding Volcanos

Victoria is home to what is known as the Newer Volcanics Province. This is an area of Victoria that is considered to be seismically dormant. This means that although there is no volcanic activity currently, there could be some in the future. The most recent eruptions in the area date back to approximately 5000 years ago. Beyond the geological evidence of the eruption, which can be found in the rocks of this region, the First Nations story of the Two Feuding Volcanoes is an **oral history** of the event.

In this story, Lalgambook was a young and angry volcano, while Tarrengower was an old and calm volcano. As Lalgambook was much younger, he was quick to anger and began throwing rocks high into the sky at Tarrengower. Tarrengower grumbled and told Lalgambook that he was too weak to reach him.

Source 1: Rock painting of the marsupial lion, *Thylacoleo carnifex,* in Western Australia. This painting is estimated to be between 15 000 and 22 000 years old.

In response, Lalgambook got even more angry and exploded with great fury. Lalgambook blew his core out completely and could erupt no further. Tarrengower, seeing Lalgambook had exhausted himself, also stopped smoking and grumbling.

This story provides an accurate account of the last eruption of Lalgambook and how the Guildford Plateau was formed. It also provides insight into the expectations of Elders within the community and how they should respond to young people who might be experiencing strong emotions.

Yeo Yeo

Another oral history comes from the Wiradjuri People of New South Wales, who have a story about Yeo Yeo, a devil that descended to Earth from the sky and possessed supernatural powers to harm people. This story relates to the Narraburra meteorite. Initially it was unknown how long the meteorite had been on Earth, but a study in 1969 estimated that the meteorite fell to Earth somewhere between 150 000 and 340 000 years ago. There is no doubt that the Wiradjuri story recounts this destructive event and that the estimated time of the meteorite on Earth is beyond the time that humans have been on the continent. Therefore, further study of the meteorite is needed to determine a more accurate dating of when it landed.

Visual histories

Other important First Nations historical texts have recorded the history of the Australian continent through images. One important example of this is the recording of *Thylacoleo carnifex*, also known as the marsupial lion. This animal has been extinct for approximately 30 000 years. This means that First Nations people lived alongside the lions for approximately 40 000 years.

Many archaeological specimens of the lions have been found, some close to complete. However, these remains do not tell us anything about the parts of the animal that were not fossilised, such as the soft tissues of the fur, ears, claws, eyes and skin.

Historical images in rock paintings have provided valuable data, such as the fact that marsupial lions had stripes. The rock paintings also show that the lions had pointed ears. Without these images, archaeologists would have to make educated guesses about the shape of the ears. With these important images, we now have a far more complete understanding of *Thyacoleo carnifex*.

Source 2: This painting is a primary source created by convict artist Joseph Lycett. His paintings recorded First Nations people in the early colonial period. [Joseph Lycett (1817), *Aborigines Spearing Fish and Diving for Shellfish*]

Learning ladder H1.5

First Nations Countries

1. Identify the volcanoes in the story of the Two Feuding Volcanoes.
2. Why is Lake Mungo an important site?
3. Describe how the story of the Two Feuding Volcanoes teaches people how to behave.
4. Explain why it is important for people to care for Lake Mungo.
5. Why are images of the marsupial lion so important? What do they tell us about this extinct animal?

Sources

1. Source 2: Identify the origin of this source.
2. Source 2: Describe the types of activities the people are doing in the painting.
3. Explain how the rock paintings of a marsupial lion helped archaeologists to understand this extinct animal.
4. Explain the event that the story of the 'Two Feuding Volcanoes' recounts.
5. Evaluate the importance of oral sources to our understanding of ancient Australian history.

HOW TO

Sources, page 191

How are First Nations cultures in Australia the oldest cultures in the world?

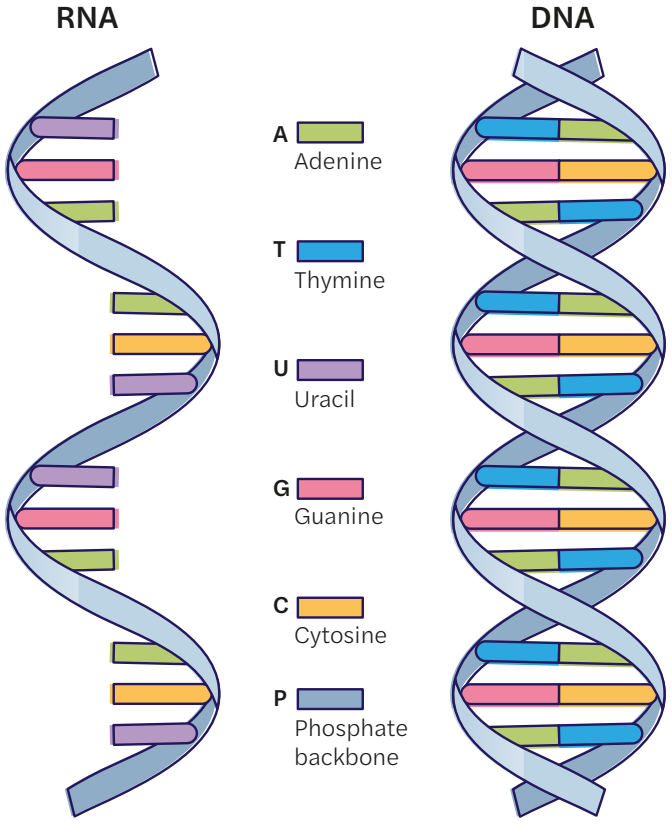
There are several ways to investigate the age of a culture. One of these approaches includes seeing how far into the past Deoxyribonucleic Acid (DNA) can be traced; another is to study the oral and visual histories (covered in the previous spread), which often remember dateable events such as celestial or geological occurrences. Archaeological evidence can also be used to estimate how long ago sites were inhabited by humans. Evidence gathered using these three approaches suggests that the continent and adjacent islands of Australia are home to the world's oldest continuous human cultures.

First Nations DNA evidence

DNA is an important link to the past. Before the invention of technologies that enabled them to travel vast distances, humans could only travel as far as they could walk or swim. Once they arrived in places that were abundant with desirable resources, such as food, medicine and building materials, they would often stay for some time. This would result in multiple generations of people being born in the one place before these communities moved on.

This is the basis of the Out of Africa theory of human evolution and migration. The science of genetics shows that over time, and with each new generation of people, human DNA changes slightly. This means that as humans moved across the globe and became isolated from one another, the DNA changed, and this created subtle genetic differences.

The DNA changes over time were too small to have any significant impact on the physical attributes of the isolated populations of humans. We are all as strong, fast and smart as each other. The small changes have shown us a genetic map of human movement. A **mitochondrial DNA** test can estimate how long a population has been living away from Africa. The test makes comparisons of human DNA to estimate how long a group has been in a specific place based on how many changes are present in the DNA.



Source 1: A mitochondrial DNA test can determine how long populations of humans have been living away from Africa. The test can establish an accurate range of time that human populations have inhabited a particular place.

Recent DNA tests on a sample of Aboriginal people across Australia found that their ancestors had been on the Australian continent for at least 31 000 years. It also found that there had been no other large-scale migrations of people to the Australian continent after the initial arrival. The date (31 000 years) is not considered to be the most accurate because there are other pieces of compelling evidence that show that people have been in Australia for at least double that time. However, it demonstrates why historians should use many different types of evidence when studying the past.

Archaeological evidence

The archaeological evidence in Australia shows that people have been living here for between 65 000 and 75 000 years. The date is a range because we do not yet have the technology to measure such great distances in time with enough accuracy.

The most famous human remains discovered in Australia are Mungo Man and Mungo Woman. These remains were excavated from the Lake Mungo region in New South Wales on Paakantji, Ngiyampaa and Mutthi Mutthi Country. The remains were found in the mid-20th century and removed so that their age could be determined through testing. The tests found that the remains were around 42 000 years old. The **Traditional Owners** campaigned for many decades to have the remains returned to Country so they could rest with the ancestors and spirits in the Dreaming. Mungo Woman's remains were repatriated in 1992 and Mungo Man's in 2017.

Burial ceremonies

Archaeologists were amazed at the ritual of Mungo Man's burial. He had been laid out with his hands in his lap, and his body covered in a red ochre (paint) that had been transported from hundreds of kilometres away. The remains of a small fire were also found nearby.

Funeral ceremonies are different for each First Nations culture. Some believe the spirit of the dead person remains where they died. Others believe that the spirit of the dead person joins their spiritual ancestors in the Dreaming.

Source 2: The 43 000-year-old skeleton of Mungo Man is a primary source of evidence uncovered by archaeologists in 1974. The skeleton was taken to the Australian National University in Canberra for further study. In 2017, the skeleton was returned to his original resting place after a campaign by Mutthi Mutthi, Paakantji and Ngiyampaa Traditional Owners to have him returned to Country.

In some Aboriginal communities, people are not allowed to say the name of a deceased person. This is to make sure the spirit is not called back to this world. Many First Nations people respect this practice today.

Other archaeological evidence comes from food waste piles known as **middens**. Middens are often full of shells, discarded rocks, animal bones and other items that do not degrade quickly. There are many middens around the Australian coastline, but these often cannot provide accurate dates of habitation because the coastline of the

continent changed significantly after the last Ice Age. During this time many middens were submerged as sea levels rose.

Madjedbebe, which is a rock shelter on Mirarr Country in the Northern Territory, is an important site for dating human habitation on the Australian continent. This site has clear evidence of continuous use of grain-grinding stones and other activities associated with human habitation. Archaeological dating techniques have established that the site is more than 50 000 years old.

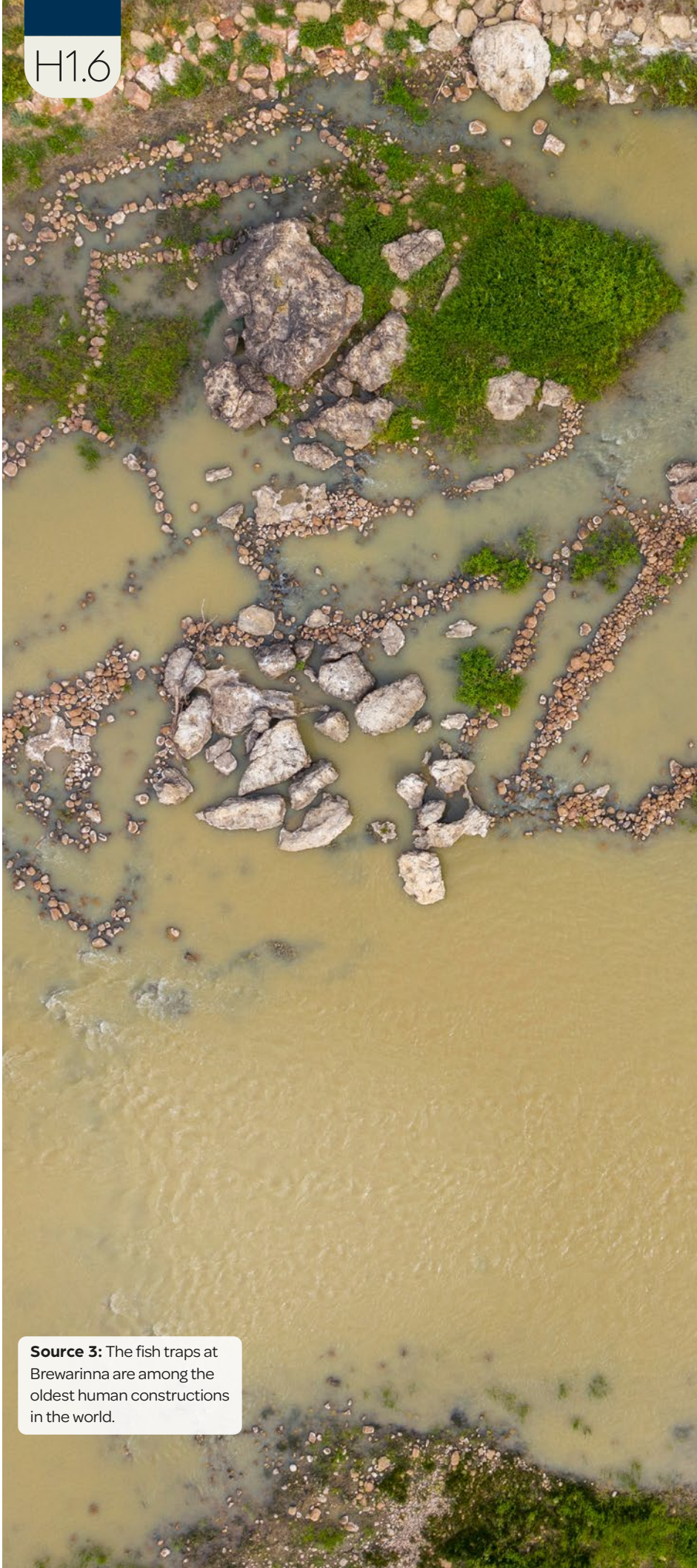
The oldest fish farmers

Other important archaeological evidence for how long people have lived on the Australian continent comes from human-built structures. One example of this is Ngunnhu (the Brewarrina fish traps). This is an interesting site because there are differing accounts about how old it is. For the Ngemba Traditional Owners, the traps are approximately 40 000 years old and were constructed by Baiame, a great Ancestral Being.

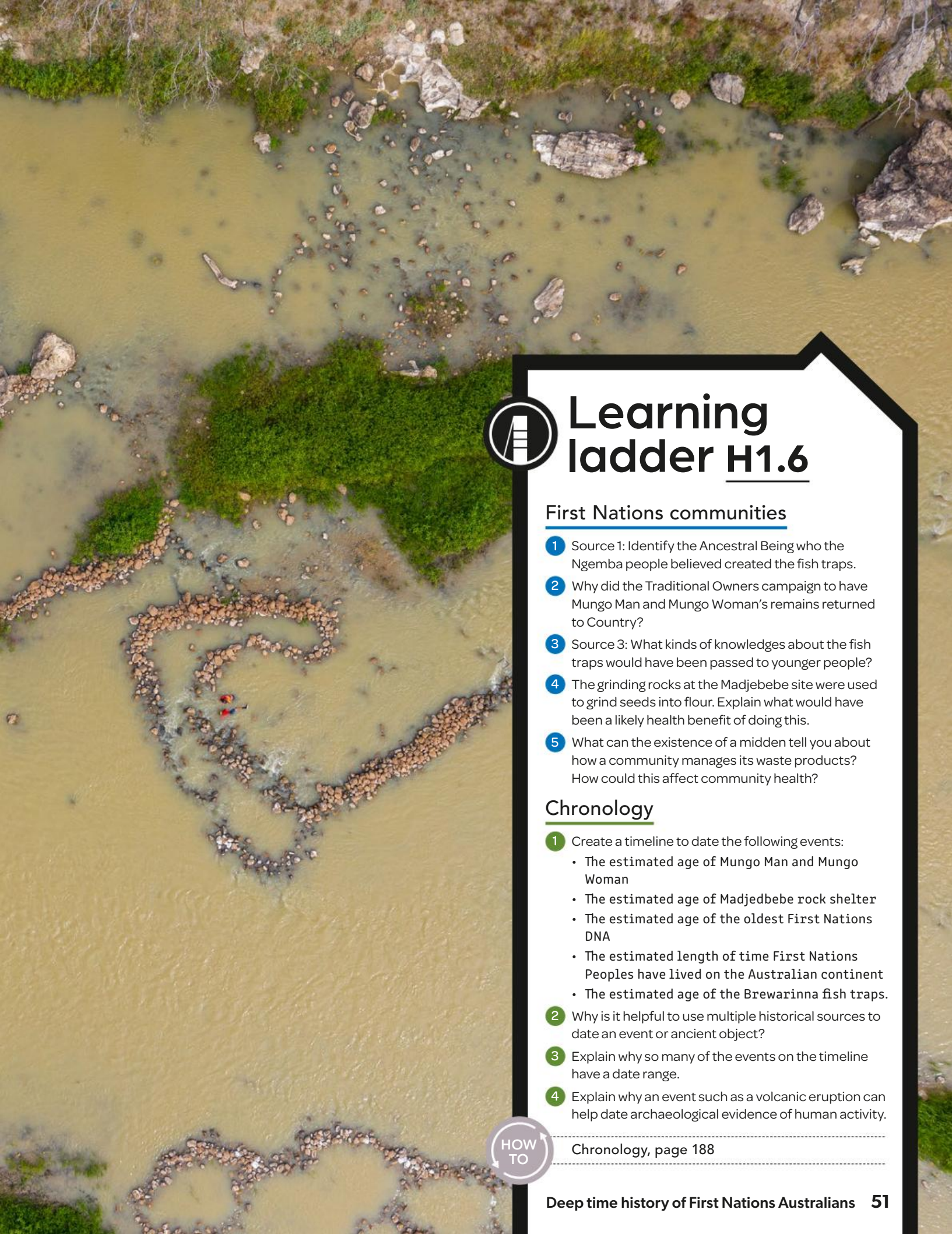
According to this Dreaming story, Baiame travelled to this place and found the local people starving with the river dried up. To help, he cast his net across the river in a specific pattern, which his sons Booma-ooma-nowi and Ghinda-inda-mui then followed to build the traps.

He then taught the Ngemba people how to call the rain through dance and song to fill the river and catch many fish. He also taught the people how to herd the fish into the traps and maintain them to ensure plentiful fish for the future. Finally, he instructed that the Ngemba share their responsibility and bounty from the traps with neighbouring First Nations Peoples. Ngunnhu became an important gathering place from then on.

The age of the traps, however, is contested. Western dating techniques are limited and have only been able to estimate the age of the traps as being between 1000 and 3000 years old. Despite this, the traps remain an important example of First Nations' engineering and innovation, and they play a key role in ensuring the health of the river.



Source 3: The fish traps at Brewarinna are among the oldest human constructions in the world.



Learning ladder H1.6

First Nations communities

1. Source 1: Identify the Ancestral Being who the Ngemba people believed created the fish traps.
2. Why did the Traditional Owners campaign to have Mungo Man and Mungo Woman's remains returned to Country?
3. Source 3: What kinds of knowledges about the fish traps would have been passed to younger people?
4. The grinding rocks at the Madjebebe site were used to grind seeds into flour. Explain what would have been a likely health benefit of doing this.
5. What can the existence of a midden tell you about how a community manages its waste products? How could this affect community health?

Chronology

1. Create a timeline to date the following events:
   - The estimated age of Mungo Man and Mungo Woman
   - The estimated age of Madjedbebe rock shelter
   - The estimated age of the oldest First Nations DNA
   - The estimated length of time First Nations Peoples have lived on the Australian continent
   - The estimated age of the Brewarinna fish traps.
2. Why is it helpful to use multiple historical sources to date an event or ancient object?
3. Explain why so many of the events on the timeline have a date range.
4. Explain why an event such as a volcanic eruption can help date archaeological evidence of human activity.

HOW TO

Chronology, page 188

What was pre-colonial life like for First Nations people?

First Nations Peoples adapted to the challenges and thrived for millennia across the continent and adjacent islands, and invented new tools and devised new ways of caring for Country.

Thriving in a new land

When humans arrived on the Australian continent more than 65 000 years ago, they lived alongside giant animals, called **megafauna**.

An excavation by archaeologists at the Warratyi rock shelter in South Australia found a bone from a giant wombat, and fragments of an eggshell from a giant flightless bird. These finds suggest that humans were hunting and eating megafauna 49 000 years ago.

The occupants of the shelter may have also used megafauna skins. A 40 000-year-old sharpened bone point found at the site could have been used for needlework to make garments from the skins.

Source 1: Fire was important in land management for First Nations people and remains so today. Firesticks were used to burn grasslands to promote regrowth of lush new grass, which attracted species such as kangaroos. Fire was also used as a tool to drive game towards hunters. Modern firesticks are still used for control-burning today.

Source 2: A ball used to play Marn Grook made from the tightly bound skins of possums. This would be used to kick long distances where the catchers would jump over each other.

There is documented evidence that Aboriginal peoples maintained large pastures of murnong (yam daisy) around Melbourne. This required deliberate cultivation to ensure the yams were edible.

Trading

First Nations people created extensive trade routes across the Australian continent, facilitating trade and exchange over many thousands of kilometres. If a person trading items wished to enter the Country of another First Nations group, they would need to seek permission and this would be granted after the required waiting time, and usually with a ceremony. In some cases, they would be given a message stick and this would be a symbol of having permission to be on Country that was not their own. This is similar to a travel visa today.

Recreation

Prior to colonisation, people living on the Australian continent enjoyed a good quality of life. The communities held many things in common and this meant that everyone always had enough to eat, company if they desired it, and a warm, dry and safe place to live. It is estimated that individuals only had to work between four and five hours each day to fulfil their basic needs. This meant that First Nations people had more free time to spend on recreation.

Source 3: First Nations Peoples arrived at a time when Australia was home to giant reptiles, marsupials and birds, known as megafauna. Humans lived alongside megafauna for many thousands of years before the animals became extinct, possibly around 30 000 years ago due to climate change during the Ice Age.

First Nations people spent this free time learning and enjoying song and dance, playing musical instruments and making art. As well as engaging in spiritual and cultural activities, First Nations people played a lot of games. Games varied between groups and often reflected the materials available to make the objects used in games.

One of the most famous pre-colonial games is Marn Grook. This was a game played throughout western Victoria. This game could involve up to 100 players, and who played in which team would often be determined by **moiety**. Teams kicked a ball that was made from bundled possum skins. It is thought that Marn Grook was an inspiration for Australian Rules Football.

Conflict and warfare

Despite the positive quality of life that many First Nations people enjoyed prior to colonisation, warfare and conflict did happen from time to time. Conquest and warfare were usually conducted within well-defined rules that protected old people, children and those who were not warriors. It was also well understood that conflicts were not to harm Country and were not to be unnecessarily cruel.

These rules were managed through a process known in some places as Makarrata. This was a ceremony conducted at the conclusion of a conflict as a way of 'coming together to make right'. As part of negotiating a lasting peace, those who had broken the rules of conflict would also be held accountable and, in some cases, face punishment. Makaratta ensured that both sides felt represented and respected as part of coming together.

Learning ladder H1.7

First Nations communities

1. Identify how teams were selected for a game of Marn Grook.
2. Why would some traders have to wait to get a message stick to enter the lands of another nation?
3. Describe what Makarrata means. How would this ceremony help to establish a lasting peace after a conflict?
4. Explain how the continental trade routes helped First Nations cultures to be maintained over such a long time.

Causes and consequences

1. Match the cause with the consequence.

Cause	Consequence
Sea levels are lower	Megafauna become extinct
Climate change	More kangaroos come to eat new grass
Sea levels rise	Sea voyage from South-East Asia to Australia is made shorter
Firesticks used to burn grassland	First Nations people in Tasmania stranded

2. Describe the consequences of control-burning.
3. What consequences might there be from having edge-ground axes?
4. Megafauna became extinct due to climate change during the last Ice Age. Is this similar or different to modern animals becoming extinct? Justify your response.

HOW TO Causes and consequences, page 196

What environmental changes did First Nations people face?

First Nations Peoples adapted to great environmental change such as the impacts of climate change during and after the Ice Age.

Ice Age changes

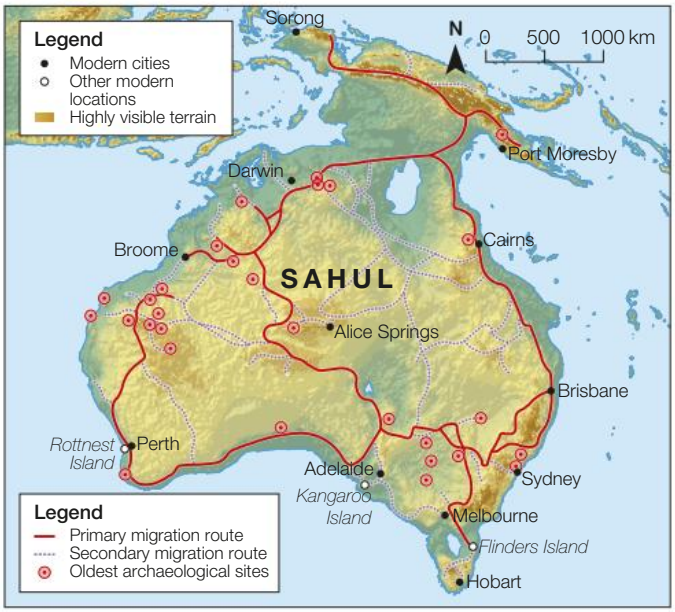
An **Ice Age** began about 30 000 years ago, cooling the climate, freezing seawater and lowering the sea level. Average temperatures across Australia decreased by 10°C, rainfall decreased and cold, dry winds blew across the continent. As a result, forest and plant habitats disappeared, forcing the extinction of animals. At its maximum about 21 000 years ago, Ice Age conditions led First Nations Peoples to abandon up to 80 per cent of the Australian continent and move to more habitable areas with water, such as river valleys.

About 12 000 years ago, the temperatures rose and the ice melted, leading to rising sea levels. Land bridges connecting both New Guinea and Lutruwita (Tasmania) were submerged, creating Torres Strait and Bass Strait. First Nations communities became isolated on islands and cut off from the mainland.

Interpretations of the events during and after the Ice Age are passed down through the oral traditions of First Nations Peoples, including a creation story that explains the creation of Kangaroo Island and Pages Islands at the end of the Ice Age (Source 1).

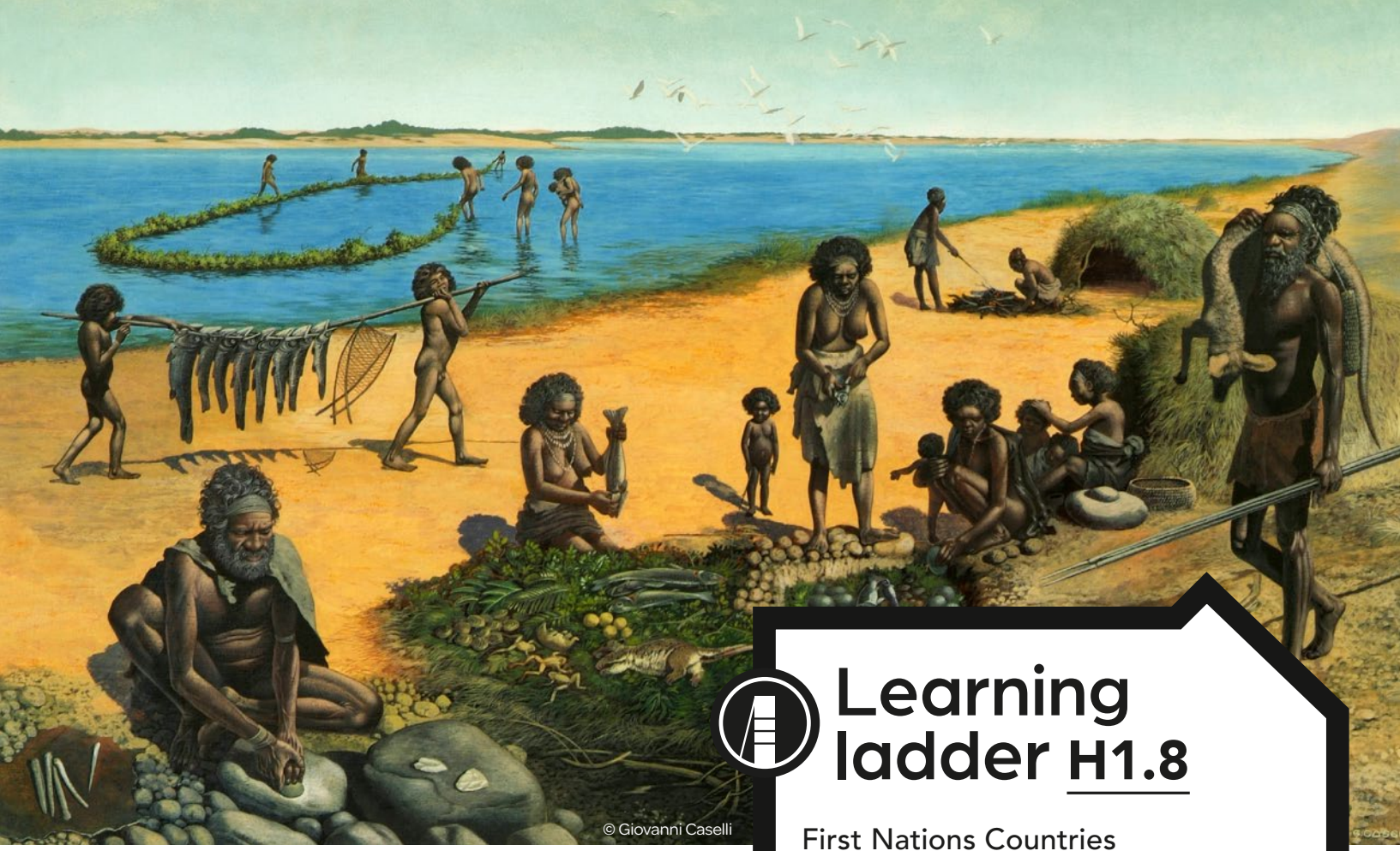
Source 1: A Ngarrinjdjeri creation story explains how rising sea levels separated Karta Pintingga (Kangaroo Island) from the mainland, leading to its depopulation, as well as important information about relationship responsibilities.

Migration through the mega continent of Sahul 50 000 years ago



Source: Matilda Education Australia

Source 2: Sahul was a mega continent that joined Australia to New Guinea. Humans first inhabited Sahul between 45 000 and 60 000 years ago, and it is thought that they spread through the continent via the superhighways shown on this map. Researchers created a virtual person packed with 10 kilograms of tools and water and simulated billions of walks across Sahul as it might have looked 50 000 years ago. They found that the same paths turned up time and time again, and that these 'superhighways' line up with the oldest archaeological sites on the continent.



Source 3: Lake Mungo in south-western New South Wales has been a dry lake for 10 000 years. About 50 000 years ago it was full of water, but the water disappeared at the end of the last Ice Age. Artefacts found at Lake Mungo help show how Paakantji, Mutthi Mutthi and Ngyimpaa people lived before the region became arid. [This artist's impression is by artist and archaeologist Giovanni Caselli (1974), from his book, *Lake Mungo People*]

Australia becomes drier

Another challenge faced by First Nations Peoples was the drying of the Australian continent. During the cold and dry conditions of the Ice Age, sand dunes expanded over much of the dry interior of the continent. The climate changed to warm and dry at the end of the Ice Age and inland lakes disappeared or became dry in summer.

Surface water became scarce and larger animals were now only found in regions with a more reliable water supply in eastern Australia. Lake Mungo, which had once held a huge volume of water, became completely dry about 10 000 years ago.

Archaeological evidence shows that Paakantji, Mutthi Mutthi and Ngyimpaa people adapted to **climate change** by returning to the Lake Mungo and Willandra Lakes region when water was available and migrating to better watered areas in other seasons. These First Nations Peoples showed a deep understanding of their Country and its changing environment.

Learning ladder H1.8

First Nations Countries

1. As the Australian continent dried out during the last Ice Age, where did many First Nations Peoples move to?
2. Identify how First Nations people changed their engagement with Lake Mungo when it began to dry out.
3. Describe how the knowledge of the changing climate has been shared with generations of First Nations people. How would this help the new generations care for Country?
4. Explain why Lake Mungo should be conserved and studied.
5. What happened to the larger animals during the last Ice Age? Analyse the consequences for First Nations people.

Sources

1. Source 1: Identify the origin of this source.
2. Source 3: Describe three activities shown in this source.
3. Source 1: Explain the events of the Ngarrinjdjeri creation story.
4. Source 2: What does this source tell us about the migration of people across Sahul?
5. Source 3: Evaluate the usefulness of this source for helping us understand how First Nations people lived at Lake Mungo.

HOW TO

Sources, page 191

How did First Nations people adapt to climate change?

The climate has changed constantly since the Earth formed many billions of years ago. It is thought that these cycles have been caused by volcanic activity, natural changes in the Sun, changes in Earth's orbit, and changing amounts of carbon dioxide and other greenhouse gases in the atmosphere. Over the hundreds of millions of years that life has existed on Earth, the climate has heated and cooled many times.

Managing Country in times of drought

Recent research from ice cores has shown that around 800 years ago the continent of Australia experienced a continental mega-drought that lasted 39 years. This was characterised by a significant drop in annual rainfall and subsequent impact on the entire ecosystem. First Nations people responded in different ways to their Countries' climates and the impacts of the drought on the landscape.

One way of managing Country during drought was to become more mobile. This was often misunderstood by European colonists as First Nations people being 'hunter-gatherers' or 'nomadic'. This assumption was incorrect because the term 'hunter-gatherer' implies that First Nations people found food and water by chance. The term 'nomadic' is incorrect because it implies that First Nations people were moving across Country without purpose.

Source 1: This is an image of a fire which has been lit to help care for Country. Note that the flames have remained low to prevent the trees from being damaged while clearing the undergrowth to reduce the risk of future fires. This is a technique that has been used across the Australian continent for tens of thousands of years and was crucial during periods of drought.

▲ **Source 2:** The New South Wales state government has recognised the need to incorporate ancient First Nations technology into the Murray–Darling river system. This is an image of new rock weirs that have been constructed to maintain more water in the riverine system to support the native fish stocks and the health of the surrounding land.

First Nations people practised complex agricultural processes. Through these practices, knowledge of Country was gained. This knowledge included an understanding of the climate and seasonal cycles, the reproductive cycles of plants and animals, and how different parts of the biome interacted. It also meant that plants were cultivated in specific places to produce abundant food and promote the harvesting of herbivorous marsupials. First Nations people always had abundant food near to where they were living because they knew when to move with the seasons to places on Country where food could be easily harvested.

Managing the fire risk

With the mega-drought came the increased risk of bushfire. First Nations people managed this risk in a variety of ways. One way was to ensure that when it did rain, the water fell onto Country, rather than running off into the riverine systems. They created earthen and rock barriers within and near rivers to slow run-off and allow the water to be absorbed into the land.

Another way to manage the fire risk was to conduct cold burns through the undergrowth of wooded or open areas. This was done only during favourable weather when the fire could be easily managed. The result was that the fire would burn 'cold', meaning that as it passed over the ground it would not heat up too much, and this would protect the soil and insect health.

These small fires also burned off much of the risky undergrowth and prevented the flames from catching the crowns of the trees and potentially killing the plants. The fires would also be lit in a specific pattern to allow any animals in the area to have a safe area to move to, so they did not get harmed. By doing this, the chances of a terrible fire were greatly reduced during times of drought and the new undergrowth ensured that the important herbivorous marsupials also had food to eat.

Learning ladder H1.9

First Nations Countries

1. Before colonisation, what kind of structure would be commonly found in river systems to support water in the landscape?
2. Source 2: What advantages will come from the rebuilding of the stone weirs in the river system?
3. Describe how First Nations people have cared for Country with cold burns.
4. Explain why it is important for First Nations knowledges to be used in the contemporary landscape in Australia.
5. Analyse the responses of First Nations people to periods of drought.

Causes and consequences

1. Identify what happens to water in the landscape during times of drought.
2. Describe how the last mega-drought changed how First Nations people cared for Country.
3. Explain the consequences of First Nations people's management of the water in the riverine systems.
4. Explain how different techniques allowed First Nations people to care for Country during times of drought.

HOW TO

Causes and consequences, page 196

H1.10

How are First Nations Peoples connected to Country?

The deep relationship between First Nations Peoples and the land is often described as connection to Country. Dhanggal Gurruwiwi, a Galpu Elder, explains, 'The land and the people are one, 'cause the land is also related. In our kinship system, as a custodian I'm the child of that land.'

Deep links to Country

First Nations Peoples have a deep spiritual, physical, social and cultural connection to the land that is often described as **connection to Country**.

Palyku woman Ambelin Kwaymullina explains, 'For Aboriginal Peoples, Country is much more than a **place**. Rock, tree, river, hill, animal, human – all were formed of the same substance by the ancestors who continue to live in land, water, sky. Country is filled with relations speaking language and following Law, no matter whether the shape of that relation is human, rock, crow, wattle. Country is loved, needed and cared for, and Country loves, needs and cares for her peoples in turn. Country is family, culture, identity. Country is self.'

Source 1: John Watson, a Traditional Custodian and Nyikina Elder, tells his grandchildren stories about his Country in the Kimberley area. Elders have the authority to share knowledge of the Dreaming, which establishes the rules for Aboriginal Peoples' relationships with the land and living things.

Source 2: Manja Shelter at Gariwerd in Victoria contains rock art of hand stencils. It is believed that the stencils record a visit to the site and renew a person's ties to it.

Uluru

One of Australia's most famous tourist attractions is the rock Uluru. However, it is more than just a rock to the Yankunytjatjara and Pitjantjatjara People, who are the **Traditional Custodians** of the Uluru-Kata Tjuta National Park. The spirits of their ancestors still live in sacred places at Uluru and Kata Tjuta, making the land deeply important to them.

The Yankunytjatjara and Pitjantjatjara Peoples have a duty to respect and look after their Country. Bob Randall, a Yankunytjatjara **Elder**, explains, 'Part of land which has been handed down to you by your ancestors, we say the Granny Law, has given me my responsibility now that I'm grown up to care for my Country, you know, care for my mother. Care for everything that is around me.

'You can never feel lonely in that situation, you know you just can't. How can you when all around you is family members, from this ground up, to all the trees around you to the clouds hanging up around you, the birds flying by, the animals and reptiles that are just hidden in the shrub there for now, but can come out if they want to, hunt around for their little food? And then they can become food for us as well.'

Learning ladder H1.10

First Nations Countries

1. Source 2: Why do First Nations Peoples stencil their handprints on rocks?
2. What are two different meanings of the word 'Country'?
3. In your own words, describe how First Nations Peoples feel about the land.
4. Source 1: Explain how Elders help continue a connection to Country throughout generations.

Causes and consequences

1. What is 'Granny Law'?
2. Source 2: Describe the practice that has been continuously performed at the cave at Gariwerd.
3. Explain why it has been important for people to care for Country for many generations.
4. How does teaching young people about caring for Country help to maintain the environment?
5. Evaluate how caring for Country has contributed to First Nations cultures being the oldest continuous cultures in the world.

HOW TO

Causes and consequences, page 196

H1.11

What is considered sacred for many First Nations people?

Many First Nations people connect to Ancestor Spirits through stories, ceremonies, totems, dance and art, and through all the features and living things on Country.

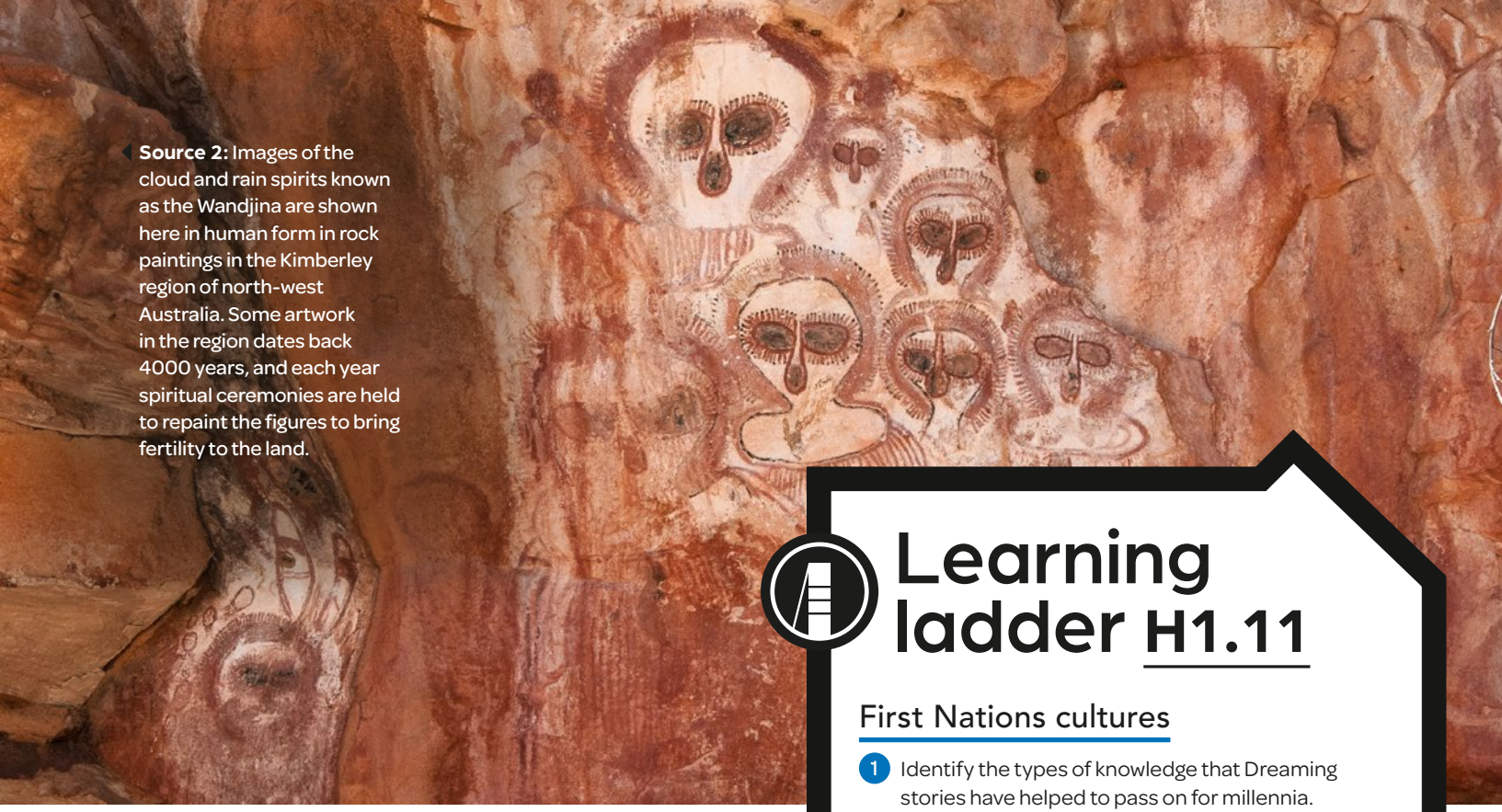
First Nations spirituality

Many First Nations people refer to spirituality rather than religion to help describe **beliefs**. Spirituality gives meaning to all aspects of life and the close relationship with Country. Everything in the environment is living and shares the Dreaming with First Nations Peoples.

It is not possible to speak of one First Nations belief system, as there are many. A common theme running through the spirituality for many First Nations people is a sense of belonging to Country, the influence of the Ancestors, and the relationships, responsibilities and obligations to each other.

First Nations people's use the of the word Country refers to the physical and spiritual features of the land.

Source 1: Spiritual knowledge is expressed and passed on through ceremonies, stories, songs, art, music and dance.



Source 2: Images of the cloud and rain spirits known as the Wandjina are shown here in human form in rock paintings in the Kimberley region of north-west Australia. Some artwork in the region dates back 4000 years, and each year spiritual ceremonies are held to repaint the figures to bring fertility to the land.

The Dreaming

The Dreaming gives meaning to everything and establishes the rules for relationships between people, Country and all living things for many First Nations people. The Dreaming tells about the creation of the world by Ancestor Spirits who came from the Earth and sky to create and shape landforms and all life.

Customary law

The Dreaming also gave First Nations Peoples 'the Law', to ensure each person knows their responsibilities for other people, Country and the Ancestors. First Nations laws are referred to as **customary law**. Like other Australian laws, if you break customary laws, you will be punished.

Oral tradition

Spiritual knowledge is passed on through many different ways. One important way is through artworks. These can include rock paintings, carved petroglyphs, and images carved or etched into wood, bark and animal skins. Additionally, much spiritual knowledge is shared orally through song, story and dance. It is also common for important scientific, philosophical and moral knowledge to be shared in these ways. Aboriginal and Torres Strait Islander Elders are respected and trusted to pass important information on to young people. Despite the disruption to culture caused by the invasion, many groups have preserved their cultures thanks to their resilience.

Learning ladder H1.11

First Nations cultures

1. Identify the types of knowledge that Dreaming stories have helped to pass on for millennia.
2. Where are the images of the Wandjina located?
3. Describe the relevance of Dreaming stories to everyday life.
4. Explain the significance of ceremonies, stories, songs, art, music and dance for teaching culture.
5. Analyse the importance of customary law.

Significance

1. Identify the significance for First Nations people of connecting to the Ancestors.
2. Source 2: Describe the significance of the Wandjina images to Wanjina Wunggurr Peoples in the Kimberley region today.
3. Read the section on Significance in the History How-To section on page 202. Then copy and complete this table about Aboriginal customary law.

Question about significance	Response (and reason why)
How important was it to people at the time?	
How deeply were their lives affected?	
How many lives were affected?	
How long were their lives affected for?	
How important is customary law today?	

4. Explain why Aboriginal customary law is important today.

HOW TO Significance, page 202

What do some First Nations families look like?

'Kinship' is another word for family relationships, and it is these relationships that are central to individual and community wellbeing in First Nations communities. The kinship system ensures that everyone knows their relationships and shared responsibilities to care for the community and Country.

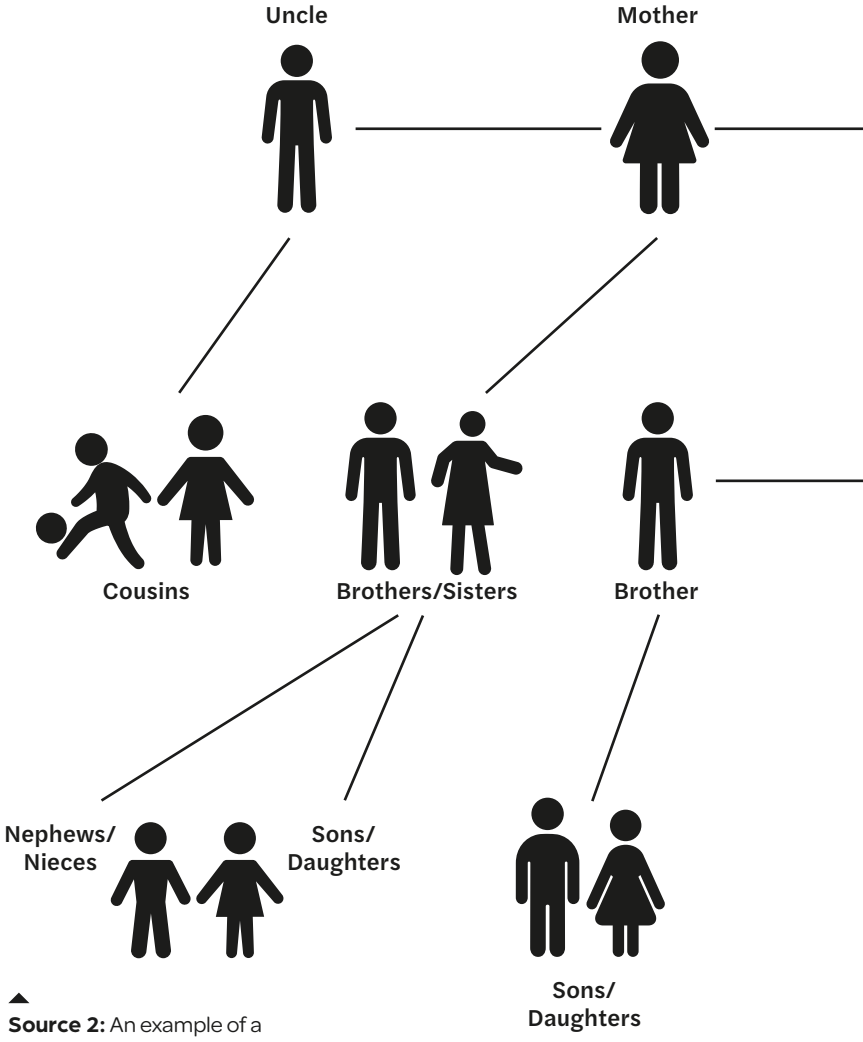
The kinship system

Many First Nations families have extended **kinship** relationships that are important to sharing culture, organising society and ensuring everyone has a home, enough to eat and shared wealth to feel safe and secure. This is referred to as the kinship system. Wadjularbinna Doomadgee, a Gungalidda Elder, explains:

> All people with the same skin grouping as my mother are my mothers ... They have the right, the same as my mother, to watch over me, to control what I'm doing, to make sure that I do the right thing. It's an extended family thing ... It's a wonderful secure system.
>
> **Source 1:** Wadjularbinna Doomadgee, a Gungalidda Elder, quoted in exhibition, Australian Museum, 2018

The kinship system organises communities to make sure everyone knows their relationships and shared responsibilities. While kinship rules vary across the different First Nations communities, caring for the community as a family is always very important. Kinship remains important for many First Nations people today.

Children could have a close relationship with relatives other than their mother and father. For example, your mother's sister was also called *mother*, and your father's brothers were also called *father*. This means that they also have responsibility for you just like your biological parents.



Source 2: An example of a First Nations kinship system

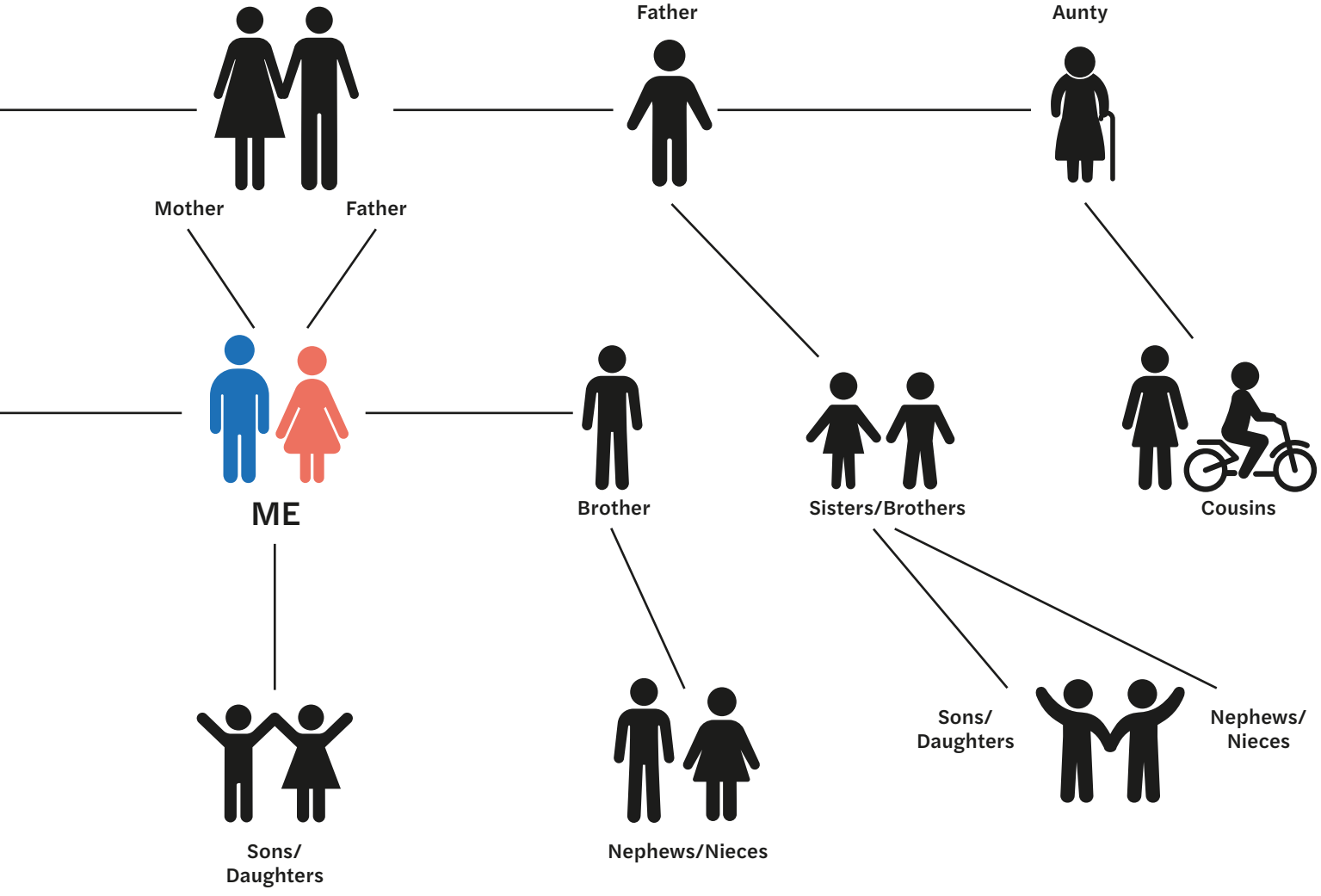
First Nations kinship systems

While kinship systems vary across cultures, Source 2 shows terms from one kinship system. Unlike Western kinship systems, where biological relationship is prioritised, in these kinship systems, the family relationship is prioritised. This provides additional expectations around the responsibilities that members within the kinship system have for one another.

Kinship terms

It is common for a person to be addressed by their kinship relationship in a First Nations community. A person is addressed by the appropriate relationship term, such as father, older sister, uncle and so on.

Mother	Your birth mother and your mother's sisters
Father	Your birth father and your father's brothers
Brother and sister	Term for siblings and the children of your mother's sister and father's brother
Aunty and uncle	Your father's sisters and mother's brothers and also used to address older people who you might not be related to, but who have responsibility for you
Cousin	Refers to children of your father's sister and your mother's brother. The term 'cousin' can be extended to any relative of your generation who might share the same great grandparent.



Moiety and totems

For some First Nations people, everyone and everything in the environment is split into two halves. This is called moiety. In order to understand the whole universe, the two halves must come together. A child's moiety is determined by their mother's or their father's moiety. In some First Nations cultures, people who share the same moiety are considered siblings and are forbidden to marry. (In some First Nations cultures, kinship terms, or skin names, can also determine who you are able to marry.)

Each person has **totems** that represent their nation, **clan** and family group, as well as a personal totem. Totems link a person to Country – its landforms, air, water and living organisms. Every First Nations person has a responsibility to care for their totems and pass them on to following generations.

Two important totems of the Kulin Nations are Bunjil the Eagle and Waa the Crow. In some First Nations laws, there were important restrictions on whom could marry. This meant that the moiety, totem and skin name you had would inform who you could have a relationship with. This ensured that there was enough social distance to reduce instances of conflict over broken hearts and enough genetic distance to ensure the genetic health of subsequent generations.

Elders

Another important connection point within First Nations communities is an Elder. A person becomes an Elder by earning respect and authority in a community. It is an Elder's duty to instil a respect for Country and culture in community members by teaching young people about their obligations and responsibilities to Country and the science of how to care for it. It is also an Elder's duty to share knowledge about the Dreaming.

Elders take a lead role in **initiation ceremonies**. With some variation across cultures, initiation ceremonies take place when girls and boys who have proved they are ready to be adults are given the right to pass from childhood to adulthood. In some initiation ceremonies, an indication of passing into adulthood could sometimes include a form of body modification. The nature of this would vary between cultures and would often be an easily identifiable part of a person's appearance.

Source 3: This is an image of young people being taught how to use a fishing spear. The spear is usually thrown from a boat or the shore and is used to catch a variety of marine life for food. The educational techniques being used to share this important information are many tens of thousands of years old.

Source 4: A young boy and his father wearing ochre

Learning ladder H1.12

First Nations communities

1. What is the responsibility of an Elder?
2. In some First Nations cultures, what rights does your mother's sister have over you?
3. Describe the kinds of things that can be totems.
4. Compare your own family tree to the Aboriginal kinship system. You may also consider close family friends who you refer to as 'aunty' or 'uncle'.
5. Explain how the Aboriginal kinship system would be useful in family life.

Continuity and change

1. Source 4: What might the young person be learning about?
2. Describe what is the same and what is different about kinship across First Nations and non-First Nations cultures.
3. Explain how many First Nations communities' model of kinship – with strong extended family relationships – helps with the continuation of culture across different generations of a family.
4. Explain why Elders are important in the continuation of First Nations cultures.

HOW TO Continuity and change, page 193

Who are the Kulin Nations?

The Australian continent has always been one of the most multicultural places in the world. Prior to colonisation, there were more than 250 different languages with more than 500 different dialects spoken across the continent and adjacent islands. Each language has always represented a different culture.

International relationships

One of the reasons why First Nations cultures are the oldest continuous cultures in the world is the way in which international relationships were conducted for tens of thousands of years. Maintaining peaceful and positive relationships with neighbouring nations ensured that people were looked after and that Country was cared for, especially since river systems stretched across many different nations, and birds, animals and insects often moved between different nations.

Neighbouring groups would often meet for ceremonies, marriages, funerals and celebrations, and these events would help to create, maintain and renew important family and community relationships. These gatherings were supported by people who could speak multiple neighbouring languages, which were sometimes closely related, and who often had family living in the other nations. Over time, these relationships would grow into broader regional and international connections.

The Kulin Nations

One example of this kind of connection is the collective group known as the Kulin Nations. The word 'Kulin', which is shared by the five different languages, translates as 'person'. The Kulin Nations' territory is located around Naarm (Melbourne) and central Victoria. It stretches from the Bass Strait in the south, to Wilson's Promontory (which is shared with the Gunai Kurnai Nation) in the east, to a little further west of Djilang (Geelong) in the west and north to the Great Dividing Range. The Kulin Nations consist of the nations of the Wurundjeri people, the Boon Wurrung people, the Dja Dja Wurrung people, the Taungurung people and the Wadawurrung people.

What helped the Kulin Nations to join together was the similarity of their languages – they share many of the same words. This made it easier to communicate and engage in negotiation and diplomacy. In addition, the five Kulin Nations also share similar Dreaming stories and spirituality. This meant that when the nations gathered, there were common points of reference, which supported good relations.

Tanderrum

The Tanderrum ceremony is one that has been practised in the same way for many thousands of years. It has always been one of the more important ceremonies for the Kulin Nations, especially when all would travel to Naarm (Melbourne). Part of this important ceremony would involve the burning of a blend of leaves from the Muyan (wattle), Ballee (cherry ballart) and Biel (river red gum). The smoke from the fire would cleanse Country and the people at Tanderrum, and would also help to send prayers to Bundjil, the Creator Spirit of the Kulin Nations.

The Kulin Nations

Source: Matilda Education Australia

Source 1: The Countries of the Kulin Nations of Victoria

Source 2: This is an image of a recent Tanderrum ceremony. Dancing, singing and sharing stories have been an important part of Tanderrum for many thousands of years and played a key role in helping to maintain the diplomatic relationships within the Kulin Nations.

As part of the smoking ceremony, gifts would usually be exchanged to reinforce pre-existing relationships. It also reminded the people of the visiting nations that they were welcome to access and take from Country only what they needed and were expected to follow the laws of Country, which included not harming Country or the people who lived there.

Once the formalities were concluded, the business of coming together could begin. This would involve resolving disputes, organising marriages, celebrating births within the communities and mourning the deaths of influential leaders. There was much feasting, singing, dancing and storytelling. This ensured that important relationships would be renewed until the next Tanderrum.

This ceremony remained largely unchanged until Europeans colonised Victoria in 1835. Shortly after the colonists arrived, they banned this important practice and forced many Kulin people onto missions and reserves located around the illegally seized colony. In 2013, the Tanderrum ceremony was revived and it has been held at the current site of Federation Square in Naarm (Melbourne) ever since. An outcome has been that Kulin connections are being strengthened, which is allowing important information to be shared and cultural practices to be revived.

Learning ladder H1.13

First Nations communities

1. What is the Creator Spirit common to all the Kulin Nations?
2. What kinds of activities happen at Tanderrum?
3. Describe how the Kulin Nations share knowledge at Tanderrum.
4. Explain the importance of Tanderrum being revived for the Kulin Nations.
5. How are the various Kulin Nations welcomed to Tanderrum? Why are the leaves of the plants burned?

Significance

1. Identify how the coming together of the Kulin Nations is significant for their caring for Country.
2. Describe the common characteristics of the Kulin Nations that support them working together.
3. Explain why Tanderrum was significant.
4. Source 1: Different rivers flow within the Kulin Nations. Why are these rivers significant to the Kulin Nations and how they care for Country?
5. Evaluate the significance of the Kulin Nations' diplomacy with each other.

HOW TO

Significance, page 202

Who are the Wurundjeri people?

The clans of the Wurundjeri people have lived around the area we know as Naarm (Melbourne) for at least 31 000 years. Wurundjeri Country has always been special, as it provided all the resources needed to live long and healthy lives.

Early evidence of Wurundjeri people

A skull of an early man estimated to be up to 15 000 years old was discovered on Wurundjeri Country at Keilor in 1940, and removed to the Museum of Victoria. The discovery led to further archaeological digs that revealed 31 000-year-old fireplaces and the remains of megafauna, making Keilor one of Australia's earliest recorded sites of human habitation.

The Keilor archaeological site was renamed Murrup Tamboore, meaning 'Spirit's waterhole' in Woi Wurrung, the Wurundjeri people's language. Years later, the skull was returned to its Country.

Wurundjeri people

The Wurundjeri people from the Woi Wurrung language group lived across the Yarra Valley, including the northern half of what we now know as the Melbourne metropolitan area. The Wurundjeri are part of the Kulin Nations, an alliance of five language groups.

In Woi Wurrung, wurun means the manna gum that is common along the Yarra River, and djeri is the witchetty grub that is found in or near the tree.

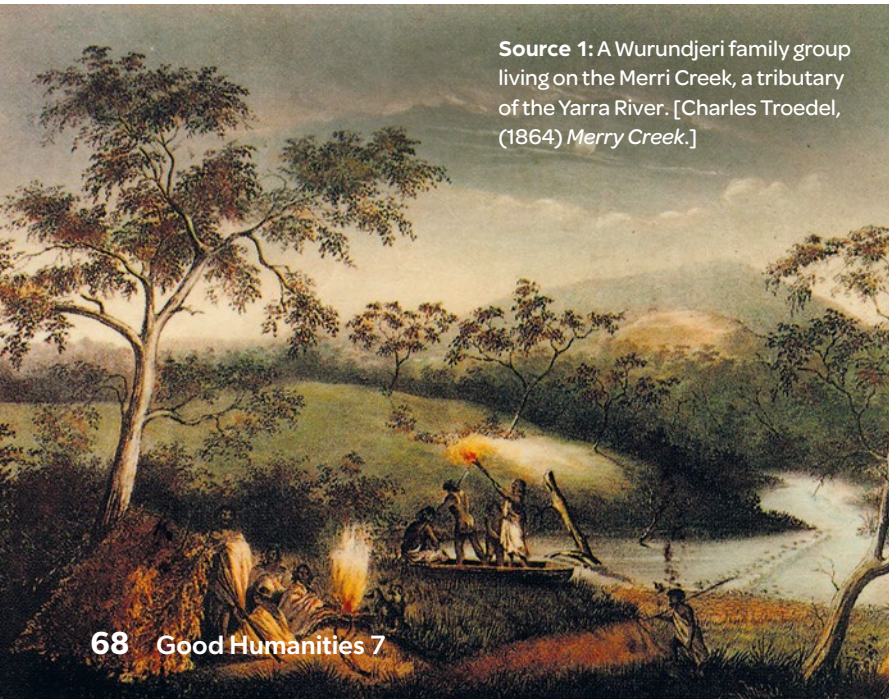
The Wurundjeri people have always owned Country, and Country has always owned the Wurundjeri people. It has always been a reciprocal relationship. The people travelled in smaller groups called clans and lived in different areas within clan territories depending on the seasonal cycle of food production and the replenishment of Country. People would not marry within their own clan, but were paired with partners from different Kulin clans.

Caring for Country

Wurundjeri people adapted to changes in the environment through the long occupation of the Yarra Valley. The Yarra River once flowed across a grassy plain, but that plain flooded at the end of the last Ice Age, about 12 000 years ago, and became a bay.

The Wurundjeri people adjusted their lifestyle to adapt to the weather extremes of their new environment: hot, dry summers and cold winters. Some clans and family groups would live in caves on higher land in colder months and keep warm with cloaks and rugs made from possum skins. As the land warmed after the coldest months, the people moved to cultivate and harvest animals and plants. In the hottest months, they lived for longer periods along rivers, where they fished for trout and eels, among other native species.

The people took only what was needed to care for Country and ensure sustainable harvesting and cultivation for future generations. Each family group cultivated and sourced food in a particular section of the clan's land. Firestick farming was used to promote the growth of new grass to attract game such as kangaroos. Burning grasslands also reduced the risk of bushfires and made travel and access easier. Women used wulunj (digging sticks) to cultivate murnong (yams) in the cleared land.



Source 1: A Wurundjeri family group living on the Merri Creek, a tributary of the Yarra River. [Charles Troedel, (1864) *Merry Creek*.]

Connection to Country

When travelling throughout Country, the Wurundjeri people would visit sacred sites. Sacred sites are usually marked by natural features such as hills, rivers or rock formations. Some sacred sites are only for men and other sites only for women. Examples of places that are significant to the Wurundjeri people include:

- Ngannelong (Hanging Rock): a place where male initiation ceremonies were held
- Melbourne Cricket Ground: the site of the MCG was a natural amphitheatre and a place for ceremonies and gatherings
- Dights Falls: a meeting place on the Yarra River at Abbotsford for ceremony, trade and settling disputes.

The Wurundjeri people share the same belief system as others in the Kulin Nations. It is held that Country and living creatures were created as part of the Dreaming. Stories of the Dreaming have been passed down from generation to generation.

Bunjil the wedge-tailed eagle is responsible for the creation of the landscape and all living things. Bunjil keeps a watchful eye over all people living on Wurundjeri Country and offers guidance to those who choose to listen.

Each clan has a totem that represents its people's spiritual link to the land. Totems for the Wurundjeri are Bunjil the wedge-tailed eagle and Waang the Crow. Within the Wurundjeri Nation you are either a crow person or an eagle person, and this totem is inherited from your father.

At first there was nothing but the stars in the sky at night. A star fell from the sky, and as it fell it formed into the body of a wedge-tailed eagle known as Bunjil.

Bunjil spread his wings as he fell and blew air from his beak to create the earth and all its features. Bunjil took clay from a riverbed and shaped it to form two men. He danced around the figures and blew air into their mouths to fill them with life.

Bunjil's brother, Pallian, controlled rivers, creeks and billabongs. He beat the water with his hands. It became thicker and took on the shape of two women. Bunjil provided each man with a spear and gave each woman a digging stick.

When Bunjil had finished creating the landscape and its living creatures, he insisted that Bellin-Bellin, the musk crow, open a bag filled with wind. One bag was not enough, so Bunjil demanded that Bellin-Bellin open all his bags. A huge rush of wind flowed from the bags, blowing Bunjil and his family high into the sky, where they became stars.

Source 2: Creation story: Bunjil the wedge-tailed eagle

Source 3: The 25-metre-high sculpture of Bunjil the wedge-tailed eagle on Wurundjeri Way in Melbourne

Learning ladder H1.14

First Nations communities

1. What are two of the totems of the Wurundjeri people?
2. Before colonisation, what was the current site of the MCG used for?
3. Describe the most common way that knowledge of Bunjil and Waang has been passed down through generations of Wurundjeri people.
4. Explain how the Wurundjeri people have responded to the sometimes extreme weather experienced on Wurundjeri Country.
5. Analyse the innovation that Wurundjeri people have been using to care for Country to increase game, reduce bushfires and make travelling easier. Why was this innovation so successful and important?

Sources

1. Source 1: Identify the origin of this source.
2. Source 2: Describe the creation story in this source.
3. Source 3: Based on your knowledge of Bunjil, explain why this 25-metre-high sculpture was built.
4. Source 1: Evaluate how this source helps to understand the past.

HOW TO Sources, page 191

What are some of the technological achievements of First Nations Peoples?

One of the reasons that Europeans were able to effectively colonise the Australian continent was their claim that First Nations people were primitive and had achieved very little. By making these claims, Europeans could justify removing First Nations people from Country and forcing them onto missions and reserves.

This was a carefully created and maintained lie. More recent research has discovered that First Nations people have always been focused on science and technology. Many 'firsts' were developed across the Australian continent and the adjacent islands.

The first scientists

When the first people arrived on the continent of Sahul it probably seemed like a unique place. This was because the continent had been separated for many millions of years, which led to the evolution of unique species of plants and animals. Understanding these organisms would have been challenging.

The people would have applied the basic principles of the scientific method to understand their new environment. The scientific method involves observing and questioning; considering previous knowledge; forming a hypothesis; testing the hypothesis with an experiment; analysing the outcome; and considering conclusions.

By following this process, the people could determine which plants and animals were edible and which were not; the life and reproduction cycles of organisms; and the best ways to manage the land and waterscapes to ensure that the organisms could be maintained effectively. Many of these organisms have become totems for many First Nations people. The Dreaming stories about totems often contain important scientific knowledge.

The first bakers

It is now understood that First Nations people were the world's first bakers. Grinding stones at least 30 000 years old have been found and excavated. This evidence is 10 000 years older than baking evidence found in other places around the world. Grinding stones were used to break down the hard seed-husks covering native grains. Once this process was completed, the grains would be separated and further ground into a fine flour. This was then mixed with other ingredients and baked to produce bread.

First Nations people used complex cultivation techniques to domesticate native grains to produce larger seeds and ensure a constant supply. They also preserved the seeds in earthen granaries to ensure a year-round supply.

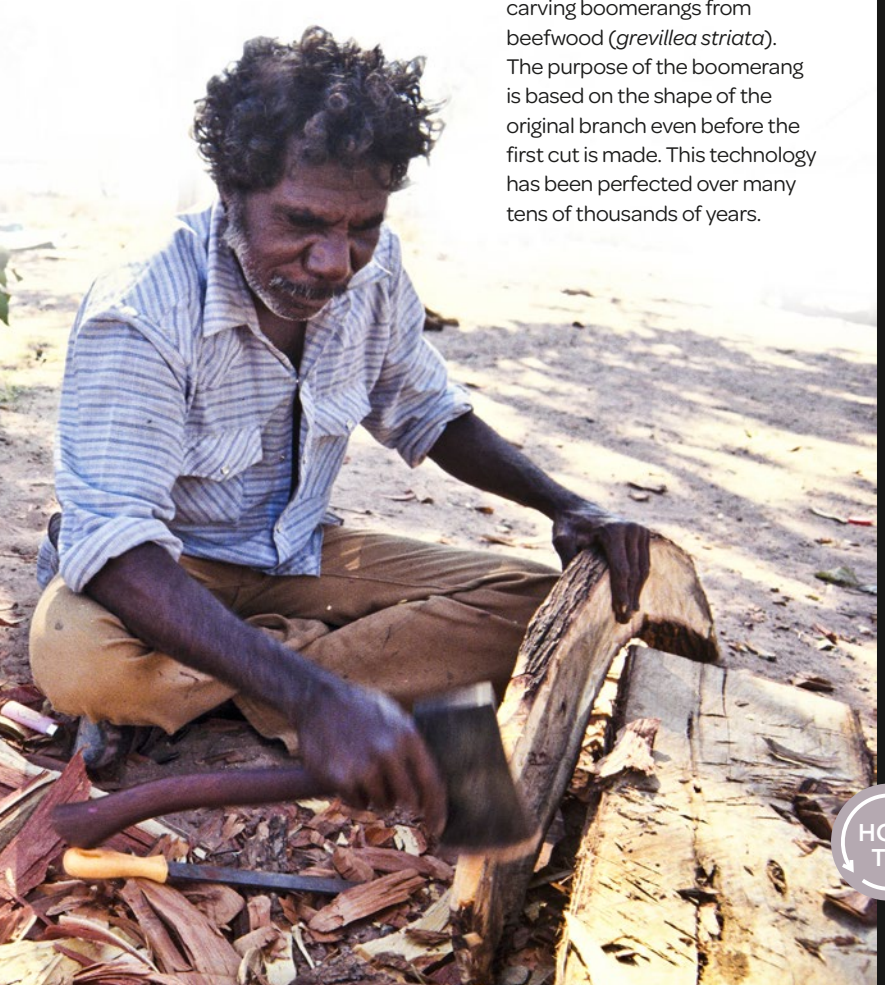
The first aeronautical engineers

The boomerang is a well-known tool used by First Nations people for a variety of purposes. Boomerangs were used for hunting (striking and non-striking boomerangs), for warfare and as digging tools. Some were used as musical instruments and not made to be thrown.

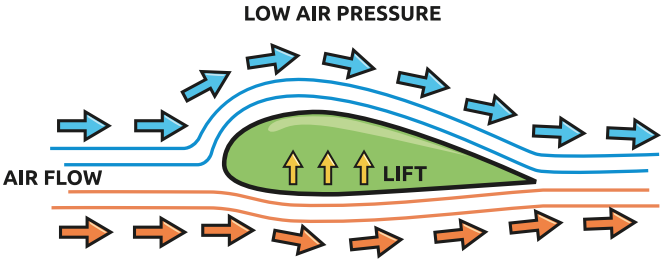
The oldest example of a boomerang from Australia is 10 000 years old, but there is also rock art depicting boomerangs that is at least 20 000 years old. One of the more advanced designs is the non-striking hunting boomerang, also known as a returning boomerang.

The returning boomerang was commonly used to harvest birds that gathered around bodies of water. The boomerang would be thrown into the air over the water to simulate both the movement and sound of a bird of prey. The waterfowl would then fly into the air and other hunters would throw missiles, such as sticks and stones, to strike the birds from the air. The boomerang would then return to the original thrower.

What made this type of boomerang return was the scientific application of Bernoulli's principle. This principle states that the faster air moves over a surface, the lower its pressure. This means that, like contemporary aeroplane wings, the boomerang was shaped in such a way that the different air pressures under and over the boomerang meant it would return to the thrower. The science behind this type of boomerang would not be matched in Europe until the Renaissance period, at least 21 000 years later.



Source 1: Two Yolŋu men carving boomerangs from beefwood (*grevillea striata*). The purpose of the boomerang is based on the shape of the original branch even before the first cut is made. This technology has been perfected over many tens of thousands of years.



Source 2: This diagram shows Bernoulli's principle. In this case, the shape of the top of the wing forces the air to travel further than the air going under. This means that it must move faster and this creates a force known as lift to keep the wing in the air.

Learning ladder H1.15

First Nations communities

1. Identify the important information that is often included in Dreaming stories about totems.
2. Why was it important to apply scientific principles to observe the newly inhabited continent?
3. Source 1: Why do you think it is important for the boomerangs to be carved in the shape of the branch?
4. Explain why it was important for First Nations people to domesticate native grains.
5. How many different uses are there for boomerangs? Analyse why these different uses are so important.

Significance

1. Identify the historical significance of the discovery of grinding stones.
2. Describe the evidence that proves who the first bakers were.
3. Explain what European colonists thought First Nations people were like. Why was this incorrect?
4. Explain why First Nations people have been described as the first aeronautical engineers.
5. Evaluate the significance of the invention of the returning boomerang.

HOW TO Significance, page 202

How do I conduct a good inquiry?

Now that you've finished the chapter, it's time to conduct your own historical inquiry on Deep Time history of First Nations Australians. Throughout the chapter you have developed knowledge and understanding of the ancient past on the continents of Sahul and Australia. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own historical inquiry!

A historical inquiry gives you the opportunity to be an active historian: forming questions, interrogating sources and communicating insights about the past on a topic of your choice.

The chapter has covered the First Nations cultures, communities and Countries. What would you like to know more about?

- Dehumanisation in Australia, page 38
- The Dreaming, page 44
- The oldest cultures in the world, page 48
- Pre-colonial life, page 52
- Connection to Country, page 58

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas. Once you have worked through this process, you are ready to start the historical inquiry.

Refer to pages 208–213 of the How-to chapter for a step-by-step guide to this process.

See

What do you see?
Who is involved?
What are the key features?
When and where was this happening?

Think

What do you think about that?
How do you think people were affected at the time?
How is this similar to or different from today?
How do we know?

Wonder

What did different groups think about this?
Why is this important to know?
What does it make you wonder?

Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to expand your knowledge and attempt new skills.
When planning your inquiry, consider how the experiences and perspectives of individuals and groups shaped societies, beliefs and events in the past. Think about how the past has had an impact on the present. Use the How-to chapter to support your planning and research.

Ancient societies
(10 000 BCE – 600 CE)

Ancient Egypt

H2

HOW DID THE NILE RIVER SUSTAIN LIFE? 78

WHO WAS RAMSES II? 84

WHAT HAVE WE LEARNED FROM THE TOMB OF TUTANKHAMUN? 96

HOW WERE THE PYRAMIDS CONSTRUCTED? 98

How can I understand ancient Egypt?

Ancient Egyptian ideas are all around us. We can see these ideas in mathematics, astronomy, science, medicine, in glorious monuments and in modern religions.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Background and origins	Significant people, ideas and events	Impact and legacies	Continuity and change	Causes and consequences
5	I can evaluate the impact of the rise and fall of societies.	I can evaluate how societies were influenced by significant people and ideas.	I can evaluate the legacy of a society.	I can evaluate patterns of continuity and/or change.	I can analyse causes and consequences.
4	I can explain why a society developed.	I can explain why ideas influenced people and events.	I can explain why a society has a legacy.	I can explain patterns of continuity and/or change.	I can explain why something was caused or why it led to certain consequences.
3	I can explain how a society developed.	I can explain how ideas influenced people and events.	I can explain the impact of one society on another.	I can explain continuity and change.	I can explain how something was caused or its consequence.
2	I can describe the origins of societies.	I can describe key people, ideas and events.	I can describe the legacy of a society.	I can describe continuity and change.	I can describe causes and consequences.
1	I can identify the origins of societies.	I can identify key people, ideas and events.	I can identify the legacy of a society.	I can identify continuity and change.	I can identify a cause and a consequence.

Knowledge and understanding

Source 1: This is a fragment of a wall painting showing Queen Ahmose-Nefertari; the painting is in the Tomb of Kynebu in Thebes c. 1150 BCE.

I can evaluate historical perspectives.	I can evaluate historical significance.	I can evaluate the evidence supporting a historical interpretation.	I can explain change or causality from a timeline.	I can evaluate sources to determine their accuracy, usefulness and reliability.	5
I can compare perspectives.	I can explain why something is historically significant.	I can compare historical interpretations.	I can summarise the events on a timeline.	I can explain the historical context of a source.	4
I can explain a perspective.	I can explain something historically significant.	I can explain an interpretation of history.	I can follow timeline conventions.	I can apply historical knowledge to explain sources.	3
I can describe perspectives.	I can describe something historically significant.	I can describe an interpretation of history.	I can place events on a timeline chronologically.	I can describe a source.	2
I can identify the perspective of a person from the past.	I can identify something historically significant.	I can identify a historical debate.	I can read a timeline.	I can identify the origin of a source.	1
Perspectives	**Significance**	**Interpretations**	**Chronology**	**Sources**	Steps in skills progression

Historical concepts and skills

What can we learn from ancient Egypt?

Located in northern Africa along the banks of the Nile River, ancient Egypt grew to become a powerful society. Ancient Egyptians were innovative: they developed systems of government, new ways to communicate, new building techniques and unique religious beliefs that drew from the natural world around them.

Ancient Egypt was one of the first ancient societies. It started around 3100 BCE and ended when the Romans defeated the Egyptian army in 30 BCE.

Ancient Egyptians built some of the largest monuments ever created by humans without modern technology. They were obsessed with death and with preparing for the **afterlife**. Indeed, the pyramids, including the Great Pyramid at Giza, were built as magnificent tombs for the rulers of ancient Egypt, known as pharaohs, to aid their journey to the afterlife.

Learning about a culture so different from our own gives us insights into human nature, and removes the limitations of our modern ways of thinking. If we want to learn from history, studying a civilisation that lasted for thousands of years, such as ancient Egypt, is essential.

Ancient Egypt in northern Africa

▲ **Source 2:** Ancient Egypt was located along the banks of the Nile River in the desert.

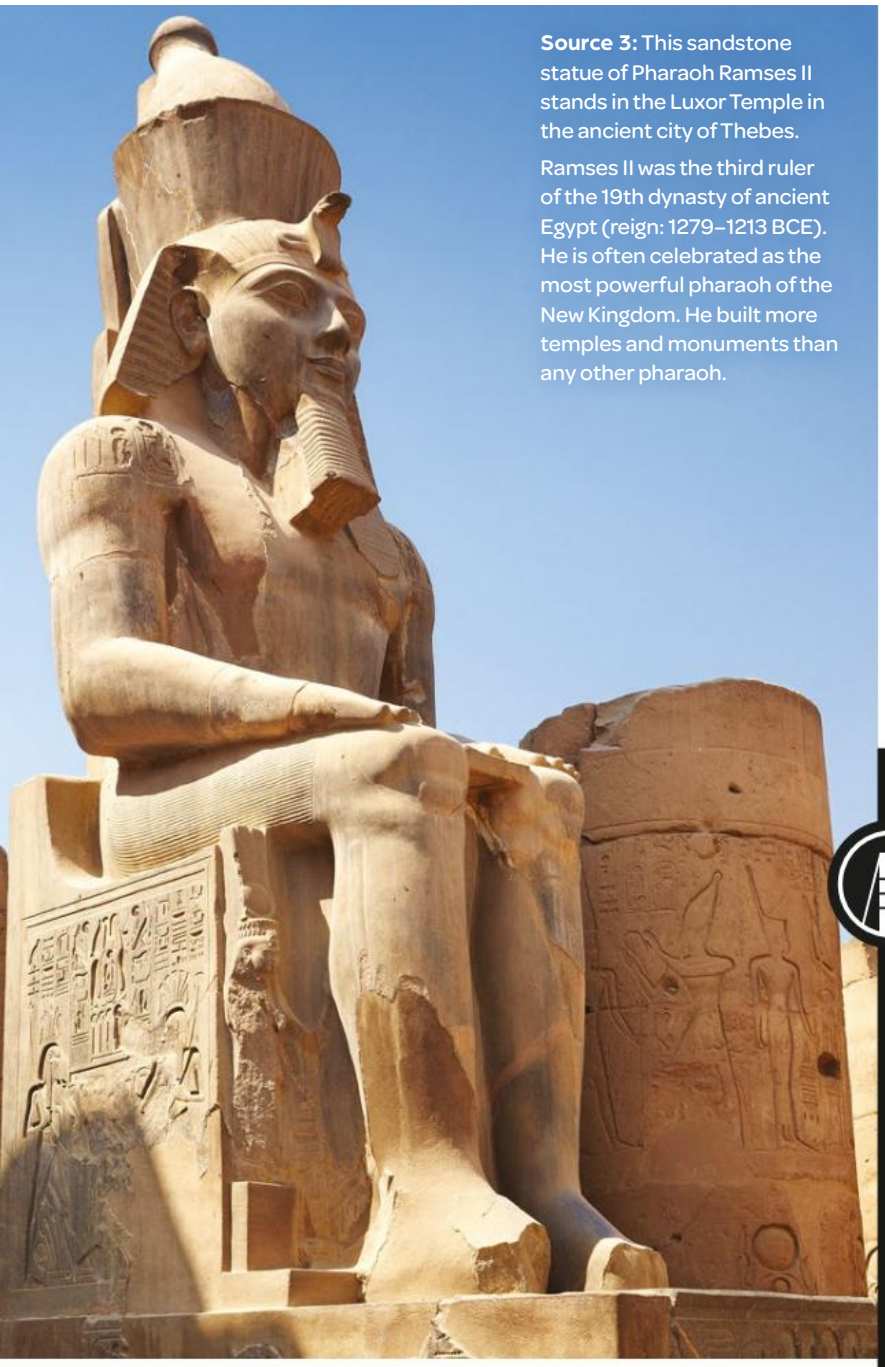
Source: Alamy and Peter Hermes Furian

Source 1: Ancient Egypt timeline ▼

Key ideas timeline

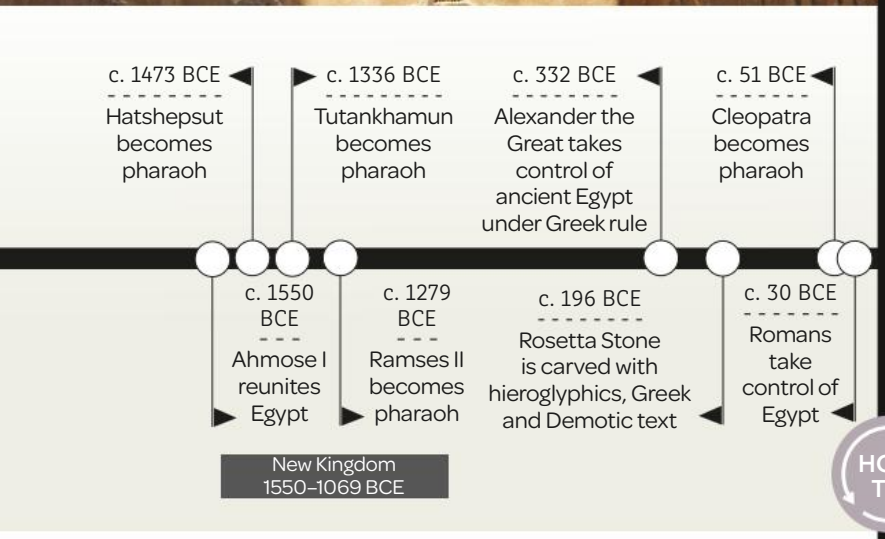
- **c. 6000 BCE** — Different groups of hunter-gatherers start settling in the valley of the Nile River and growing crops
- **c. 3500 BCE** — Papyrus sails are used on boats
- **c. 3100 BCE** — Menes unites Upper and Lower Egypt and establishes ancient Egypt's 1st dynasty
- **c. 3200 BCE** — Hieroglyphic script emerged
- **c. 2560 BCE** — Great Pyramid of Giza is built
- **c. 2550 BCE** — Papyrus made from paper is used for writing
- **c. 1968 BCE** — Mentuhotep II reunites north and south Egypt
- **c. 1650 BCE** — The Palestinian Hyksos dynasty rules parts of Egypt for nearly 100 years

Early Dynastic period 3100–2686 BCE | Old Kingdom 2686–2181 BCE | Middle Kingdom 2125–1650 BCE



Source 3: This sandstone statue of Pharaoh Ramses II stands in the Luxor Temple in the ancient city of Thebes.

Ramses II was the third ruler of the 19th dynasty of ancient Egypt (reign: 1279–1213 BCE). He is often celebrated as the most powerful pharaoh of the New Kingdom. He built more temples and monuments than any other pharaoh.



Main periods of ancient Egypt

Old Kingdom (c. 2686–2181 BCE)

The Old Kingdom was the period in which the pyramids were built. It was a time of prosperity and security. At the end of the Old Kingdom, ancient Egypt fell into decline and became divided.

Middle Kingdom (c. 2125–1650 BCE)

During the time of the Middle Kingdom, ancient Egypt was reunified and its power and culture were restored. Pharaohs kept large standing armies to defend the region.

The New Kingdom (1550–1069 BCE)

The New Kingdom was the most prosperous time in ancient Egypt. This period saw the greatest expansion of the ancient Egyptian empire.

Learning ladder H2.1

Background and origins

1. List the three main periods in ancient Egyptian history.
2. Source 3: Describe the period in which Pharaoh Ramses II lived.
3. Source 2: What does the source suggest about the importance of the Nile River to ancient Egypt?
4. Explain why ancient Egypt can be considered an innovative society.

Chronology

1. Source 1: Was the reign of Ramses II before or after that of Tutankhamun? Explain your answer.
2. List these events in order, from the oldest to the most recent event:

30 BCE	Romans take control of Egypt
3200 BCE	Hieroglyphic writing emerges
1799 CE	Rosetta Stone is discovered
2560 BCE	Great Pyramid of Giza is built.

3. Create a timeline using the events in Question 2.
4. Source 1: Explain how the timeline demonstrates continuity and change in ancient Egypt.

HOW TO

Chronology, page 188

H2.2

How did the Nile River sustain life?

The Nile River was central to life in the desert. The river provided necessary resources such as fresh water for drinking and growing crops. The Nile River also provided a means of transporting goods, which enabled trade.

The life-giving Nile River

The Nile was critical to human survival in the desert. Apart from fresh drinking water, the river also provided fertile land where Egyptians could grow crops such as wheat for food and flax for clothing. The ancient Egyptians used the papyrus reeds that grew along the banks of the river to make baskets, sandals, boats and paper. They also built irrigation channels to funnel water from the river to irrigate crops growing inland.

The inundation

Each summer, the Nile River rose by up to eight metres as it carried rain that had fallen at its source, almost 7000 kilometres away. The flooding was known as 'the **inundation**'; the ancient Egyptians thought it was the work of Hapi, the god of the Nile and the yearly flooding.

The annual inundation carried rich silt that was deposited along the flooded banks of the river. Farmers depended on the Black Land of rich soil to grow their crops, as much of the dry Red Land could not be used for farming.

While the inundation brought nutrients to the soil, which made growing crops easier, the flooding also disrupted life in Egypt between June and September. Although houses and other buildings were built on land above the floodline, most of the farmland was under water for months every year. During the inundation, farmers worked on large building projects such as the pyramids.

Ancient Egyptians organised their calendar around the annual cycle of the Nile River. The three main seasons (Source 3) were:

- *akhet*: the flood season
- *proyet*: the growing season
- *shomu*: the harvest season.

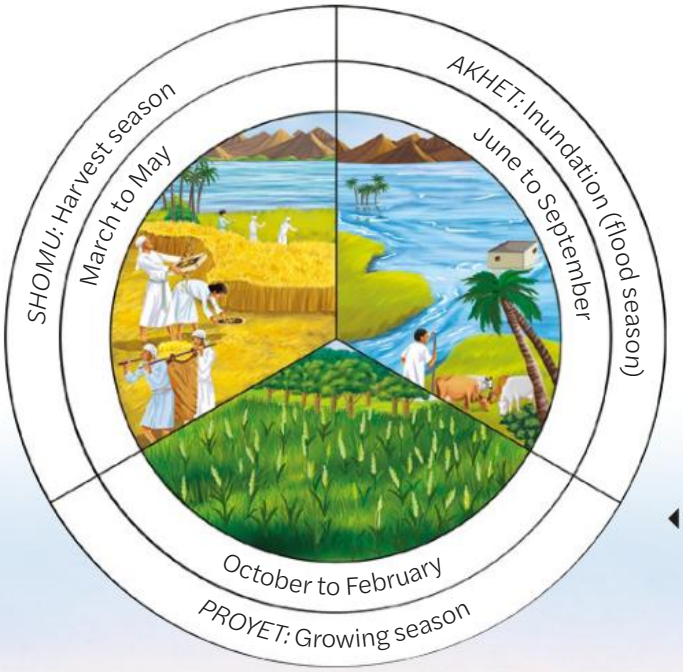
The Nile River as a highway

The Nile was ancient Egypt's main transport and communication route. Boats that headed north used oars against the river's current. Boats that went south relied on their sails to catch the wind blowing from north to south.

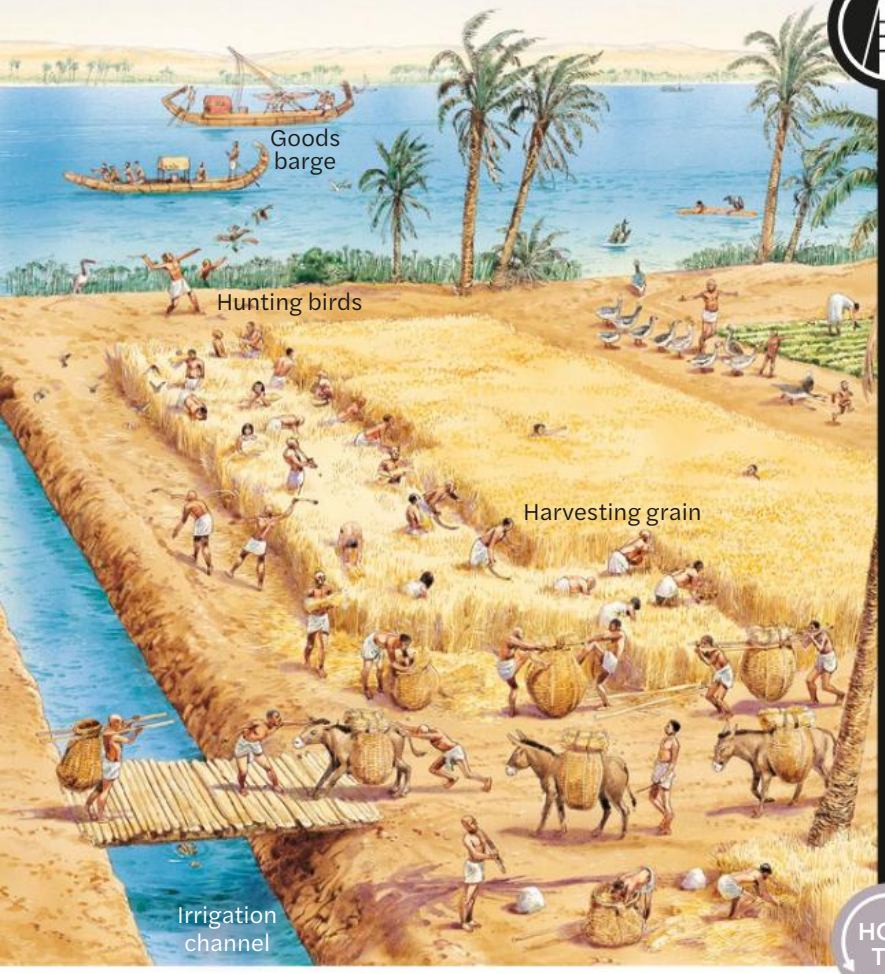
Small skiffs made from papyrus reeds were used to fish and hunt birds in the marshes along the river banks. Cargo boats transported grain and other supplies. Huge wooden barges transported massive blocks of stone from quarries to building sites.

Source 1: The Nile River was an important resource for the ancient Egyptians.

Source 2: Ancient Egyptians made small fishing boats by strapping together bundles of papyrus reeds. This painting from the tomb of the scribe Nebamun shows him hunting birds in the marshes by the Nile River. Nebamun is joined by his wife and daughter. [Painting from the tomb of Nebamun, c. 1390 BCE]



Source 3: The ancient Egyptian farming calendar



Learning ladder H2.2

Background and origins

1. Source 1: Identify three different activities shown in the illustration.
2. Source 2: Describe the scene shown in the source.
3. Explain how the inundation occurred.
4. Source 1: Explain why the ancient Egyptians needed to build irrigation channels.
5. Evaluate the positives and negatives of living near the Nile River for the people of ancient Egypt.

Continuity and change

1. Source 3: Identify the three seasons of the ancient Egyptian farming calendar.
2. Source 1: Describe how this scene would change during the season of Akhet.
3. Explain how the inundation changed everyday life in ancient Egypt.
4. Explain why the inundation was also an example of continuity.
5. Evaluate the advantages and disadvantages of living in a society affected by seasonal change.

HOW TO Continuity and change, page 193

H2.3

How did geography and climate influence where and how people lived?

Ancient Egypt was located in the desert in northern Africa. Living in such a hot and dry environment influenced many aspects of the lives of ancient Egyptians, including how they dressed and the design of their houses.

Ancient Egypt's geography and climate

Ancient Egyptians lived along the Nile River between two deserts: the Western Desert and the Eastern Desert. The Western Desert is part of the Sahara, which is the largest hot desert in the world. The Sahara covered 70 per cent of ancient Egypt's territory. The Eastern Desert is part of the Arabian Desert, which stretches from the Nile River to the Red Sea.

The climate of ancient Egypt was very hot and dry, with little rainfall. From May to September, the temperatures would reach up to 43°C during the day and drop to around 7°C at night.

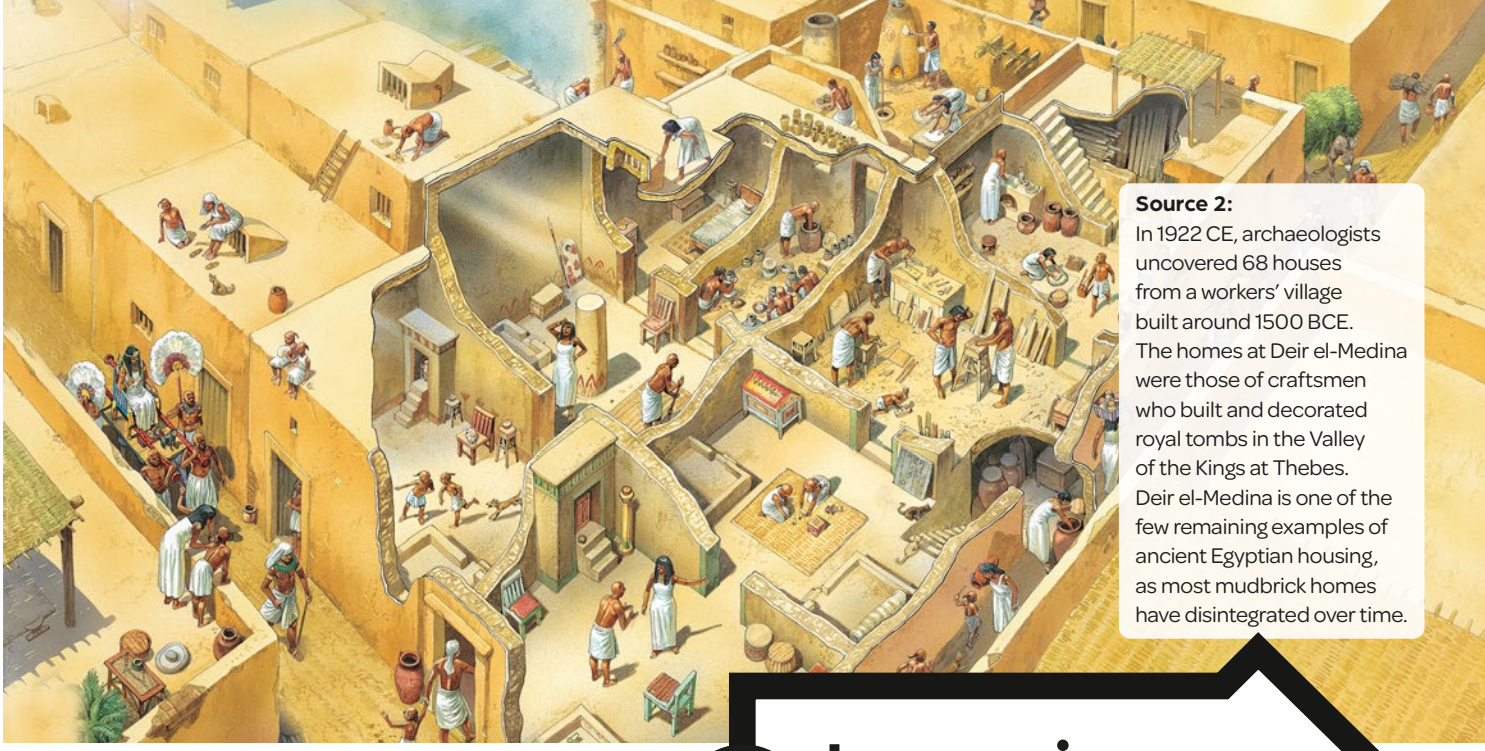
Living in such a dry environment, the ancient Egyptians needed access to a permanent, plentiful source of water. This is why they based their civilisation along the banks of the Nile River.

Black Land and Red Land

The ancient Egyptians described their land as either Black Land or Red Land. The Black Land, known as *Kemet*, was where the rich black silt was deposited along the banks of the Nile when it flooded every summer. This is the land the ancient Egyptians used for farming.

The Red Land, known as *Deshret*, was the desert. Gold, copper, turquoise and amethyst were mined in the desert, along with a special salt called *natron* that was used in the mummification process. In the desert, there were rocky cliffs that provided a natural barrier against invading armies.

Source 1: This wall painting is from a tomb in Thebes. It shows the simple white linen garments worn by men and women. The linen was made from flax plants, which were grown along the Nile River. The flax was spun into thread and then woven into cloth. [Egyptian tomb wall painting from Thebes, Luxor, painted 11th century BCE]



Source 2:
In 1922 CE, archaeologists uncovered 68 houses from a workers' village built around 1500 BCE. The homes at Deir el-Medina were those of craftsmen who built and decorated royal tombs in the Valley of the Kings at Thebes. Deir el-Medina is one of the few remaining examples of ancient Egyptian housing, as most mudbrick homes have disintegrated over time.

Ancient Egyptian houses

The hot weather influenced the design of the ancient Egyptians' houses. They were built using bricks that were made from mud and dried in the sunlight. The thick bricks worked as insulation, keeping the indoors cool during the hot days. Poor people used one layer of bricks to build their homes, while wealthy people used two or three layers of bricks.

Windows were set high in the walls to reduce heat and glare. Reed mats covered the windows and doors to keep out the heat, dust and flies. Homes were often painted white to reflect the Sun's rays.

Most of the houses were constructed with flat roofs, which could be accessed via stairs or a ramp. Some roofs had canopies made from reeds to provide shade. People would sleep and eat outdoors to take advantage of any breeze.

Dressing for the heat

Ancient Egyptians dressed in lightweight clothes that kept them cool in the hot desert conditions. Men wore linen loincloths around their waists and were often bare-chested. Women wore long linen dresses. The linen was woven from flax plants that were grown on the banks of the Nile.

Both men and women wore heavy eye make-up to reduce the glare from the strong sunlight. Men and women would shave their heads and wear wigs when in public. When at home, the shaved scalp would help keep them cool. On some occasions, perfumed fat was placed on the top of the wig and as it melted it dripped over the body. Some historians suggest the fat was used to cool the skin.

Learning ladder H2.3

Background and origins

1. Source 1: Identify the plant that was used to make clothing.
2. Describe where ancient Egyptian society was located.
3. Source 1: Explain how the ancient Egyptians made their clothing.
4. Source 2: Explain what the source shows about the lives of workers in Deir el-Medina.

Causes and consequences

1. Match the cause with its effect.

Cause	Effect
Egypt could be extremely hot	People wore heavy eye make-up
Egyptians lived in a dry environment	Houses were made of mudbricks
Strong sunlight created glare	Rich silt fertilised the land
The Nile River flooded every year	Egyptians needed a permanent, plentiful water supply

2. Describe the impact of hot weather on Egyptian clothing and accessories.
3. Explain how Egypt's climate influenced the design of housing.
4. Source 2: Why was the discovery at Deir-el-Medina so unique and important?

HOW TO

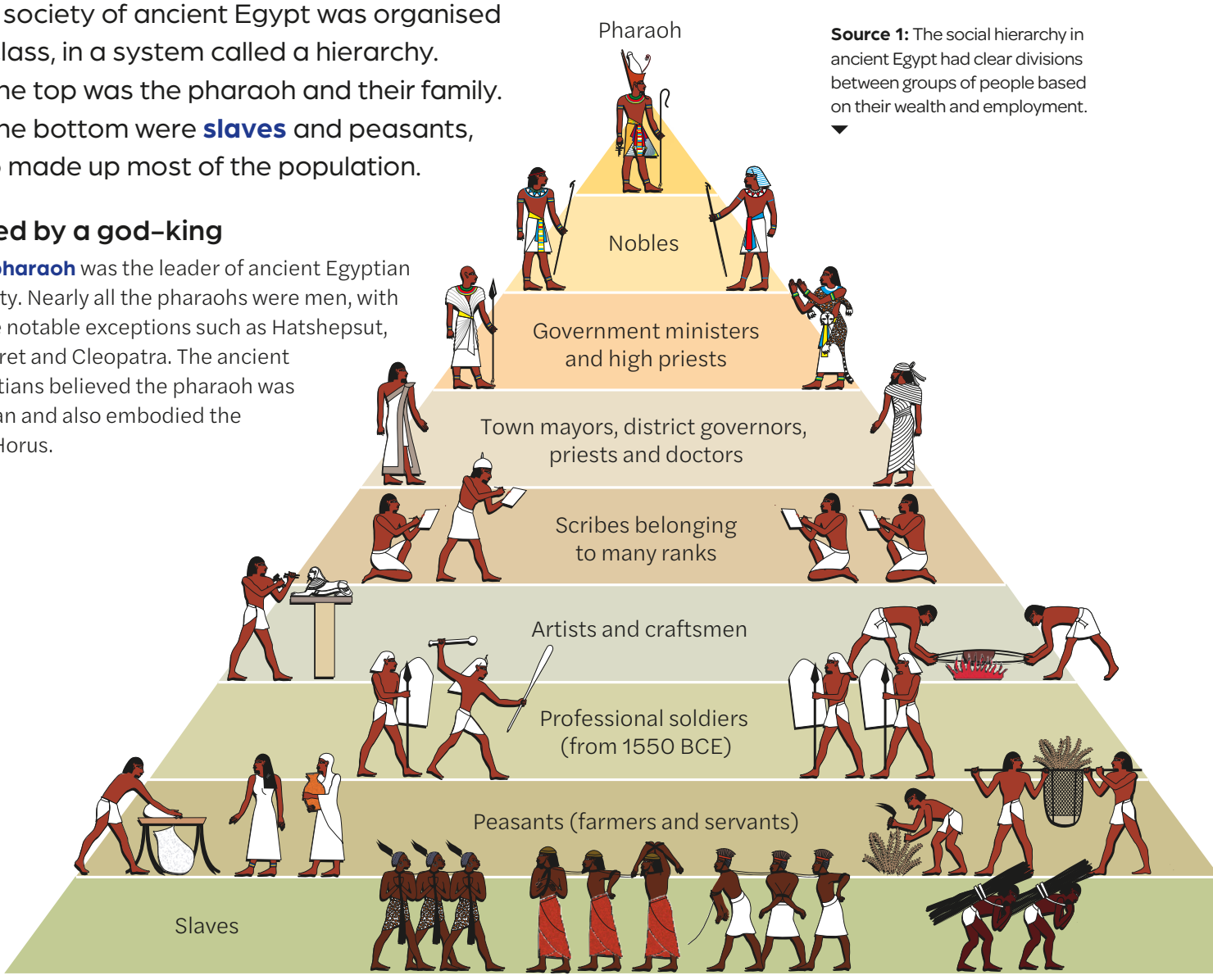
Causes and consequences, page 196

What was the social order of ancient Egypt?

The society of ancient Egypt was organised by class, in a system called a hierarchy. At the top was the pharaoh and their family. At the bottom were **slaves** and peasants, who made up most of the population.

Ruled by a god-king

The **pharaoh** was the leader of ancient Egyptian society. Nearly all the pharaohs were men, with some notable exceptions such as Hatshepsut, Twosret and Cleopatra. The ancient Egyptians believed the pharaoh was human and also embodied the god Horus.



Source 1: The social hierarchy in ancient Egypt had clear divisions between groups of people based on their wealth and employment.

The pharaoh was the link between the gods and the people and, therefore, he had both earthly and divine responsibilities:

- The **earthly responsibilities** included upholding the law; defending Egypt from invaders; and managing the requirements of building, farming, mining and trading. The pharaoh commanded the army, controlled all the land and resources, made the laws and collected taxes. Government ministers helped the pharaoh with these tasks.
- The **divine responsibilities** included officiating over religious ceremonies, selecting sites for new temples and, most importantly, maintaining **ma'at**, which is the order and balance in the world and the heavens. The pharaoh's role as chief priest of Egypt allowed him to fulfil his divine responsibilities. High priests also helped the pharaoh in his role as chief priest.

The pharaoh's power

The pharaoh was an all-powerful being. Huge monuments were built for pharaohs in the form of temples, statues and tombs so that they would be remembered after their death.

Source 2: Pharaoh Tutankhamun's gold coffin showed symbols that indicated the pharaoh's power and status as a god.

Pharaohs wore symbols of their power, including:

- a cobra headpiece that showed the pharaoh's readiness to strike at enemies
- an animal tail that represented the pharaoh's strength and fertility
- a false beard that symbolised the pharaoh's status as a god on Earth
- a flail (or whip) that indicated the pharaoh had ultimate authority
- a shepherd's crook that showed the pharaoh looked after his people.

The rule of the pharaohs lasted 3000 years over 31 dynasties. A **dynasty** is a sequence of rulers from the same family. The family maintains power over multiple generations by handing down the throne to an heir within the family's ranks. This system provided stability and continuity for the civilisation of ancient Egypt.

The pharaoh and the law

The pharaoh made the laws and was the supreme judge. There were two kinds of crimes in ancient Egypt: criminal offences and civil offences.

Criminal offences included murder. These offences were tried by a judge, and convicted criminals were given severe punishments, such as being thrown into the Nile to be eaten by crocodiles or impaled on a stake.

Civil offences included theft or failing to pay loans. Guilt in these cases was decided by a god. Pieces of pottery with the word 'guilty' were spread out on one side of the road and other pieces labelled 'not guilty' on the other side. A priest carried a statue of a god down the road. The statue 'leant' towards the right decision.

Learning ladder H2.4

Significant people, ideas and events

1. Source 1: Identify the group at the bottom of the social hierarchy.
2. Source 2: Describe the features of the source that identify the pharaoh as a powerful figure.
3. Explain how crimes were dealt with in Ancient Egypt.
4. Explain why the pharaoh had both earthly and divine responsibilities.

HOW TO Continuity and change, page 193

Continuity and change

1. Source 1: Identify the group that was included in the social hierarchy after 1550 BCE.
2. Describe how the pharaohs were remembered after their death.
3. Explain how dynastic rule provided continuity in ancient Egypt.
4. Explain why the pharaoh's association with the god Horus ensured continuity.
5. Evaluate the advantages and disadvantages of dynastic rule.

H2.5

Key individual

Who was Ramses II?

Ramses II was one of the most powerful ancient Egyptian pharaohs. He was worshipped by his people and feared by his enemies. He also built more monuments and temples – mostly celebrating himself – than any other pharaoh.

The rise of a pharaoh

Known as 'Ramses the Great', Ramses II was the third pharaoh of ancient Egypt's 19th dynasty. He ruled for 66 years, from 1279 to 1213 BCE, in the period of the New Kingdom. Ramses II was groomed from birth to succeed his father, Seti I, as pharaoh. He was raised in royal palaces, waited on by handmaids and nurses, and educated in writing, poetry and art.

Ramses II was also destined to be a great warrior, and he was trained in the art of combat. He became an army captain at the age of 10, and by 14 he was accompanying his father on military campaigns. Ramses II became pharaoh at the age of 25, following the death of his father.

Wives and children

The pharaoh was expected to provide heirs to continue the dynasty. Ramses II was particularly successful in fulfilling this responsibility: he fathered over 100 children! He married his first wife, Nefertari, around 1280 BCE, when he was 26. Over the course of his life, Ramses II had eight main wives, dozens of lesser wives and many unmarried partners (called concubines).

Ramses II gave his male heirs important positions and trained his first 12 sons to succeed him as pharaoh. However, Ramses II lived to the age of 91 and none of his first 12 sons outlived him. His 13th son, Merneptah, became pharaoh after Ramses II died in 1213 BCE. The dynasty ended 150 years later.

Building projects

Ramses II built more monuments and statues than any other pharaoh. His extensive building program covered the land along the Nile River from north to south to reflect his vision of Egypt as a great nation and himself as a great ruler. Ramses II also replaced the names of previous rulers on monuments and temples with his own. His palaces, temples, monuments and statues are grand and contain accounts of Ramses II's glorious and powerful rule. A new capital called Per Ramessu was built in the northern delta region. At the time, it was considered to be the greatest city in Egypt.

Source 1: Four huge statues of Ramses II sit at the entrance to a temple in Abu Simbel. This temple was carved out of a sandstone cliff on the west bank of the Nile River during Ramses II's reign. [Abu Simbel temple, 13th century BCE, sandstone, Aswān, Egypt]

Source 2: Ramses II in his chariot at the Battle of Kadesh

Was Ramses II a significant leader?

Ramses II took his earthly responsibility to protect his people seriously. During the 66 years he was pharaoh, Ramses II defended the country's borders and recovered lands lost in previous battles. His peace treaty with the Hittites in 1258 BCE was the first in history. It ensured a long period of peace and stability for the ancient Egyptians.

One of the most magnificent buildings constructed during the reign of Ramses II is the main temple at Abu Simbel (situated in modern-day Aswān in southern Egypt). It took about 20 years to build, and Ramses II made sure there was no question as to who had built the spectacular monument: four colossal 20-metre statues of the pharaoh sit next to the temple's entrance (Source 1). Built to commemorate Ramses II's victory at the Battle of Kadesh, scenes of the pharaoh at the battle and making offerings to the gods adorn the halls of the temple.

After his death in 1213 BCE, Ramses II's **legacy** lived on. Egypt remained prosperous, despite the huge expense of finishing Ramses II's building projects. As a result of this prosperity, Ramses II was loved by his subjects and nine pharaohs of the 20th dynasty (1190–1187 BCE) took his name.

Most historians agree that Ramses II was a very significant pharaoh, noting that Egypt was at the height of its power during Ramses's reign. However, Ramses's ongoing fame and popularity was due not only to Egypt's prosperity but also to his extensive self-promotion.

Source 3: Ramses II grasping a Hittite, a Libyan and a Nubian by their hair. Ramses II sent strong, simple messages in the visual images he created in public places and temples. He promoted himself as superhuman and god-like, as this image suggests. [Limestone relief, 13th century BCE]

Poem of Pentaur

Like Monthu, god of war, was I made,

With my left hand hurled the dart,

With my right I swung the blade,

Fierce as [the god] Baal in his time, before their sight.

Two thousand and five hundred pairs of horses were around,

And I flew into the middle of their ring,

By my horse-hoofs they were dashed all in pieces to the ground,

None raised his hand in fight,

For the courage in their breasts had sunken quite;

And their limbs were loosed for fear,

And they could not hurl the dart,

And they had not any heart

To use the spear;

And I cast them to the water,

Just as crocodiles fall in from the bank,

So they sank.

And they tumbled on their faces, one by one.

At my pleasure I made slaughter,

So that none

E'er had time to look behind, or backward fled;

Where he fell, did each one lay

On that day,

From the dust none ever lifted up his head.

Then the wretched king of the Hittites, he stood still,

With his warriors and his chariots all about him in a ring,

Just to gaze upon the valour of our king.

Source 4: This translation of the 'Poem of Pentaur' was published in Hardwicke D Rawnsley (1892 CE), *Notes for the Nile*, London, UK.

The Battle of Kadesh

The 'Poem of Pentaur' is the official account of the Battle of Kadesh in 1275 BCE between the Egyptians and the Hittites. The poem was commissioned by Ramses II and he liked it so much he had it inscribed on the walls of some of his temples.

According to the 'Poem of Pentaur', in the Battle of Kadesh, Ramses II single-handedly defeated an army of 2500 Hittite chariots, cutting down his enemies with spear and sword and running over their bodies with his horse-drawn chariot. The Hittites surrendered following the pharaoh's superhuman display.

However, historians do not believe the account of the Battle of Kadesh told in the 'Poem of Pentaur'. They do agree that Ramses II was a master of **propaganda**. Propaganda is biased or misleading information used to promote a point of view.

Learning ladder H2.5

Significant people, ideas and events

1. Source 1: Identify the monument shown in this source.
2. Source 3: Describe how the power of Ramses II is demonstrated in this source.
3. Explain how Ramses II prepared to become the pharaoh during his youth.
4. Source 1: Explain why Ramses II undertook such an extensive building program in Egypt.
5. Analyse the short-term and long-term consequences of Ramses II's self-promotion.

Significance

1. Source 2: Identify Ramses II's role in this source.
2. Source 4: Describe how Ramses II portrayed himself as a great warrior in this poem.
3. Sources 2, 3 and 4: Explain how Ramses II used propaganda to promote himself as a significant military leader.
4. Explain why Ramses II could be considered a significant leader of ancient Egypt.
5. An important aspect of historical significance is relevance. How important is Ramses II's rule today? Why is Ramses II remembered?

HOW TO

Significance, page 202

What was everyday life like in ancient Egypt?

Peasant farmers made up most of ancient Egypt's population, but they have left no written evidence of their lives. Evidence of the lives of peasants comes from the perspectives of the wealthy that were painted on tomb walls and written on papyrus.

Peasants

Peasants accounted for 80 per cent of ancient Egypt's population. They were the second-lowest class in the social hierarchy (slaves were the lowest). Most peasants were tenant-farmers who worked on land owned by the pharaoh, growing crops and farming animals.

During the annual flooding of the Nile River when the farmland was under water, adult male peasants enrolled in work gangs for public works such as repairing roads and canals. Some men signed up to work on large building programs such as the pyramids to ensure they had an income throughout the year. Money did not exist in ancient Egypt; workers were paid in food and goods such as firewood.

The peasants in ancient Egypt enjoyed few comforts and lived in simple mudbrick homes with only mats for furniture. Their diet consisted of bread, fish, beans, onions and beer. Unlike the nobility, peasants only ate meat on special occasions.

Do not let me find fault with you in your duties. Do not fail to have things in perfect order. Also, pick for me many plants, lotuses and flowers, and others worth offering. Further, you are to cut 5000 boards and 200 timbers; then the boat that will bring me can carry them, since you have not cut any wood this year – understood? On no account be slack. If you are not able to cut them you should approach Woser, the mayor of Hu. Pay attention: the herdsman of Cusae and the cowherds who are under my authority, fetch them for yourself in order to cut the wood ...

Source 1: This letter was written by Sennefer, the mayor of Thebes, to the peasant tenant-farmer Baki, son of Kyson, in c. 1420 BCE.

Women

Unlike most other cultures of the time, in ancient Egypt, women were regarded as being almost equal to men. Men were still considered to be the head of households, but women had considerable power and independence in running the house, raising children and working in the family business. Peasant women worked with their husbands. When the husband was away, the wife would run the business and the home.

Source 2: Evidence of the lives of peasants in ancient Egypt comes to us from sources commissioned by the wealthy members of society. This fragment of a wall painting from the tomb of Onsu shows peasants working hard, sowing and harvesting. [c. 1450 BCE]

Women were expected to marry and raise a family. Parents arranged their children's marriages. Girls married from about 12 years of age and were mothers by their mid-teens. Girls in wealthy families could attend school. Records show that some women became doctors, so there were opportunities for wealthy women to be well-educated.

> In ancient Egypt a woman enjoyed the same rights under the law as a man ... A woman was entitled to administer her own property and dispose of it as she wished. She could buy, sell, be a partner in legal contracts, be executor in wills and witness to legal documents, bring an action at court, and adopt children in her own name ... In short, an ancient Egyptian woman enjoyed greater social standing than many women of other societies, both ancient and modern.
>
> **Source 3:** Barbara Watterson (1994 CE), *Women in Ancient Egypt*, St Martin's Press, New York.

Learning ladder H2.6

Significant people, ideas and events

1. Source 2: Identify three activities the peasants are doing in this source.
2. Describe the work done by peasant farmers during the inundation.
3. Explain the role of women in ancient Egypt.
4. Source 3: How did the lives of women in ancient Egypt differ from the lives of women in other ancient societies?

Perspectives

1. Source 2: Whose perspective does this source show?
2. Source 3: Describe the author's perspective on women in ancient Egypt.
3. Source 1: Explain the author's perspective on the peasants of ancient Egypt.
4. Sources 1 and 2: Compare the two perspectives on peasants in ancient Egypt.

HOW TO Perspectives, page 200

How were pictures used to communicate?

The picture symbols found on many ancient Egyptian statues, tombs and temples are called hieroglyphs. The meanings of these symbols were only unlocked in 1822 CE when the Rosetta Stone was deciphered.

Hieroglyphics

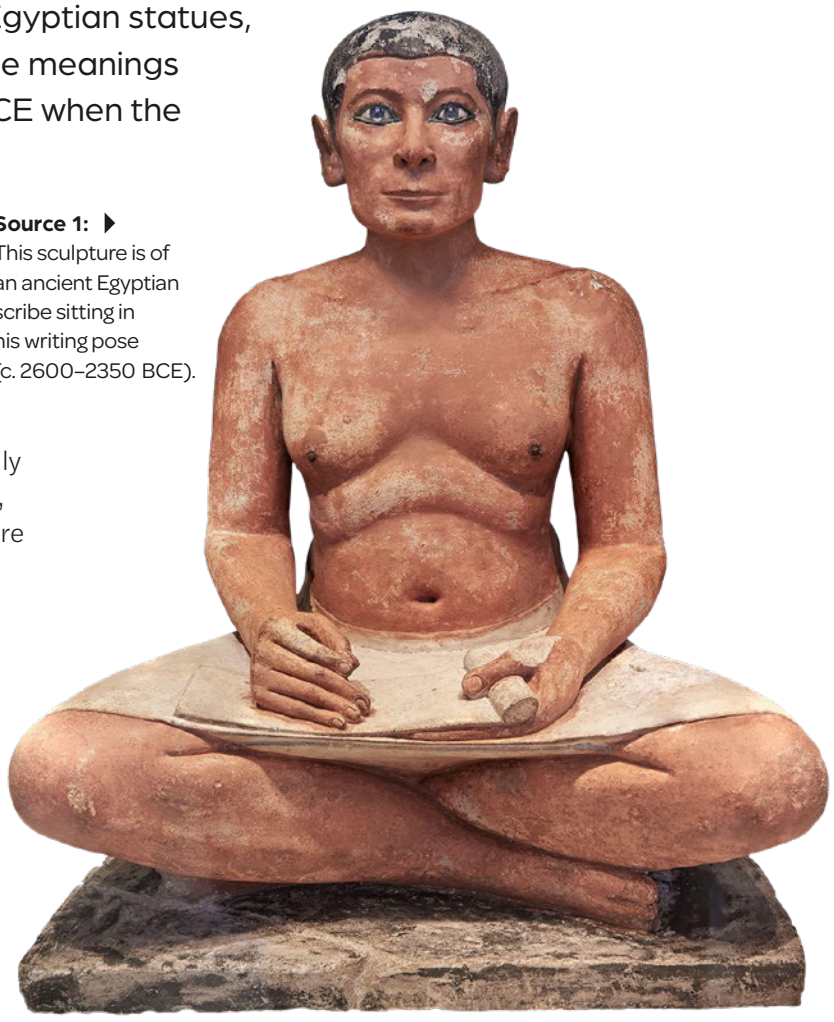
From around 3200 BCE, the ancient Egyptians used hieroglyphic writing. This complicated system involved more than 750 picture symbols (called **hieroglyphs**); some symbols represented sounds and others represented entire words.

Hieroglyphs took a long time to write, so they were mainly used in special circumstances such as on the walls of tombs, monuments, religious texts and temples. Simpler scripts were used in daily writing to record crop yields or taxes.

The role of scribes

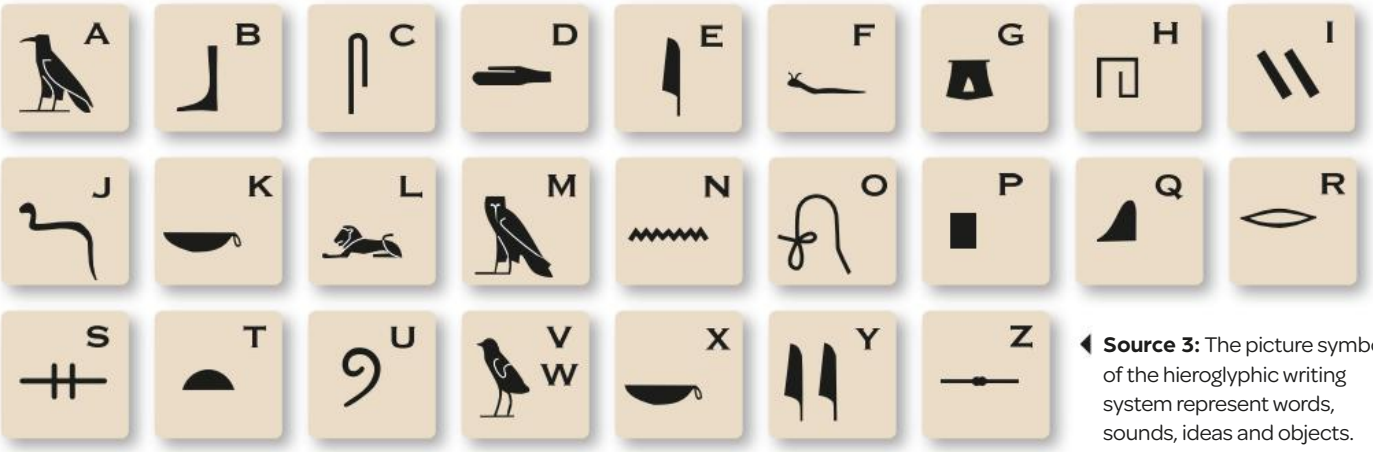
Most people in ancient Egypt could not read or write – only priests and government officials were literate. There were also specially trained 'professional writers' called **scribes**.

Scribes trained from a young age (from the age of six or seven) for many years to master hieroglyphs and become excellent writers. Scribes were well-regarded in ancient Egyptian society because of their rare and important skill.



Source 1: ▶ This sculpture is of an ancient Egyptian scribe sitting in his writing pose (c. 2600–2350 BCE).

▼ **Source 2:** This source shows hieroglyphics written on papyrus. [Unknown creator (c. 1000 BCE), *Priestess Hent-Maui and a Sacred Baboon Worship the Sun God Ra*]



Source 3: The picture symbols of the hieroglyphic writing system represent words, sounds, ideas and objects.

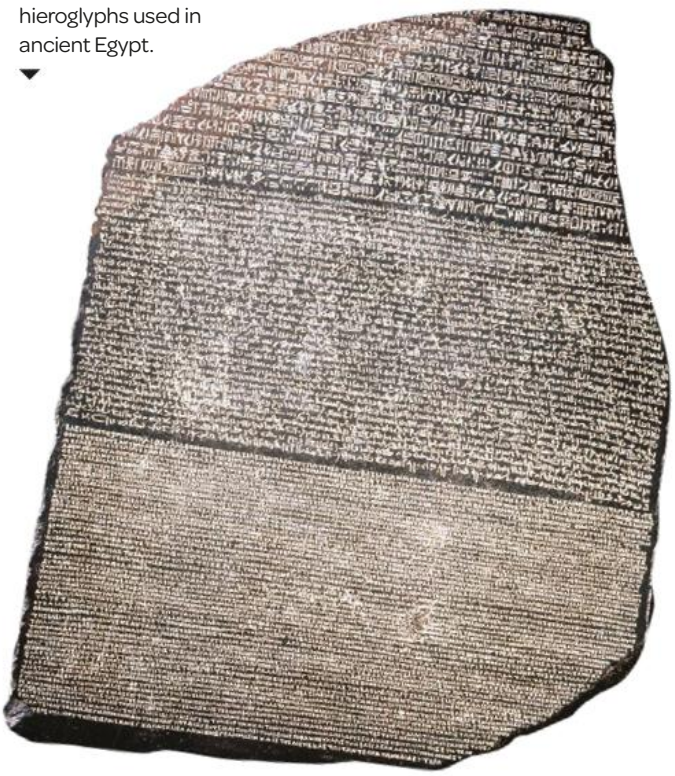
Writing was practised on cheap materials , such as flakes of limestone, until a young scribe graduated to writing on **papyrus**. Papyrus was the first paper-like material used by a society. It was made from the river plant of the same name. Our word 'paper' comes from the word papyrus.

Unlocking the code

After Egypt became part of the Roman Empire around 30 BCE, people gradually forgot how to read and write hieroglyphs.

In 1799 CE, a French soldier found a piece of black granite with symbols on it near the ancient Egyptian town of Rosetta. For many years, scholars tried to decipher what was written on the stone. In 1822 CE, around 20 years after the Rosetta Stone was discovered, Jean-François Champollion worked out that the same message was written three times on the stone: in hieroglyphs, in ancient Egyptian demotic script (a cursive form of hieroglyphic writing) and in ancient Greek. By comparing the languages, Champollion unlocked the ancient hieroglyphic writing. The key to Champollion's breakthrough was his realisation that hieroglyphs not only stood for alphabet letters, but also for sounds, ideas and objects.

Source 4: The Rosetta Stone was created in 196 BCE and rediscovered in 1799 CE. It was decoded around 20 years later, unlocking the meaning of the ancient hieroglyphs used in ancient Egypt.



Learning ladder H2.7

Significant people, ideas and events

1. Source 3:
   - **a** Identify the form of writing in this source.
   - **b** Use the source to write your own name.
2. Describe the role of scribes in ancient Egypt.
3. Explain how scribes were trained.
4. Explain why scribes were highly regarded in ancient Egyptian society.

Sources

1. Source 2: Identify the origin of this source.
2. Source 4: Using your knowledge, describe the source.
3. Source 4: Explain how this source enabled historians to translate hieroglyphics.
5. Source 4: Explain why this source is valuable to a historian studying ancient Egypt.

HOW TO Sources, page 191

What did the ancient Egyptians believe?

Religion played a central role in people's lives. Ancient Egyptians believed that nearly everything was controlled by the gods or goddesses, who were closely linked to nature.

The role of the gods

Ancient Egyptians believed that gods and goddesses controlled the environment and every aspect of people's lives, including love, health and death. Each city and town had its own god and a special place of worship built to honour them. For example, a temple was built in honour of Sobek, the god of water and the Nile River, on the banks of the river near the town of Kôm Ombo.

The form taken by Egyptian gods and goddesses was usually a human body with the head of an animal. There was often a connection between the characteristics of the animal and the role of the god. For example, the goddess Bastet was the cat-headed protector of homes (Source 1). Cats killed the rats and mice that invaded grain stored in people's houses.

Horus, the god of the sky, was shown as a man with the head of a falcon. Horus was closely linked to the pharaoh, who was thought to be the human form of Horus on Earth. Horus was often depicted with the symbols of a pharaoh: a sceptre (a long pole), an ankh (a life symbol) and a white and red crown (Source 1).

According to Egyptian mythology, gods and goddesses could transform themselves into their animal form on Earth. Sacred animals were worshipped and a person could be put to death for killing one. As a god himself, a pharaoh could be portrayed as a sphinx with a human head and an animal body, such as that of a lion.

The afterlife

The ancient Egyptians believed that when a person died, their heart was weighed to determine if they had done good deeds throughout their life. If they passed this test, their soul could travel to the afterlife.

Source 1: The ancient Egyptians believed many gods and goddesses controlled life on Earth and in the afterlife.

Ra
God of the Sun, supreme lord and creator god

Horus
God of the sky

Bastet
Protector of the home and goddess of childbirth and fertility

Isis
Goddess of healing and magic

Osiris
God of the dead and ruler of the underworld

Hunefer offers gifts to the gods.

Judges rule on how worthy Hunefer is to enter the afterlife.

Anubis takes Hunefer to the weighing of the heart.

Anubis weighs Hunefer's heart to see if it is as light as a feather. The crocodile-headed Ammit will eat the heart if it is too heavy.

Horus takes Hunefer to the afterlife.

Osiris greets Hunefer in the afterlife.

To ensure that a person's soul could survive in the afterlife, the ancient Egyptians believed that their body must be preserved. The process through which the body was preserved is called **mummification**.

Wealthy Egyptians spent a lot of time and money preparing for the afterlife. In addition to coffins, upper-class Egyptians bought furniture, clothing, food and magic amulets for their tombs. They also purchased an important book, the *Book of the Dead*, which contained spells to help the person on their journey through the Underworld to the afterlife. Ordinary Egyptians did not have elaborate tombs and instead might have been buried with a few personal items.

Anubis
God of mummification and the afterlife

Maat
Goddess of truth, justice and harmony

Sobek
God of water and the Nile River

Source 2: This illustration on papyrus is from *The Book of the Dead of Hunefer*. Hunefer was a scribe in the 19th dynasty. This illustration was created around 1285 BCE. Hunefer's heart is being weighed against a feather from the headdress of the goddess Maat to see if it is light enough for him to enter the afterlife. This is why hearts were left in Egyptian mummies while all the other organs were removed.

Learning ladder H2.8

Significant people, ideas and events

1. Source 1: Identify which god the ancient Egyptians may have prayed to when they were sick.
2. Describe the purpose of the *Book of the Dead*.
3. Sources 1 and 2: Explain the role of the god Anubis in the afterlife.
4. Source 2: Explain why a feather was used to weigh the heart.

Perspectives

1. Source 1: Identify the most important god for the ancient Egyptians.
2. Describe the ancient Egyptian perspective on the power of the gods.
3. Explain the ancient Egyptian perspective on the sacred nature of certain animals.
4. Compare the ancient Egyptians' perspective on life with their perspective on the afterlife.

HOW TO

Perspectives, page 200

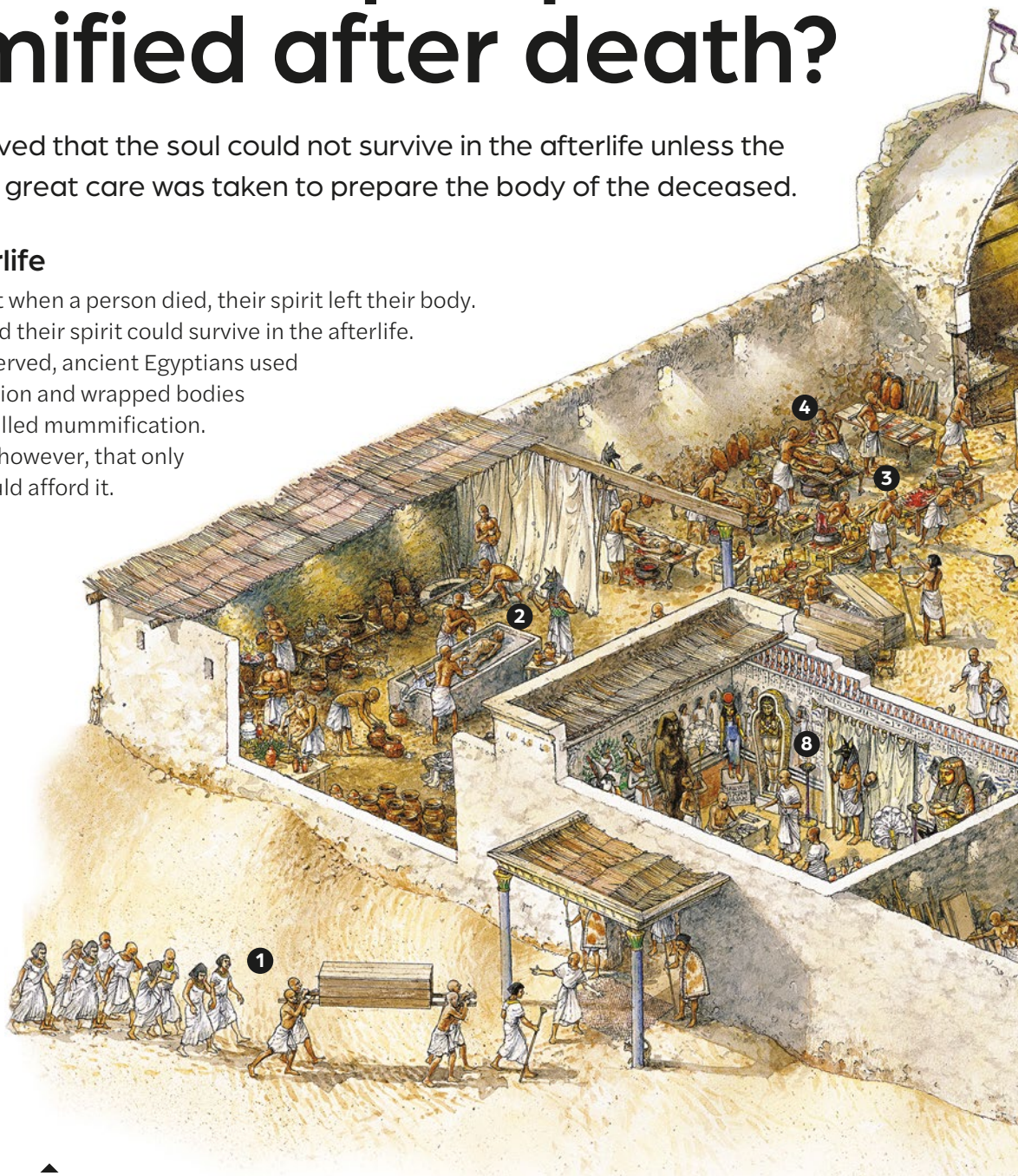
How were people mummified after death?

Ancient Egyptians believed that the soul could not survive in the afterlife unless the body was preserved, so great care was taken to prepare the body of the deceased.

Preparing for the afterlife

Ancient Egyptians believed that when a person died, their spirit left their body. If a person's body was preserved their spirit could survive in the afterlife. To make sure bodies were preserved, ancient Egyptians used embalming to stop decomposition and wrapped bodies in strips of linen, in a process called mummification. This process was so expensive, however, that only the elite of Egyptian society could afford it.

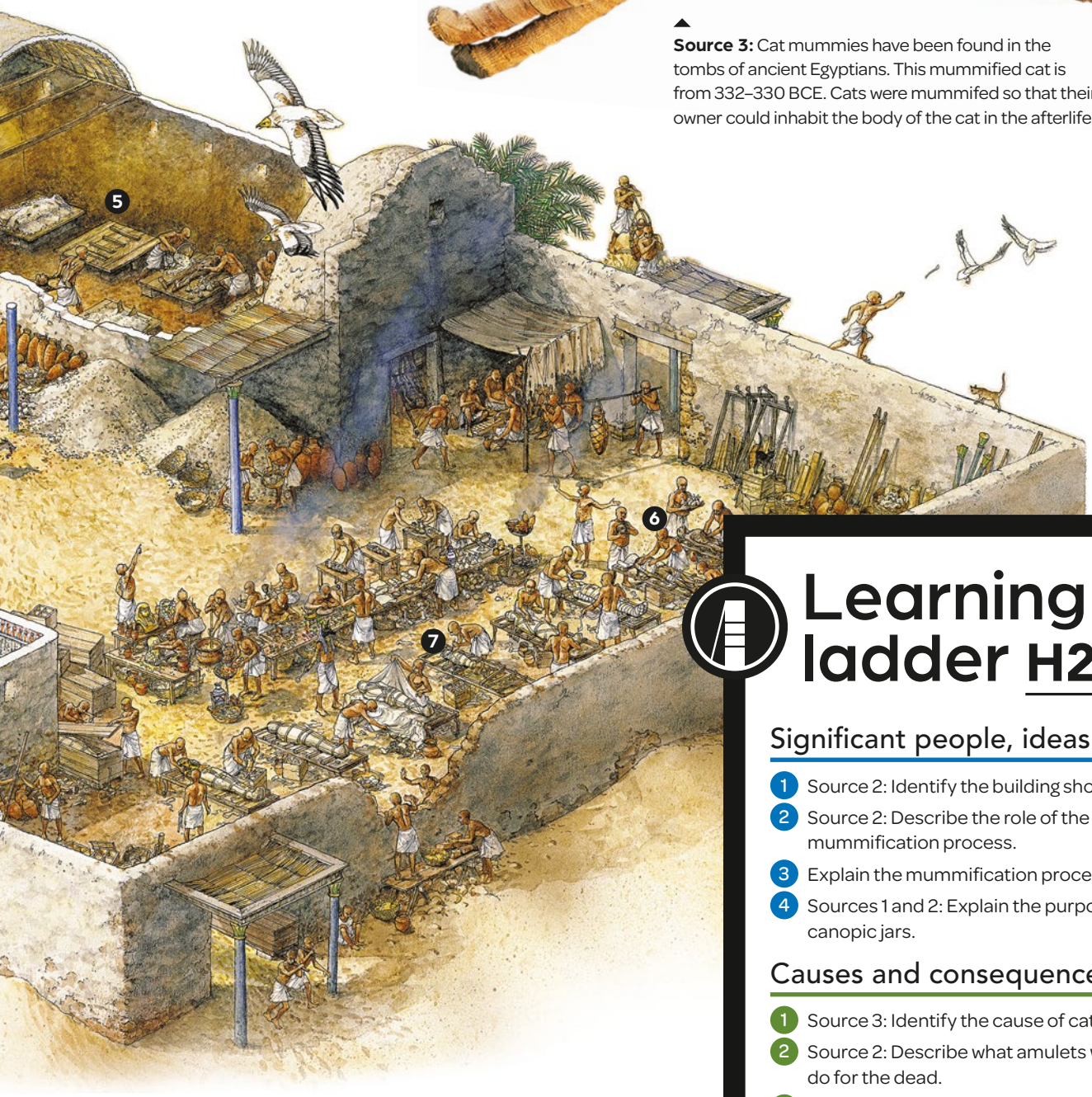
Source 1: Internal organs (except for the heart) were removed from the body during the mummification process and placed in special containers, called canopic jars, to preserve them so that the soul could journey to the afterlife.



Source 2: An ancient Egyptian 'house of the dead', showing the mummification process

1. Mourners follow the deceased person as they are taken to the house of the dead.
2. The body is washed as a jackal-headed chief priest reads from the *Book of the Dead*.
3. The lungs, stomach, liver and intestines are removed from the body. Only the heart is left. The brain is removed by pushing a hook up through the nostrils.
4. The organs are dried, rubbed with scented oils and put into four canopic jars:
   - lungs: jar with a baboon's head
   - stomach: jar with a jackal's head
   - liver: jar with a man's head
   - intestines: jar with a falcon's head.
5. The body is covered in salt for 70 days to remove any moisture. It is then washed in water and covered in scented oil.

Source 3: Cat mummies have been found in the tombs of ancient Egyptians. This mummified cat is from 332–330 BCE. Cats were mummifed so that their owner could inhabit the body of the cat in the afterlife.



6 The embalmed body is wrapped in linen bandages, and amulets (objects believed to protect the dead in the Underworld) are placed in the folds of the bandages. Prayers are read from the *Book of the Dead*.

7 The mummy is wrapped in up to 20 layers of bandages and painted with sticky resin from pine trees.

8 The completed mummy is put into a coffin. Important people had multiple coffins, one inside the another, which were placed inside a stone container called a sarcophagus.

Learning ladder H2.9

Significant people, ideas and events

1. Source 2: Identify the building shown in this source.
2. Source 2: Describe the role of the chief priest in the mummification process.
3. Explain the mummification process.
4. Sources 1 and 2: Explain the purpose of each of the canopic jars.

Causes and consequences

1. Source 3: Identify the cause of cat mummification.
2. Source 2: Describe what amulets were believed to do for the dead.
3. Source 2: Explain how a person's status in life affected their mummification.
4. Explain why ancient Egyptian death rituals were so elaborate.
5. Analyse the causes and consequences of displaying the mummies of ancient Egyptians. Should museums continue to display them?

HOW TO

Causes and consequences, page 196

H2.10

Site study

What have we learned from the tomb of Tutankhamun?

Who was Tutankhamun?

During the 18th dynasty of ancient Egypt, in the period of the New Kingdom, a young boy took the throne. He ruled for just over a decade (c. 1336–1327 BCE) and died when he was only 19. His name was Tutankhamun.

The discovery of Tutankhamun's tomb

Tutankhamun's tomb was discovered in 1922 CE by an archaeological team led by Howard Carter. The tomb is located in the Valley of the Kings in Upper Egypt, which is where most of the pharaohs of the 18th, 19th and 20th dynasties were buried.

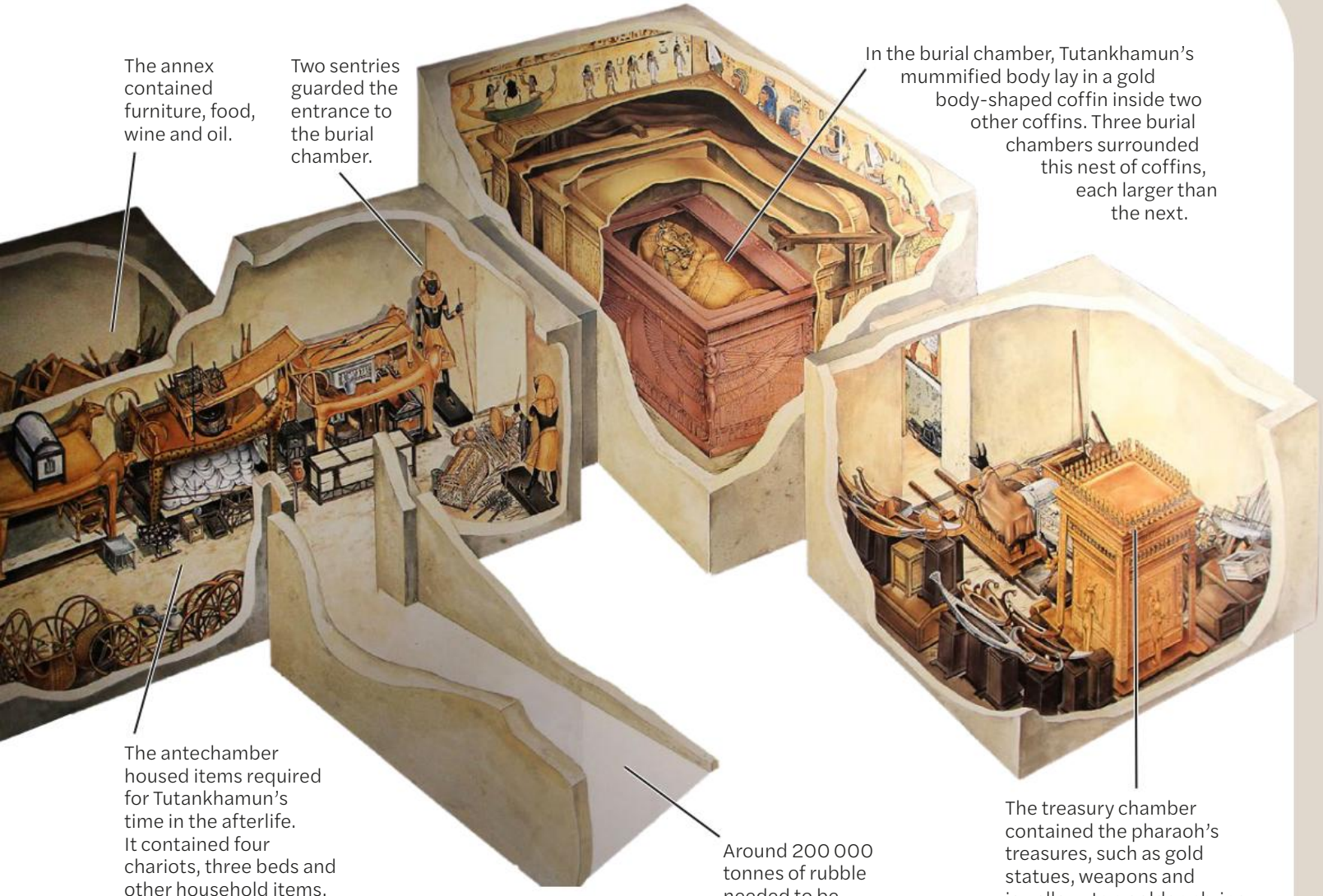
For over 3000 years, the entrance to Tutankhamun's tomb was hidden beneath 200 000 tonnes of rubble, which had been deposited when the Valley of the Kings flooded a year after Tutankhamun's funeral. This rubble hid the tomb from thieves, who had looted most of the other pharaohs' tombs in the valley.

When Carter first entered Tutankhamun's tomb, he raised a candle to peer inside and saw:

> Details of the room within emerged slowly from the mist, strange animals, statues, and gold – everywhere, the glint of gold.
>
> **Source 1:** Howard Carter (1923 CE), *The Tomb of Tutankhamun Based on his Diaries*, Cassell & Co., London.

▼ **Source 2:** Photographs taken in 1922 CE of Howard Carter and his archaeological team and some of the artefacts found in Tutankhamun's tomb

Howard Carter's discovery soon became one of the most famous archaeological discoveries of all time. Since the tomb was almost wholly intact and had hardly been looted, we have been able to learn much about the life of pharaohs and the burial rituals of ancient Egyptians.



Source 3: The tomb of Tutankhamun contained the pharaoh's burial chamber and rooms filled with items a ruler might need in the afterlife.

Learning ladder H2.10

Significant people, ideas and events

1. Sources 2a and 2b: Identify what is happening in these sources.
2. Sources 1 and 3: Describe what Howard Carter saw when he opened the tomb.
3. Explain how Tutankhamun's tomb had remained mostly undisturbed for 3000 years.
4. Explain why the discovery of Tutankhamun's tomb was so important.
5. Analyse the benefits and ethical issues involved in removing the artefacts and mummy from Tutankhamun's tomb.

Sources

1. Source 1: Identify the origin of the source.
2. Source 3: Describe the contents of the treasury chamber.
3. Source 3: Explain how the artefacts found in the annex were to be used.
4. Source 2c: Explain why it was important to photograph the tomb before the artefacts were removed.

Sources, page 191

HOW TO

H2.11

How were the pyramids constructed?

Ancient Egyptians believed that pharaohs became gods in the afterlife. In preparation, pharaohs built temples to the gods and constructed huge pyramid tombs for themselves.

Building the pyramids

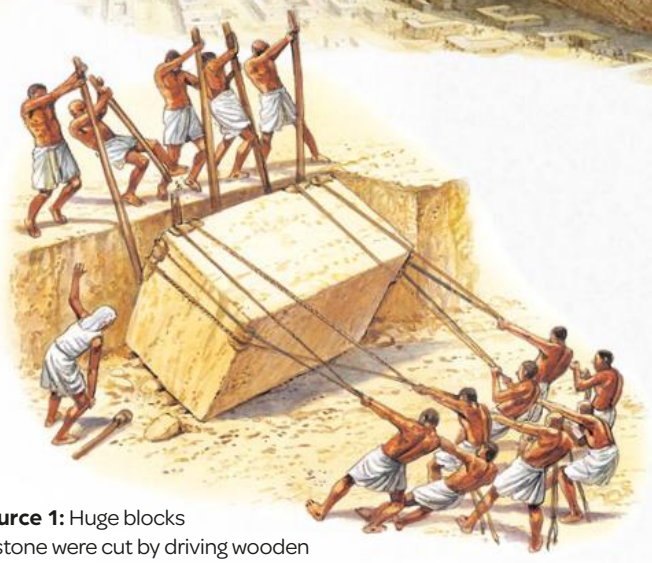
The ancient Egyptians built amazing temples, **obelisks** and **pyramids**. One of the most impressive constructions is the Great Pyramid of Giza. This pyramid was originally 147 metres tall and was built using 2.3 million blocks of stone. The base is an almost perfect square, with each side of the pyramid facing one of the four points of the compass.

The ancient Egyptians did not have modern tools, machinery, wheels or work animals. So how did they construct the pyramids?

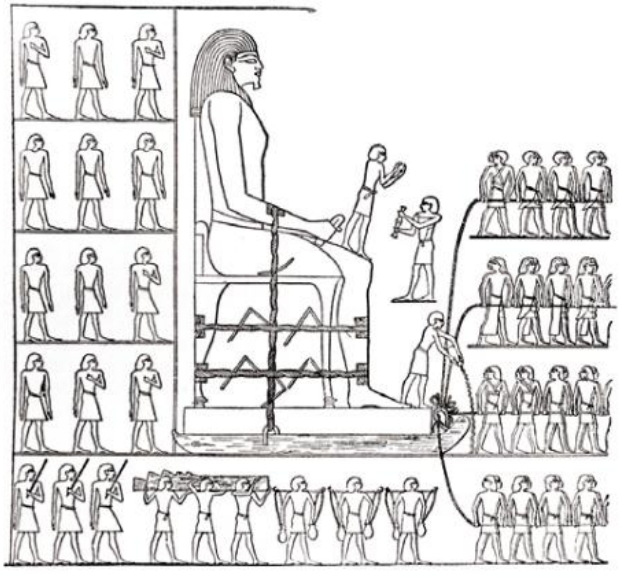
The huge blocks of stone used to build the pyramids were cut in quarries (Source 1). Stone was stronger than the mudbricks used to build houses and it lasted much longer. The stone blocks used for the Great Pyramid of Giza are carved and placed so precisely that not even a knife blade can fit between them.

The ancient Egyptians relied on human power to move the giant blocks of stone from the quarries to the building sites; each stone weighs at least 2.5 tonnes. Until recently, nobody really knew how they moved the blocks. Log rollers, sledges, ramps and oil-slicked slipways have all been suggested as methods used to build the pyramids.

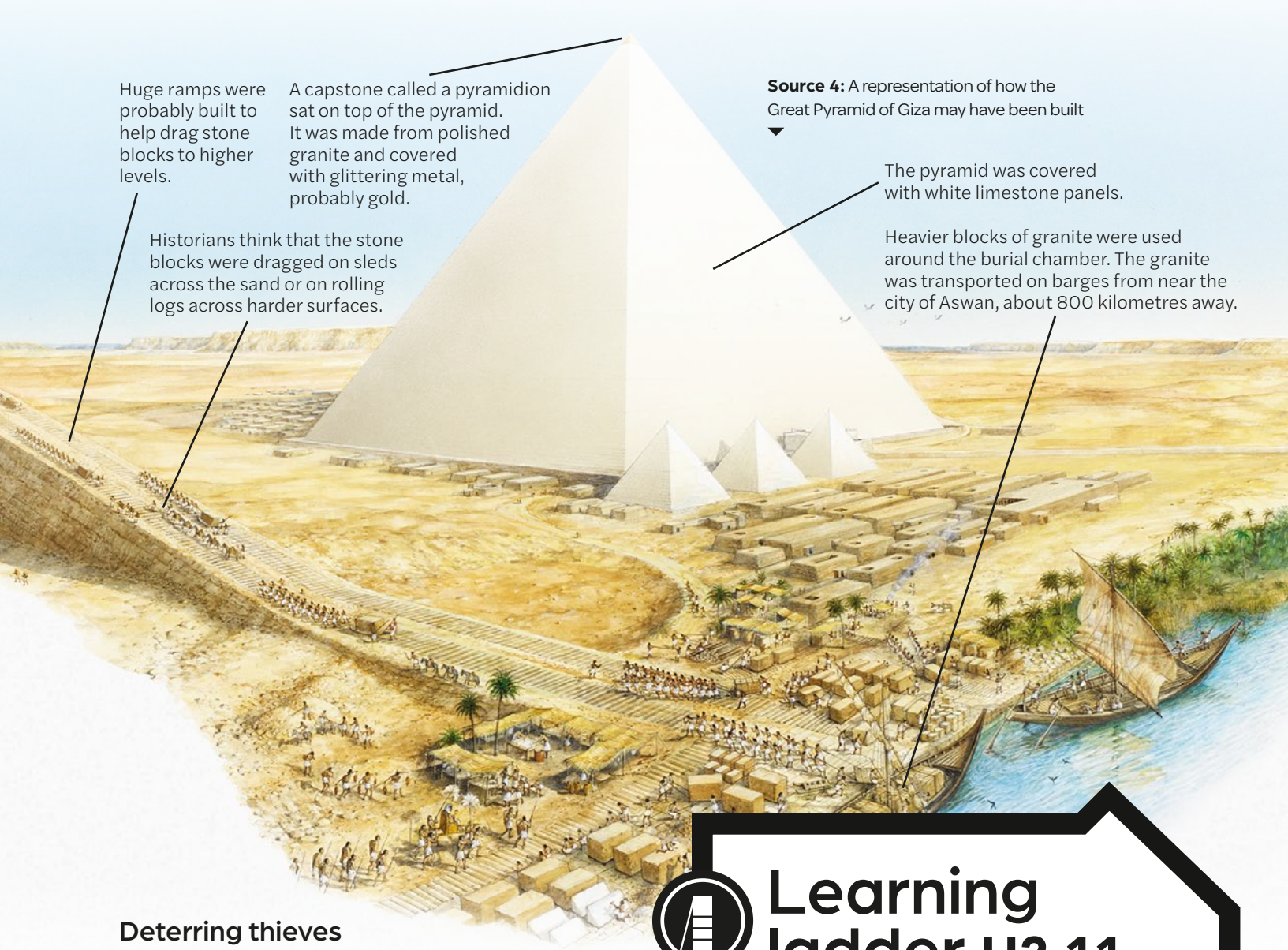
In 2014 CE, scientists from the University of Amsterdam used a sled to pull heavy stone across sand. They found it is much easier to pull a sled across wet rather than dry sand. This theory – that the ancient Egyptians moved heavy objects on sleds over wet sand – is supported by a wall painting uncovered in the tomb of Djehutihotep (Source 2), which shows water being poured in front of a sled carrying a huge statue.



Source 1: Huge blocks of stone were cut by driving wooden stakes into the rock. The stakes were then made wet to make them expand and split the rock. About 100 000 men worked for 20 years to build the Great Pyramid of Giza.



Source 2: This wall painting is from the tomb of the nomarch Djehutihotep (c. 1932–1842 BCE). It shows his huge statue being dragged on a sled with a person pouring water in front of it. It is likely that water was poured in the path of the sled to reduce friction.



Source 4: A representation of how the Great Pyramid of Giza may have been built

Deterring thieves

Inside the pyramids, there were false doors, dead-end passages, piles of rubble, low ceilings, statues of the most feared gods and written curses that were intended to deter thieves. These deterrents had little effect: robbers would often break into pyramids searching for gold; they would tear at the wrappings of mummies looking for amulets, often ripping off their heads, arms and hands.

> Gilded coffins, amulets of precious stones, exotic imported artefacts all proved too tempting for thieves. When embalmers began to include protective amulets, precious stones, gold, or silver within the mummy wrappings, even the deceased's corpse came under threat. Robbers probably attacked royal tombs soon after the king's funeral, and there is evidence of corruption among the necropolis employees charged with protecting the tombs.
>
> **Source 3:** David P Silverman (1997 CE), *Ancient Egypt*, OUP.

Learning ladder H2.11

Significant people, ideas and events

1. Identify the purpose of the pyramids.
2. Source 4: Describe the appearance of the pyramids.
3. Explain how the ancient Egyptians tried to deter thieves from breaking into the pyramids.
4. Source 3: Using the source and your knowledge, explain why the pyramids were robbed.

Significance

1. Source 4: Identify the significant monument in the source.
2. Source 1: Describe how the ancient Egyptians cut stone blocks.
3. Sources 2 and 4: Using the source and your knowledge, explain how the ancient Egyptians were able to move stone blocks from the quarries to the pyramid site.
4. Explain why the pyramids are considered historically significant.

HOW TO

Significance, page 202

How did ancient Egyptians connect with other people?

Ancient Egyptians connected with people from other societies through trade, immigration and conflict.

Trade

Much of the contact ancient Egyptians had with people from other societies occurred through trade. Pharaohs sent trading expeditions to source goods the country needed but did not have.

Egypt exported grain, papyrus, flax, sandals, beer, wine, cheese, dried fish and linen cloth to other regions. Egypt imported luxury goods, such as silver, spices, cedarwood, incense, exotic animals, gold and ivory, and slaves.

Before 525 BCE, the ancient Egyptians did not use currency and traded goods using the **barter** system. To make trading easier, they used the **deben** as a unit of measurement. For example, one deben might be worth 100 bushels of grain and 45 metres of wood.

While most trade occurred peacefully, some was established by force. Pharaoh Djer, who ruled Egypt during the 1st dynasty, attacked Nubia to secure valuable resources, principally gold mines. The pharaohs who came after Djer defended Egypt's borders and used patrols to protect resources and trade routes.

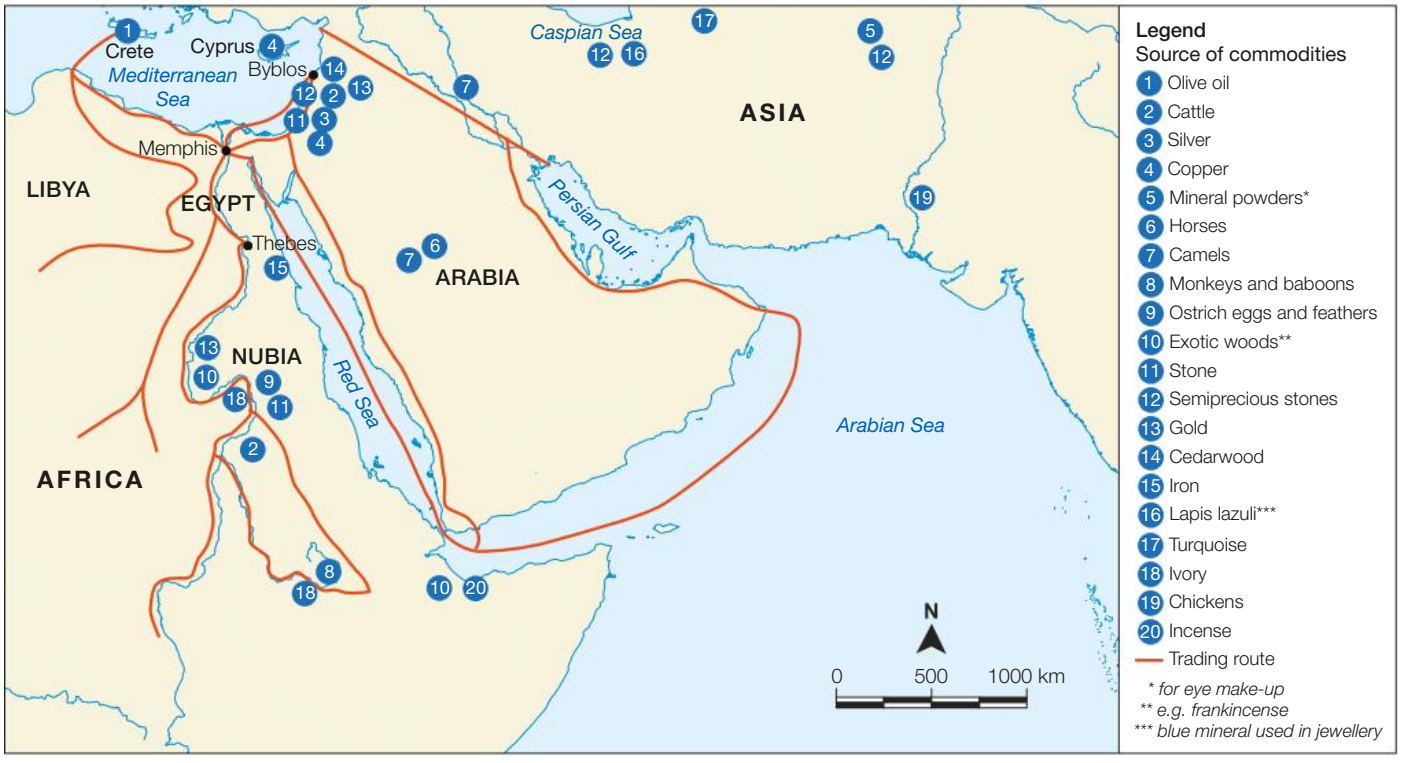
Immigration

In the early 18th century BCE, there was an influx of immigrants from Palestine into Lower Egypt. The immigrants brought with them superior weaponry using new technologies, including the horse and chariot, bows that could shoot further, bronze axes and hard body armour.

Conflict

The ancient Egyptians adopted this new weaponry and from around 1550 BCE, ancient Egypt had a permanent army that consisted of professional soldiers. This army became one of the largest and most powerful in the world; it secured Egypt's borders

Commodities traded and trade routes in north Africa and west Asia during the time of ancient Egypt



Source: Matilda Education Australia

▲ **Source 1:** Ancient Egyptians exchanged goods such as grain and papyrus for luxury items including silver and spices.

Source 2: This image is from the Tomb of Rekhmire (1479–1420 BCE). In the top panel it shows people from Punt bringing ebony wood, elephant tusks and a myrrh tree; in the middle panel, people from Crete bringing gold vases and jewellery; and in the lower panel, Nubians bringing cattle, a giraffe, a baboon and a leopard. These goods were paid as tributes to ancient Egypt.

and launched attacks on neighbouring countries. For example, in 1275 BCE, Ramses II marched his army into Syria to the Battle of Kadesh, which involved about 6000 chariots; this is the largest recorded chariot battle of all time. Once subdued, other nations were forced to pay a **tribute**, an annual payment of goods, to Egypt to ensure good relations continued. If they failed to pay this tribute, Egypt would invade them.

Source 3: During the time of the Middle Kingdom, the ancient Egyptians adopted a new way of fighting, using chariots and bronze weapons. During battle, pharaohs wore a special blue crown, known as the *khepresh*. [Herbert M Herget (1941 CE), *King Thutmose III Drives his Chariot into Battle Near Har Megiddo*]

Learning ladder H2.12

Impact and legacies

1. Source 1: Identify three items imported by ancient Egypt.
2. Source 2: Describe the annual tributes paid to ancient Egypt.
3. Explain how ancient Egypt's bartering system worked.
4. Source 1: Explain why Egypt's geographical position was an advantage for trade.
5. Evaluate the advantages and disadvantages for Nubia in its relationship with Egypt.

Causes and consequences

1. Identify the cause of ancient Egypt's trading expeditions.
2. Describe the cause of Pharaoh Djer's attack on Nubia.
3. Explain how the immigration of people from Palestine was a cause of Egypt's rise as a military power.
4. Source 2: Explain why Egypt's neighbours paid tributes.

HOW TO

Causes and consequences, page 196

Key individual

Why were Hatshepsut's monuments defaced?

Hatshepsut's reign was one of the most peaceful and prosperous in ancient Egypt's history.

Who was Hatshepsut?

Hatshepsut was the main wife of Pharaoh Thutmose II. When he died in 1479 BCE, his son Thutmose III, born to one of his other wives, was next in line. Thutmose III was very young (around the age of two) and, at first, Hatshepsut acted as **regent**. But then, for reasons that are unknown, she proclaimed herself pharaoh in 1473 BCE, stating that the sun god Amun-Ra had ordained her rule. Thutmose III did not get to rule on his own until Hatshepsut died in 1458 BCE (when he was 23).

Hatshepsut dressed as a male pharaoh and wore a beard to demonstrate her right to rule. However, she also made sure that every text and inscription that referred to her used female pronouns – 'she' and 'her'.

Hatshepsut's establishment of peace and prosperity

Hatshepsut led several major military campaigns, against Nubia, Syria, Palestine and Gaza, to protect her empire. When Thutmose III turned 16, he became the leader of her armies. Aside from these wars, the remainder of Hatshepsut's reign was relatively peaceful.

Hatshepsut was successful in her efforts to re-establish ancient Egypt's trade networks, which had been disrupted by the Hyksos occupation of Egypt (1650–1550 BCE). Most importantly, she made a trade expedition to the land of Punt (c. 1460 BCE). Historians currently believe the land of Punt was located south of the ancient Egyptian empire, near modern-day Eritrea. The ancient Egyptians began buying gold, resins, timber, ivory and slaves from Punt. They also bought live myrrh trees to transplant in Egypt. This is the world's first recorded attempt to transplant foreign trees.

Source 1: Restored life-sized statue of Hatshepsut from the Temple at Deir el-Bahri, c. 1470 BCE. Parts of it were found during excavations conducted in 1843 CE and 1926 CE. Hatshepsut is shown wearing the traditional headdress and kilt of a male pharaoh. The titles on the sides of the throne read 'The perfect goddess, lady of the Two Lands' and 'Daughter of Ra'.

Hatshepsut's monuments

Hatshepsut's restoration of trade made ancient Egypt very wealthy. This allowed Hatshepsut to embark on a large monument-building program in Egypt. Her building works included the Temple of Karnak, the Temple at Deir el-Bahri and the Fortress of Western Thebes. Many of her monuments contained inscriptions that celebrated her reign.

Why were Hatshepsut's monuments defaced?

When Hatshepsut died, her stepson Thutmose III cut out her name from all her monuments and destroyed her statues. All references to her as pharaoh of Egypt were scratched out at the Temple of Karnak, and her statues at Deir el-Bahri were damaged. Wherever a reference to her as pharaoh was scratched out, it was replaced with 'Thutmose III' or sometimes with that of earlier pharaohs, such as 'Thutmose II' or 'Thutmose I'.

The destruction of a former pharaoh's monuments was not unusual. Hatshepsut herself had altered or destroyed monuments built by previous pharaohs. Pharaohs often did this to establish the importance of their own reign. However, they rarely scratched out the name of a previous pharaoh.

Historians have proposed a range of explanations for the erasure of Hatshepsut's name. Some conclude that Thutmose III didn't like his stepmother and resented that she had held on to power for so long. Others argue that Hatshepsut's name was erased because the male pharaohs who succeeded her felt threatened by her great success as a female pharaoh.

Source 2: Part of a badly damaged limestone statue of Hatshepsut, found in the Temple at Deir el-Bahri

Rediscovering Hatshepsut

The erasure of Hatshepsut's name meant that she was almost lost to history. By the middle of the 19th century, however, archaeologists had started to read the hieroglyphics on some of Hatshepsut's temples and found that Thutmose III had made some mistakes. While he had erased Hatshepsut's name and replaced it with his own, there were still several inscriptions that contained the word 'she' instead of 'he'. For example, an inscription at Deir el-Bahri had the name of the pharaoh as 'Thutmose III' but had forgotten to change 'her' to 'his', so that it read 'Amun is satisfied by her monuments'. Today historians are undertaking more thorough research, striving to restore Hatshepsut to her rightful place in history.

Hatshepsut's achievements are relevant to us precisely because they were ultimately rejected and forgotten – both by her own people and by the subsequent authors of history. She was the most formidable and successful woman to ever rule in the ancient Western world, and yet today few people can even pronounce her name ... the traces she left behind teach us what it means to be a woman at the highest echelons of power ...

Hatshepsut had to carve out her own niche in a society that identified power with masculinity. To do this, she had to explore what feats a woman could accomplish.

Source 3: Kara Cooney (2014), *The Woman Who Would Be King: Hatshepsut's Rise to Power in Ancient Egypt*, Crown Publishers, New York.

Learning ladder H2.13

Significant people, ideas and events

1. Identify three important buildings built during Hatshepsut's reign.
2. Describe how Hatshepsut brought peace and prosperity to ancient Egypt.
3. Source 1: Using the source, explain how Hatshepsut demonstrated her right to rule.
4. Explain why Hatshepsut was a significant ruler of ancient Egypt.
5. Source 3: What does the author of the source mean about Hatshepsut's significance as a woman ruler in the ancient world? Explain your answer.

Interpretations

1. Source 2: Identify what has happened to this source.
2. Describe what Thutmose III did to try to erase Hatshepsut from history.
3. Source 2: Explain how historians recovered Hatshepsut's place in history.
4. Explain the two different theories historians have suggested to explain the erasure of Hatshepsut's name.
5. Which theory do you support? Why?

HOW TO

Interpretations, page 204

What are the legacies of the ancient Egyptians?

The ancient Egyptians left a lasting legacy through their unique buildings, inventions and discoveries that contributed to the development of the modern world.

Amazing buildings and monuments

The pyramid is recognisable around the world as a symbol of ancient Egypt. The Great Pyramid of Giza was the tallest building on Earth for more than 3800 years. This pyramid is the only remaining structure of the Seven Wonders of the Ancient World, which were the most remarkable structures of the ancient world.

How the ancient Egyptians constructed these giant monuments without the help of modern technology confounded historians for centuries. The size, orientation and precision of the pyramids show their amazing skills in mathematics, astronomy, architecture and engineering. Each year more than 10 million tourists visit Egypt to marvel at the museums, temples, pyramids and monuments.

Source 1: Ancient Egyptians used a surveying instrument called a *merkhet* to tell the time at night.

Scientific achievements

Ancient Egyptians also left a legacy through their scientific ideas and inventions, including:

- measuring time using the sundial, water clock and *merkhet* (Source 1)
- their mathematical achievements in using the cubit to measure length and the deben to measure quantities, and using geometry to build the pyramids
- their observations of astronomy, which led to the development of the Egyptian civil calendar, with 360 days and three seasons of 120 days each; the seasons had four months of 30 days; this is the basis of the calendars we use today
- their medical knowledge and remedies, which were the most advanced of any society at the time; ancient Egyptians used herbs and animal products to treat wounds and even performed surgery
- technological advances such as the potter's wheel and the development of the first paper-like material, which was made from papyrus reeds
- the first cosmetics can be traced back to the ancient Egyptians; creams and powders were used to make skin look lighter while black kohl was used as eyeliner and mascara.

Written language

The ancient Egyptians were among the earliest peoples to use symbols to represent individual sounds. Egyptian hieroglyphic script contained 24 symbols that stood for single letters, much like the English alphabet today. Ancient Egyptians also began using papyrus for their written texts.

Source 2: Tourists flock to the pyramids and sphinx at Giza in Cairo, Egypt.

Source 3: Ancient Egyptians invented papyrus in c. 3000 BCE. It was made from thin strips of papyrus reeds that were soaked, pounded, woven together and then pressed into sheets.

Learning ladder H2.14

Impact and legacies

1. Source 2: Identify the major monuments in the source.
2. Source 3: Describe how papyrus was made.
3. Explain how measuring time would change society.
4. Source 2: Explain why ancient Egypt continues to fascinate people.

Significance

1. Identify three significant scientific achievements made by the ancient Egyptians.
2. Describe the significant mathematical achievements of the ancient Egyptians.
3. Explain how the Egyptian calendar is the basis of our calendar today.
4. Source 1: Explain why the merkhet is a significant invention.
5. Analyse the inventions of the ancient Egyptians. Which invention do you think has the greatest significance today and why?

HOW TO Significance, page 202

H2.15

Key individual

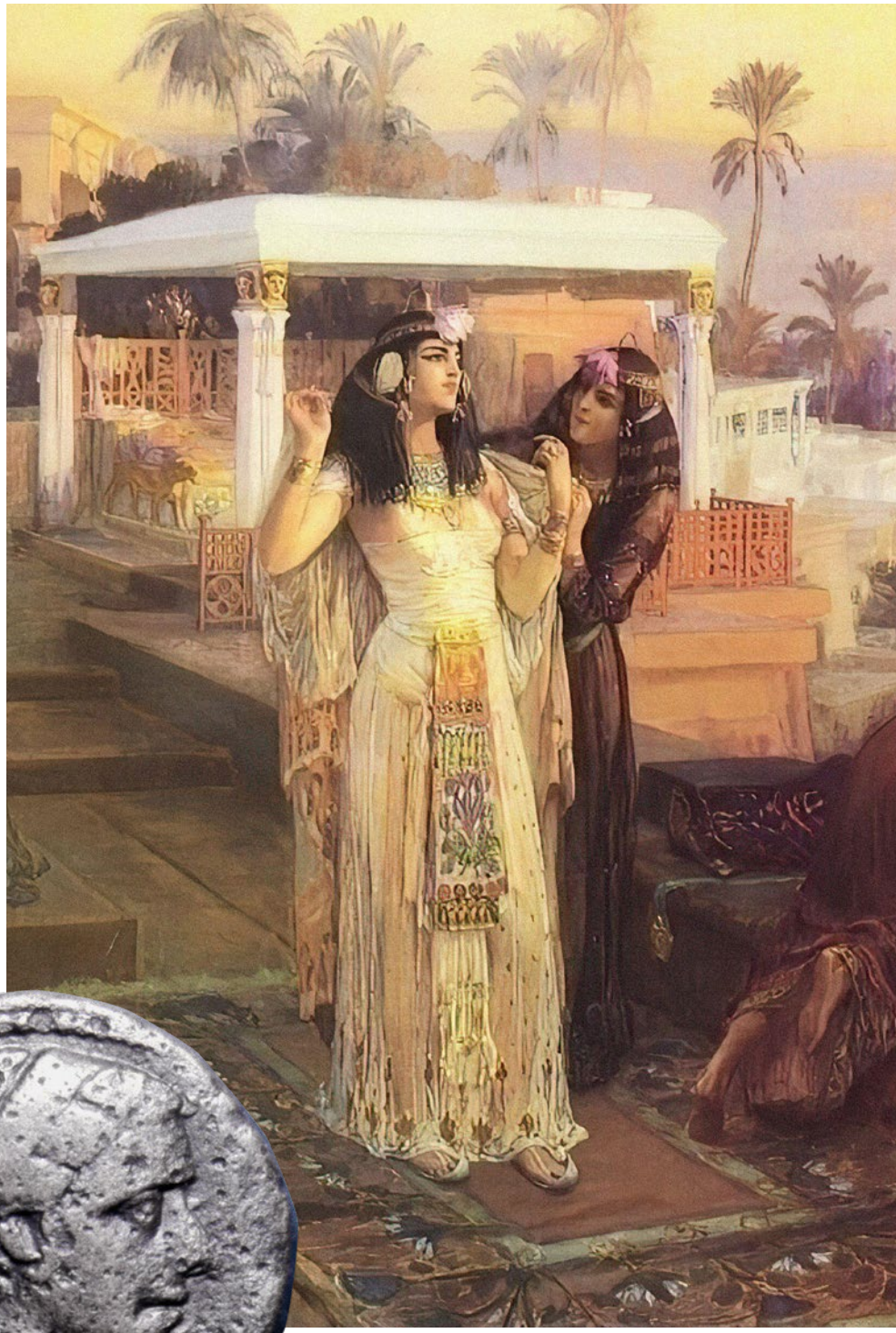
How did Cleopatra rule Egypt?

Cleopatra was smart, cunning and determined to remain powerful, whatever the cost.

Cleopatra was the last pharaoh of ancient Egypt. She became pharaoh in 51 BCE – at the age of 18 – and ruled until 30 BCE when Egypt fell into the hands of the Romans.

Cleopatra's family, the Ptolemaic dynasty, ruled Egypt for nearly 300 years, from the death of Alexander the Great in 323 BCE to Cleopatra's suicide in 30 BCE. Alexander had conquered Egypt in 332 BCE and put it under Greek rule. The founder of the Ptoleaic dynasty, Ptolemy I, had been one of Alexander's favourite generals and he became ruler of Egypt after Alexander's death. Ptolemy I and his successors used Egypt's geographical position to build a rich and powerful trading nation.

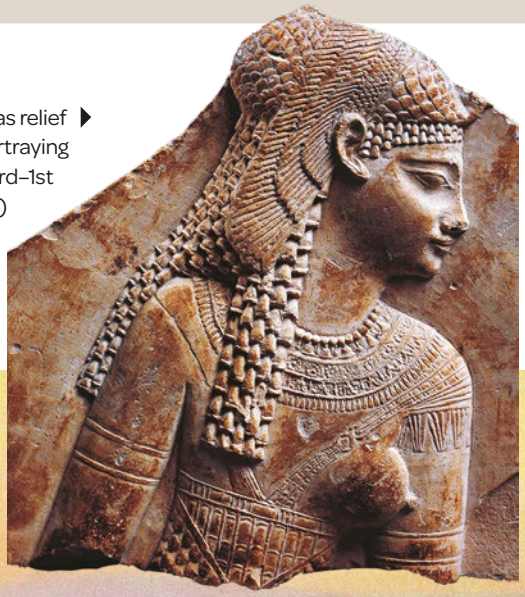
When Ptolemy XII died in 51 BCE, his will set out that 18-year-old Cleopatra and her 10-year-old brother, Ptolemy XIII, would be joint rulers of Egypt. It is likely that Cleopatra married her brother when he was 12 years old; this was customary practice in the ruling families of ancient Egypt as it protected the power of the dynasty.



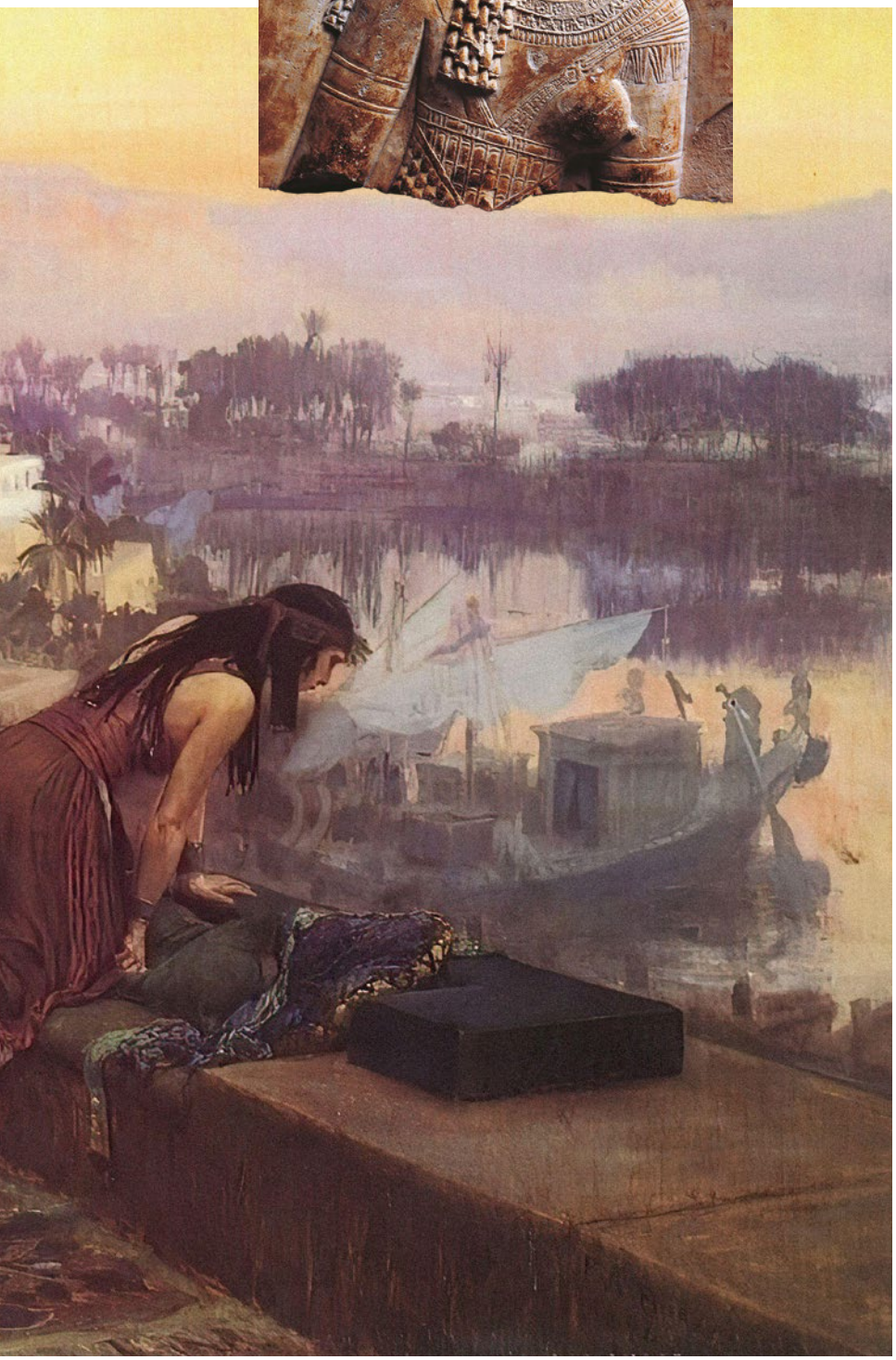
Cleopatra takes control

Cleopatra quickly took control as the main ruler of Egypt, making it clear she had no intention of sharing power. Ptolemy XIII's name was dropped from official documents and Cleopatra's image was the only face on coins.

Source 1: A bronze 80 unit coin with the face of Cleopatra VII (c. 51–30 BCE). Cleopatra stamped her authority by appearing without her joint ruler on coins.



Source 3: Bas relief fragment portraying Cleopatra (3rd–1st century BCE)



Source 2: Frederick Arthur Bridgman (1896 CE), *Cleopatra on the Terraces of Philae*, oil on canvas, Dahesh Museum of Art, New York, USA.

Cleopatra and Caesar

As Ptolemy XIII grew older, he demanded more power. Eventually, he forced Cleopatra from the palace and took over as the sole ruler of Egypt.

Cleopatra needed support from the powerful Romans to regain her position as pharaoh. In 48 BCE, Cleopatra saw her chance when the Roman general Julius Caesar arrived in Egypt.

After taking power in Egypt, Caesar set himself up in a royal palace in the city of Alexandria. Cleopatra could not walk into the palace unrecognised, so legend says she had herself rolled in a rug as a gift for Caesar, which was carried through the enemy lines to his room. Cleopatra persuaded Caesar to use the Roman army to overthrow her brother's forces, which his did at the Battle of the Nile. Ptolemy XIII drowned in the Nile River and Cleopatra was restored as pharaoh of Egypt.

After Ptolemy XIII drowned, Cleopatra married her other brother, Ptolemy XIV, who was next in line to the throne. She continued her union with Caesar, which she saw as important in helping to restore Egypt as a world power. In 47 BCE, Cleopatra gave birth to a son, Ptolemy Caesar, who was known as Caesarion ('little Caesar'). It is thought, although not proven, that he was Julius Caesar's son.

Cleopatra wanted Egypt to remain independent of Rome. She improved the Egyptian economy and established trade with many Arab nations. As ruler of a prosperous Egypt, Cleopatra was popular.

Cleopatra was in Rome when Caesar was assassinated in March 44 BCE. She returned to Egypt, and a few months later Ptolemy XIV died. It is thought that Cleopatra was behind the murder. By September 44 BCE, Caesarion was proclaimed co-ruler of Egypt alongside Cleopatra.

Source 4: Alexandre Cabanel (1887 CE), *Cleopatra testing poisons on condemned prisoners*. This painting shows Cleopatra testing the effects of different poisons on prisoners who had been condemned to death in order to choose the most effective and painless poison to keep with her in case she was forced to take her own life. This painting is not based on historical fact, but is assumed to have happened, due to the later stories about Cleopatra's death.

Cleopatra and Mark Antony

Around 41 BCE, Cleopatra formed an alliance with the Roman general Mark Antony, who was likely to succeed Julius Caesar as the ruler of Rome. Cleopatra wanted her son, Caesarion, to eventually rule Rome. Cleopatra and Antony combined their armies to fight Octavian, who was Caesar's legal heir.

In 31 BCE, Octavian defeated the forces of Cleopatra and Antony in the naval Battle of Actium, which took place in the Ionian Sea off the west coast of Greece. After their defeat, Cleopatra and Antony retreated to Egypt.

The end of the pharaohs

Cleopatra was determined to not let Octavian execute her. She began to test poisons on prisoners to see which would be the best to take her own life.

In 30 BCE, Octavian's forces entered Alexandria, the capital of ancient Egypt, to face Mark Antony. Understanding that he was going to be captured by Octavian, and thinking that Cleopatra had died, Antony stabbed himself with his sword. Before he died, a messenger arrived and told him that Cleopatra still lived. Antony was taken to Cleopatra and tried to convince her to make peace with Octavian.

As Octavian's forces entered Alexandria, Cleopatra and her servants barricaded themselves inside her mausoleum (burial chamber) with stores of gold, pearls, art and other treasures for the afterlife.

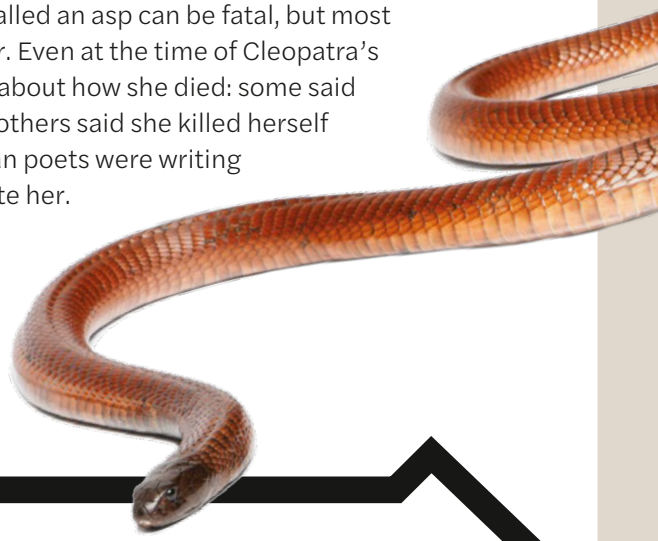
Legend tells us that Cleopatra committed suicide by allowing a venomous snake to bite her. Octavian took control of Egypt and had Cleopatra's son, Caesarion, strangled. This marked the end of the Ptolemaic dynasty and the age of the pharaohs. Egypt became part of the new Roman Empire, with Octavian – now called Emperor Augustus – at the helm as the first Roman emperor.

Did Cleopatra die from a snake bite?

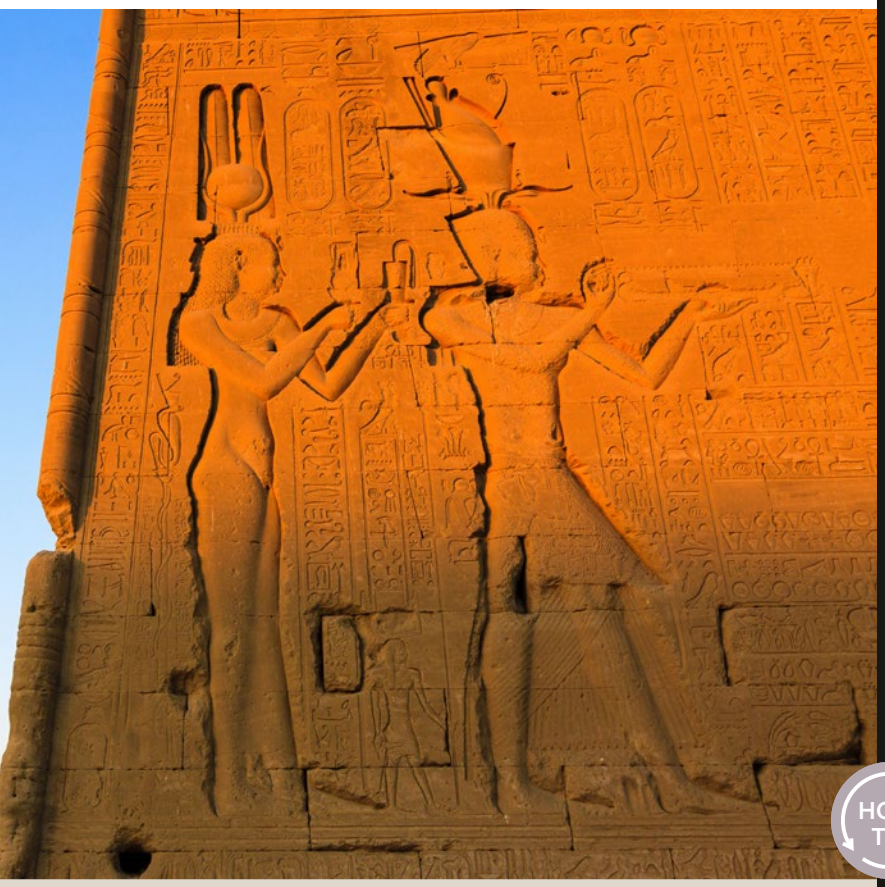
Cleopatra is shown in movies and in paintings taking her own life by allowing a snake to bite her. It is a fabulous story, but is it true?

It is true that the bite of a snake called an asp can be fatal, but most people who are bitten by asps recover. Even at the time of Cleopatra's death, there were conflicting reports about how she died: some said her death was due to an asp bite and others said she killed herself with poison. Within a few years, Roman poets were writing about Cleopatra allowing an asp to bite her. There was no mention of poison.

In the end, the asp story became accepted as truth, either because people wanted to believe it or because it was suitably dramatic.



Source 5: These reliefs of Cleopatra and Caesarion are at the Temple of Hathor near the town of Dendera in Egypt. The main temple was built by Cleopatra's father, Ptolemy XII, and had nearly been completed by Cleopatra when she died in 30 BCE. The construction of the Temple of Hathor was completed around 20 BCE. Hathor is the goddess of the sky, women, fertility and love.



Learning ladder H2.15

Impact and legacies

1. How did the Ptolemaic dynasty build Egypt into a strong nation?
2. Who did Cleopatra turn to when she wanted to regain power from her brother Ptolemy XIII?
3. What role did Cleopatra see for her son Caesarion? What obstacles stood in the way?
4. What events led to Cleopatra's death and the end of pharaohs in Egypt?
5. List the changes that took place in ancient Egypt as a result of contact with outside influences. Identify the changes that were influenced by Cleopatra and the actions she took to make them happen.

Sources

1. Source 5: What type of source is this? When was it created?
2. Source 2: Identify Cleopatra in this painting. List the items in the scene that indicate her royal status.
3. Sources 1 and 3: How do these sources help explain the power held by Cleopatra?
4. Source 4: Explain what is happening in this scene. How reliable is this source of evidence? Consider when it was made and what the artist might be trying to say about Cleopatra.
5. Source 4: How reliable is this source for an historian studying Cleopatra's life?

HOW TO

Sources, page 191

How do I conduct a good inquiry?

Now that you've finished the chapter, it's time to conduct your own historical inquiry on ancient Egypt. Throughout the chapter you have developed knowledge and understanding of ancient Egypt. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own historical inquiry!

A historical inquiry gives you the opportunity to be an active historian: forming questions, interrogating sources and communicating insights about the past on a topic of your choice.

The chapter covered the origins and legacies of ancient Egypt in addition to significant people, events, ideas and beliefs. What would you like to know more about?

- The gods that the ancient Egyptians worshipped, page 92
- The role of female pharaohs in ancient Egypt, page 102
- The life of Tutankhamun, page 96
- The Battle of Kadesh, page 87
- The monuments of ancient Egypt, page 98

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas.

Once you have worked through this process, you are ready to start the historical inquiry. Refer to pages 208–213 of the How-to chapter for a step-by-step guide to this process.

See

What do you see?
Who is involved?
What are the key features?
When and where was this happening?

Think

What do you think about that?
How do you think people were affected at the time?
How is this similar to or different from today?

Wonder

What does it make you wonder?
What did different groups think about this?
Why is this important to know?

Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to expand your knowledge and attempt new skills.
When planning your inquiry, consider how the experiences and perspectives of individuals and groups shaped societies, beliefs and events in the past. Think about how the past has had an impact on the present. Use the How-to chapter to support your planning and research.

Ancient societies
(10 000 BCE – 600 CE)

Ancient India

H3

WHY IS VISHNU THE PRESERVER?

WHAT WAS DAILY LIFE LIKE?

WHY DID EMPEROR ASHOKA SPREAD PEACE?

HOW WERE WAR ELEPHANTS USED?

How can I understand ancient India?

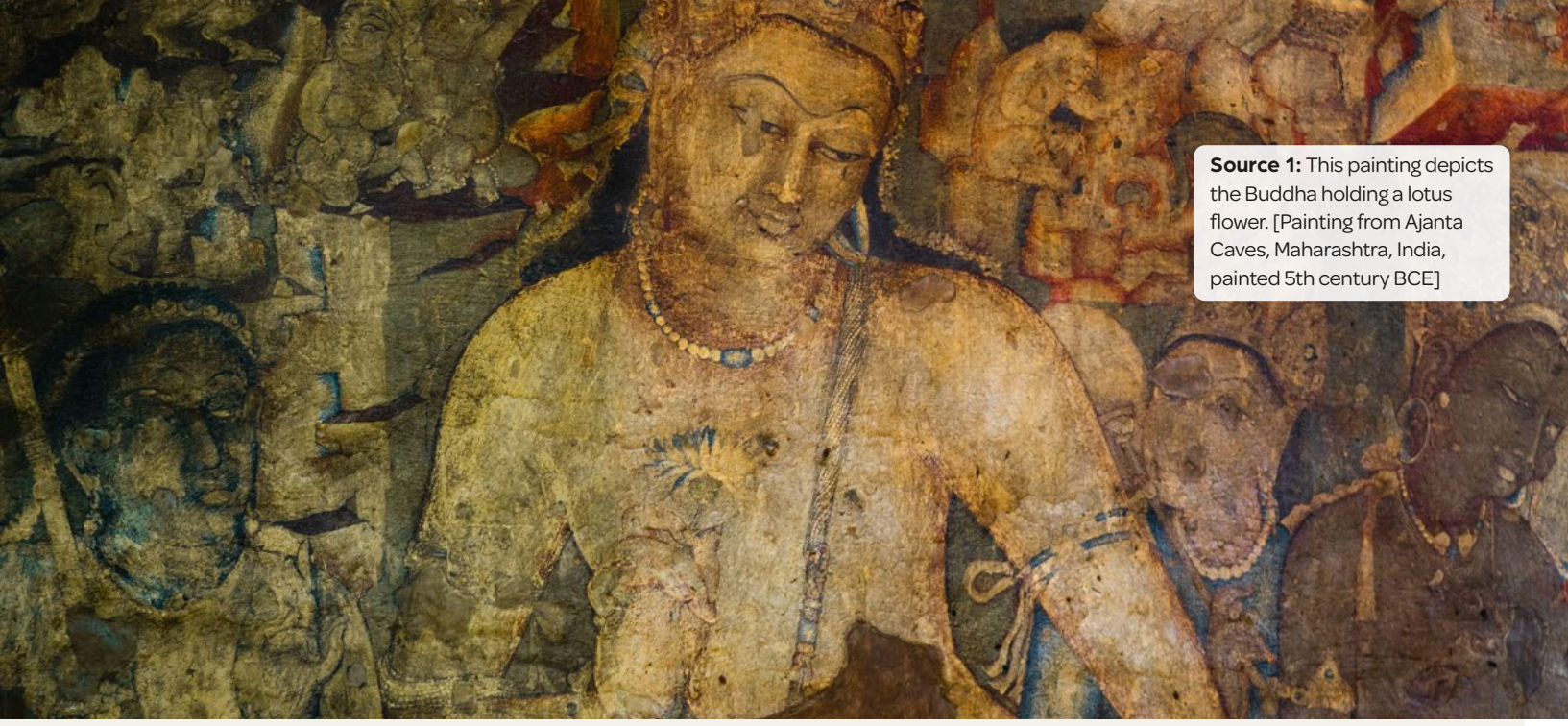
The ancient Indian society flourished from around 2800 BCE to 550 BCE. The developments of the society spawned two of the world's most important religions today – Hinduism and Buddhism – and led to breakthroughs in mathematics.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Background and origins	Significant people, ideas and events	Impact and legacies	Continuity and change	Causes and consequences
5	I can evaluate the impact of the rise and fall of societies.	I can evaluate how societies were influenced by significant people and ideas.	I can evaluate the legacy of a society.	I can evaluate patterns of continuity and/or change.	I can analyse causes and consequences.
4	I can explain why a society developed.	I can explain why ideas influenced people and events.	I can explain why a society has a legacy.	I can explain patterns of continuity and/or change.	I can explain why something was caused or why it led to certain consequences.
3	I can explain how a society developed.	I can explain how ideas influenced people and events.	I can explain the impact of one society on another.	I can explain continuity and change.	I can explain how something was caused or its consequence.
2	I can describe the origins of societies.	I can describe key people, ideas and events.	I can describe the legacy of a society.	I can describe continuity and change.	I can describe causes and consequences.
1	I can identify the origins of societies.	I can identify key people, ideas and events.	I can identify the legacy of a society.	I can identify continuity and change.	I can identify a cause and a consequence.

Knowledge and understanding



Source 1: This painting depicts the Buddha holding a lotus flower. [Painting from Ajanta Caves, Maharashtra, India, painted 5th century BCE]

I can evaluate historical perspectives.	I can evaluate historical significance.	I can evaluate the evidence supporting a historical interpretation.	I can explain change or causality from a timeline.	I can evaluate sources to determine their accuracy, usefulness and reliability.	5
I can compare perspectives.	I can explain why something is historically significant.	I can compare historical interpretations.	I can summarise the events on a timeline.	I can explain the historical context of a source.	4
I can explain a perspective.	I can explain something historically significant.	I can explain an interpretation of history.	I can follow timeline conventions.	I can apply historical knowledge to explain sources.	3
I can describe perspectives.	I can describe something historically significant.	I can describe an interpretation of history.	I can place events on a timeline chronologically.	I can describe a source.	2
I can identify the perspective of a person from the past.	I can identify something historically significant.	I can identify a historical debate.	I can read a timeline.	I can identify the origin of a source.	1
Perspectives	**Significance**	**Interpretations**	**Chronology**	**Sources**	Steps in skills progression

Historical concepts and skills

What is ancient India?

Ancient India saw the rise and fall of several societies, cities, kingdoms and empires.

The Indus Valley society

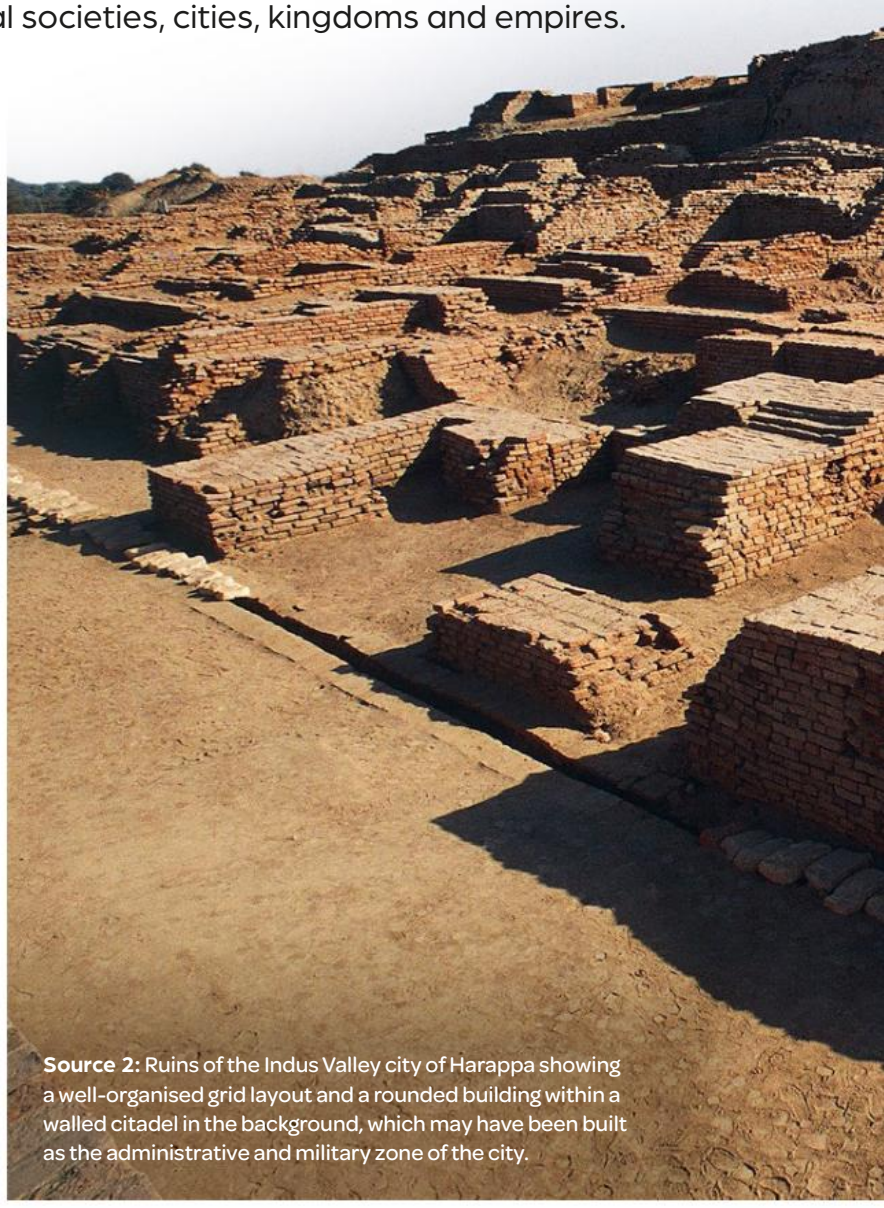
The first great Indian society, known as the Indus Valley society, lasted from 2800 BCE to 1300 BCE. The people of the Indus Valley formed one of the oldest settled societies in the world, with cities, multi-storied houses and bronze tools. Around 1800 BCE, the Indus Valley society was affected by a severe and prolonged drought. This, along with a collapse in trade with Egypt and Mesopotamia (Iraq), led to the abandonment of the cities by 1700 BCE and a gradual collapse of the Indus Valley society.

The Vedic society

From about 2000 BCE onward, small groups of people, known as Indo-Aryans, travelled south into India. The Indo-Aryans used iron tools, horses and chariots. They established a new society in India, known as the Vedic society (2000–500 BCE). The Vedic society is famous for the *Rigveda* (1700–1100 BCE), a book of Hindu hymns and scriptures written in Sanskrit.

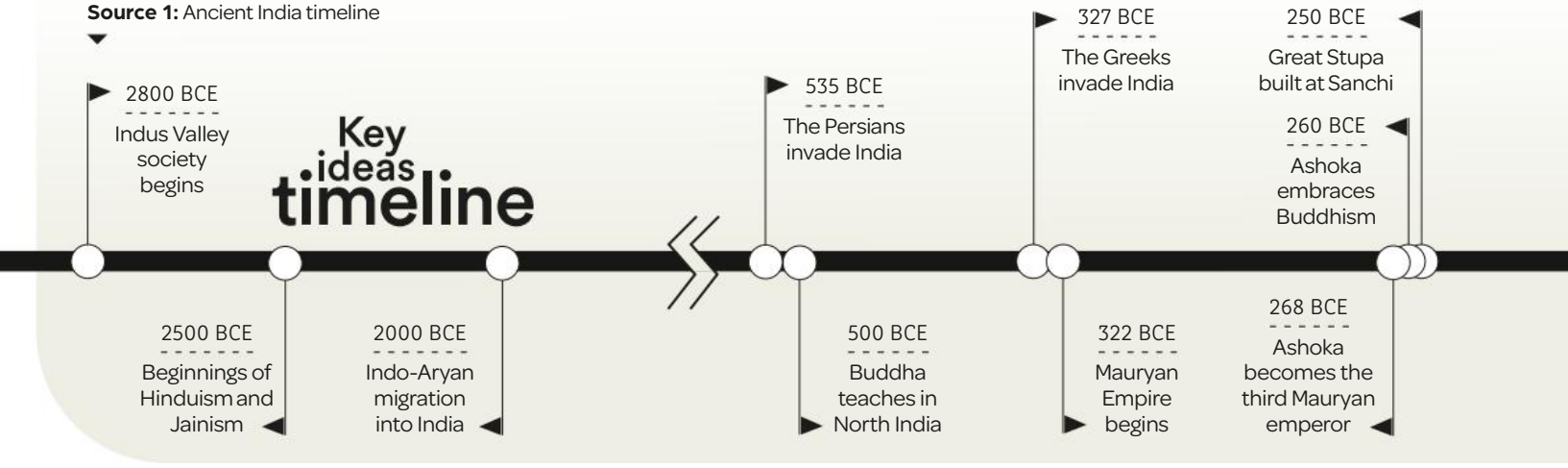
The Mauryan Empire

The Indus River region was conquered by the Persians in 516 BCE and by the Greeks in 327 BCE. It was not until 322 BCE that the Indian Mauryan Empire managed to regain control of the Indus Valley. During the Mauryan period, communication, trade and Buddhism expanded across South-East Asia. The Mauryan Empire lasted until 185 BCE.



Source 2: Ruins of the Indus Valley city of Harappa showing a well-organised grid layout and a rounded building within a walled citadel in the background, which may have been built as the administrative and military zone of the city.

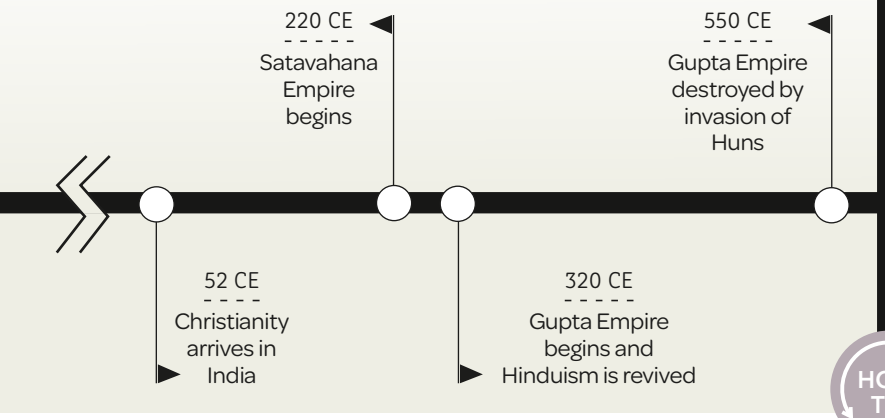
Source 1: Ancient India timeline



The Gupta Empire

The Gupta Empire (320–550 CE) is sometimes referred to as the 'golden age' of India. Great developments occurred in literature, architecture and science, and Hinduism was revived as India's main religion. Indian culture became very influential in South-East Asia.

Source 3: Bronze ox (c. 2000 BCE) found at Harappa



Learning ladder H3.1

Background and origins

1. List the four major periods in ancient Indian history.
2. Describe the Gupta Empire.
3. Sources 1 and 2: Using the sources and your knowledge, explain the features of the Indus Valley society.
4. Explain why the Mauryan and Gupta empires had a significant impact on South-East Asia.

Chronology

1. Source 1: When was the Great Stupa built?
2. List these events in chronological order, from the oldest to the most recent:
   - 322 BCE: Chandragupta I becomes emperor
   - 326 BCE: Battle of the Hydaspes
   - 563 BCE: The Buddha is born
   - c.500 BCE: The Indian epic the 'Ramanyana' is written.
3. Create a timeline using the events in Question 2.
4. Source 1: Explain how the timeline demonstrates the concept of religious continuity and change.

HOW TO

Chronology, page 188

How did India's geography influence its development?

India's geography supported the development of a dynamic society that was at the heart of the ancient world, enabling a steady flow of trade goods, military technology and religious ideas between India and other societies to its north, east and west.

Physical features of the region

Ancient India was divided into three main geographical regions: the great triangular peninsula that projects into the Indian Ocean; the Himalayan and Karakorum mountain regions to the north and west; and the river plains of northern India, stretching from the Indus River in the west to the Ganges River in the east. All three areas have played a role in its history.

The peninsula

India is called a peninsula because it is surrounded by water on three sides: the Indian Ocean to the south, the Arabian Sea to the west, and the Bay of Bengal to the east. Small fishing settlements began to appear in the coastal regions from 6000 BCE. By c. 350 BCE, the settlements had grown into established trade towns. There was a vibrant sea trade between these towns and Arabia, Greece and Rome to the west and South-East Asia to the east.

Mountain ranges called the Eastern Ghats and the Western Ghats frame the Deccan Plateau. This area was the main source of India's timber and elephants. Elephants were used for transport and also played a role in warfare.

Mountains

The Indian subcontinent is separated from Afghanistan and Iran by the Hindu Kush and Karakoram Mountains, and from China and Tibet by the Himalayan Mountains. The Karakoram Pass, a road through the Karakoram Mountains, was the route Indian merchants used to join the great Silk Road trade route from China to Europe. Access to the Silk Road brought India into contact with ideas, goods and technology from societies in Asia, the Middle East, north Africa and Europe.

Ancient India

▲ **Source 1:** Key physical features of India

Source: Matilda Education Australia

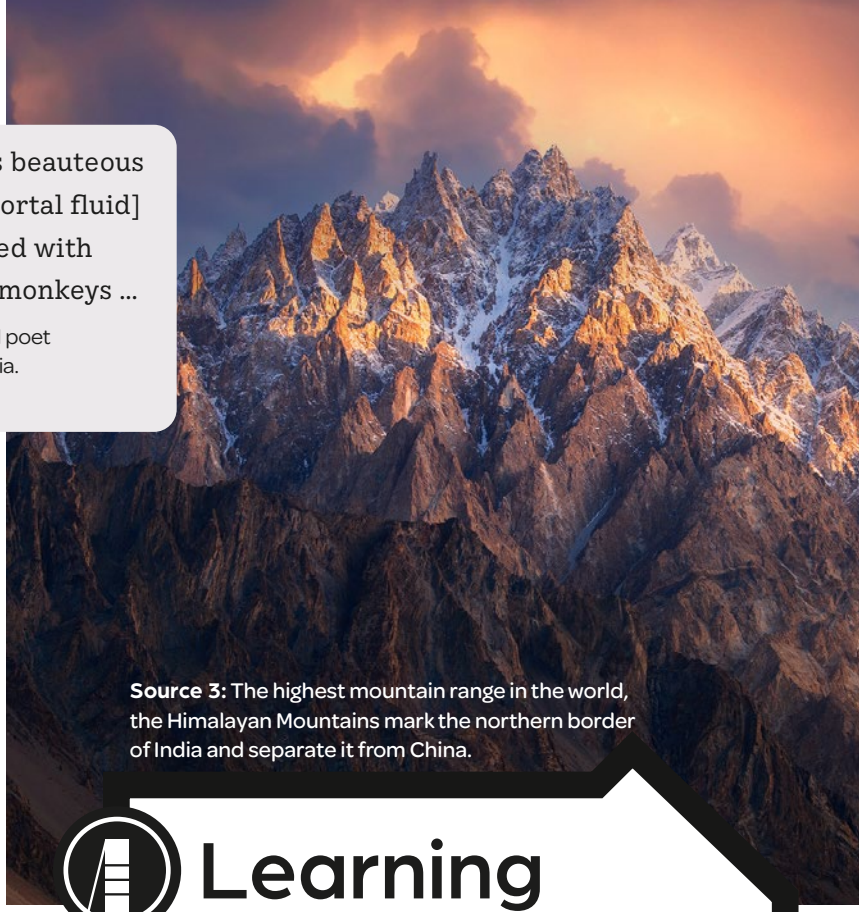
There is a forest, by name Vindhya ... It is beauteous with trees watered with the ichor [immortal fluid] of wild elephants ... the ground is covered with torn fruit and leaves shaken down by restless monkeys ...

Source 2: This was written by Banabhatta, who was a writer and poet in the court of King Harsha Vardhana (606–647 CE) in north India. [Banabhatta (c. 650 CE), *Kadambari*]

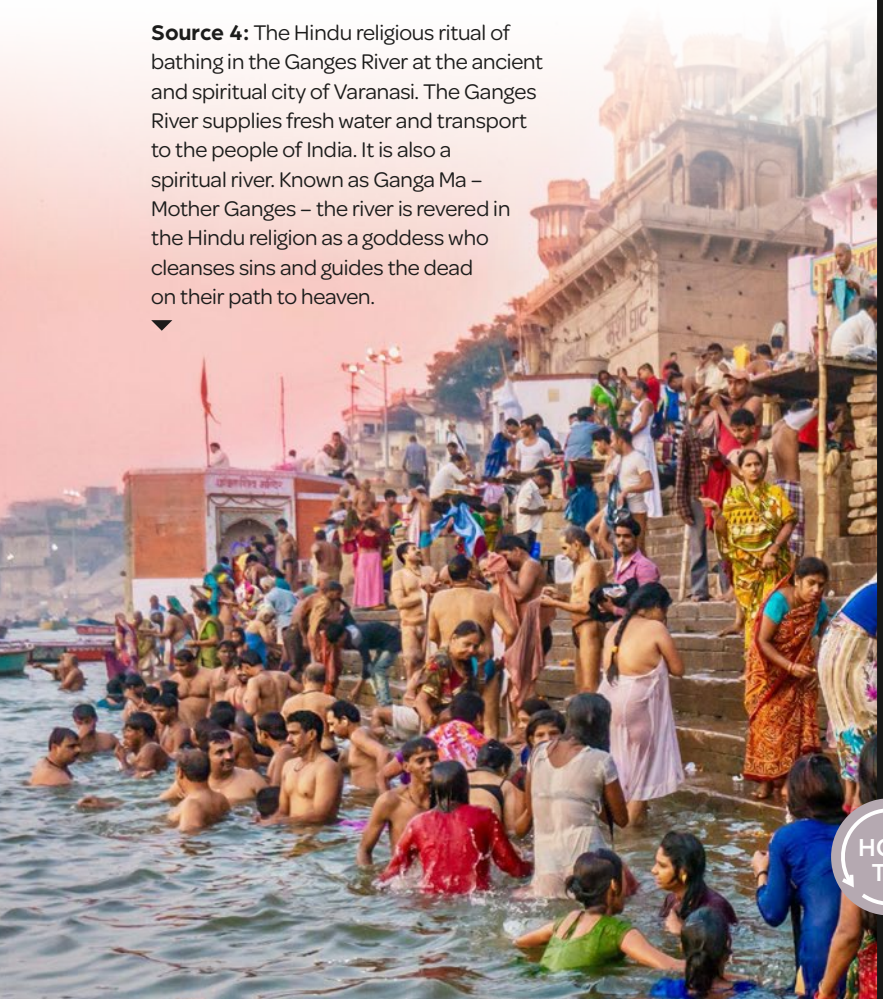
The mountains that frame India protected the country to the east, but the Khyber and the Bolan passes in the north-west allowed a series of invaders into the west River Plains region, including the Persians under King Darius I in 516 BCE and the Greeks under Alexander the Great from 327 BCE to 325 BCE.

River plains

Three great rivers run through India: the Indus, the Brahmaputra and the Ganges. The first great Indian society, known as the Indus Valley, was centred on the Indus River plains. The soils of the Indus River plains, known as **khadar** soils, are rich and fertile. The Indus people grew rice, wheat, lentils, beans and cotton. The fresh water and fertile soils made the Indus Valley a good place to settle.



Source 3: The highest mountain range in the world, the Himalayan Mountains mark the northern border of India and separate it from China.



Source 4: The Hindu religious ritual of bathing in the Ganges River at the ancient and spiritual city of Varanasi. The Ganges River supplies fresh water and transport to the people of India. It is also a spiritual river. Known as Ganga Ma – Mother Ganges – the river is revered in the Hindu religion as a goddess who cleanses sins and guides the dead on their path to heaven.

Learning ladder H3.2

Background and origins

1. Source 1: Identify the three main geographical features that influenced the development of ancient Indian society.
2. Describe the key geographical features of ancient India.
3. Source 4: Explain how the Ganges River is significant to Hindus.
4. Explain why the coastal plains of India were important to its development of international sea-trade links.
5. Sources 1, 3 and 4: Analyse the importance of the geographical features of India to the development of ancient Indian trade, warfare and religion.

Causes and consequences

1. Source 2: Identify the cause of the torn fruit and leaves on the ground of the forests.
2. Describe the consequence of the rivers on the settlement of the Indus Valley.
3. Explain how the Indus River plains were a cause of the development of the Indus Valley society.
4. Explain why the Kharakorum Pass had consequences for Indian trade and society.
5. Evaluate the positive and negative consequences of the mountain passes for ancient India.

HOW TO Causes and consequences, page 196

How did the world begin?

The people of ancient India followed a number of different religions, each with its own creation myth. Of these, the Hindu creation story is the best known. Hinduism developed over 5000 years, with its origins stretching back to the Indus Valley society.

The Hindu creation story

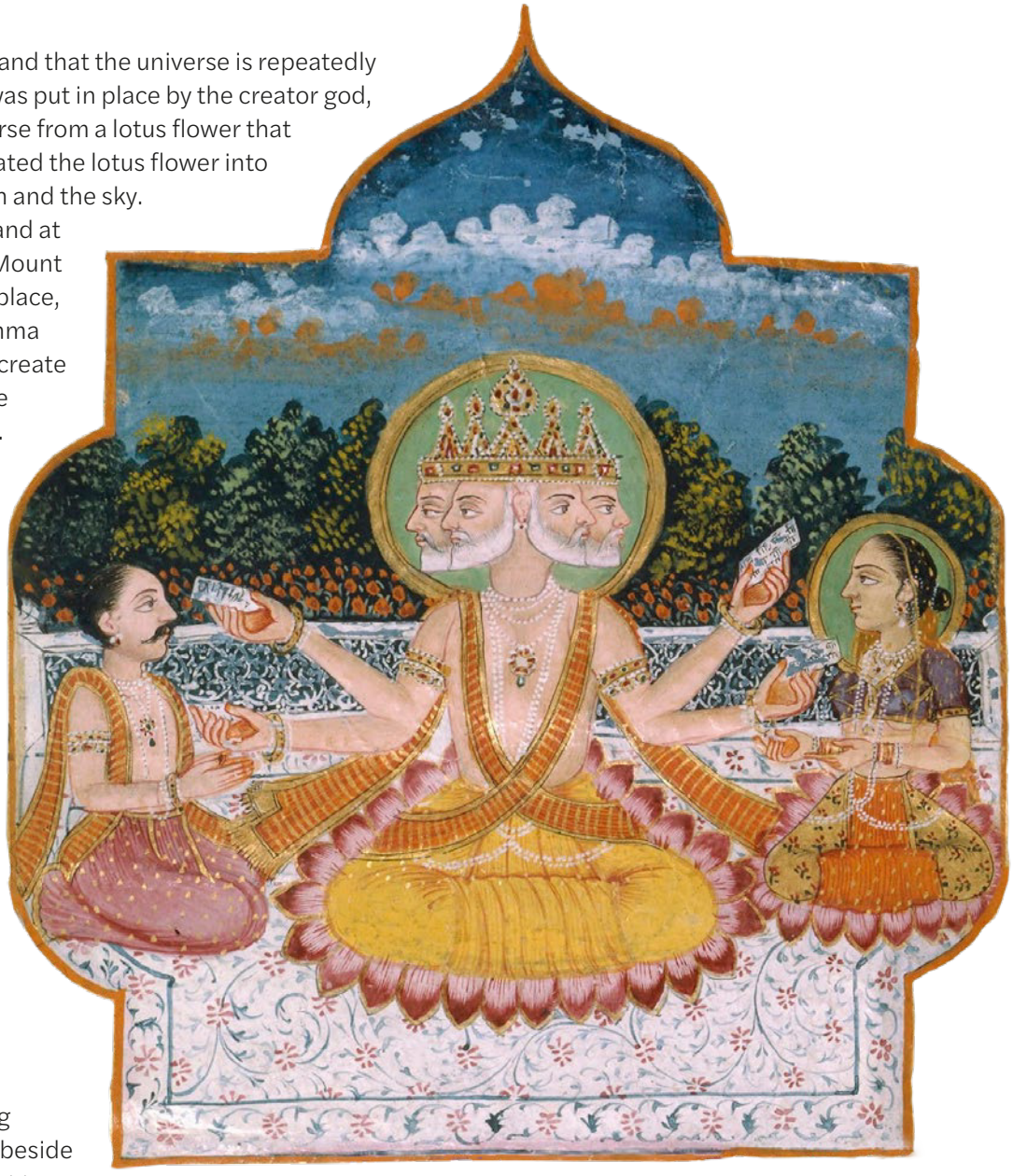
Hindus believe that time is cyclical and that the universe is repeatedly created and destroyed. This cycle was put in place by the creator god, Brahma. Brahma created the universe from a lotus flower that grew from his navel. Brahma separated the lotus flower into three parts – the heavens, the earth and the sky. The earth was shaped like a wheel and at its centre was a mountain, named Mount Meru. Mount Meru was a heavenly place, encircled by the River Ganges. Brahma then split himself into two parts to create a male and a female. From this male and female all beings were created.

After Brahma created the world, the god Vishnu preserved the world and its people. Shiva, the god of death, will ultimately destroy the universe, allowing Brahma to start the process of creation all over again.

The Great Flood

One of the most popular Hindu stories is that of Manu and the Great Flood. Manu was the father of the human race. He is believed to have written the *Manusmriti* (Laws of Manu), an important book of laws that all Hindus must follow.

In the story, Manu had lived for 10 000 years, faithfully worshipping Brahma. One day Manu was sitting beside a stream when a small fish called out to him from the water: 'Please, protect me! This bigger fish is chasing me!' Manu scooped up the little fish and placed it in a pond. The fish started to grow and quickly became too big for the pond.



Source 1: The Hindu god Brahma (centre), recognisable by his four faces, with Chitragupta (left), who records the activities of humans, and Sarasvati (right), the goddess of wisdom. [An illustration by an unknown artist from the *Bhagavata Purana*, 1793 CE]

The fish called out to Manu again, 'Please, place me into the River Ganges.' Manu did as the fish asked. But again, the fish began to grow, and before long was too large for the river. 'Please, take me to the ocean,' asked the fish. When Manu put the fish into the ocean, it revealed itself to be none other than Brahma himself. Brahma then warned Manu of the coming destruction of the world by a great flood.

'Build an ark,' Brahma advised, 'and place in it the seven wise people (***rishi***) and the seeds of everything.' As soon as Manu had built his ark and filled it as Brahma had told him, it began to rain. It rained so much that everything in the world was covered with water and destroyed. Meanwhile, the ark floated on the water. When the waters receded, the ark came to rest on the highest peak of the Himalayas. Manu left the ark and began to prepare for the new age.

O best Mother, best River, best Goddess, Sarasvati, as soon as we are without (the power of) expression, O Mother, create for us expression.

Source 3: The *Rigveda*, II:41:16 (c. 1700–1000 BCE). The *Rigveda* is a collection of hymns written during the Vedic period.

▲ **Source 2:** Manu and the seven *rishi* in the ark, with Brahma in fish form, during the Great Flood

Learning ladder H3.3

Background and origins

1. Source 1: Identify the Hindu creator god shown in this source.
2. Describe the Hindu understanding of time.
3. Explain how the world was created, according to Hindu mythology.
4. Explain why the Great Flood story is an example of the Hindu concept of cyclical time.

Sources

1. Source 1: Identify the origin of the source.
2. Source 2: Describe the scene shown in the source.
3. Source 3: Explain how the goddess of wisdom, Sarasvati, is described in this source.
4. Source 2: Explain why Manu is an important figure in Indian mythology.

Sources, page 191

HOW TO

How was ancient Indian society organised?

Ancient Indian society was based the caste system, which divided people into four classes based on occupation and birth. Outside of the caste system were the 'untouchables' and slaves.

India's caste system

A key feature of ancient Indian society was its division into four **castes**. The caste system originated with the arrival of Indo-Aryans into India from c. 2000 BCE.

Early Brahman scriptures organised the people of tribal societies into four **varnas**. The word 'varna' means 'class of men'. The four varnas are said to have originated from Brahma, the Hindu god of creation. According to the Rigveda hymns, a cosmic man named Purusha used his body to create society. Brahmans (leaders) came from Purusha's head, Kshatriyas (warriors) from his arms, Vaishyas (commoners) from his thighs and Shudras (labourers) from his feet (Source 2).

Your caste determined your place in society and your occupation. Your caste also determined who you could marry, a system that persists today. A survey in 2016 CE revealed that only 5 per cent of marriages in India are between people from different castes.

While the Brahman scriptures defined the varnas, they did not state that people had to remain in the caste they were born into. Furthermore, the early scriptures do not place any restrictions on the lower caste, Shudra, participating in religious rituals. By 200 CE, however, the *Manusmriti* had been written and became much more important in Hinduism. The *Manusmriti* contained laws that restricted a person to the caste they were born into and forbade Shudras from participating in religious rituals. Modern-day Hindus disagree over whether the *Manusmriti* is meant to be taken literally or is meant as a guide for the caste system.

Untouchables

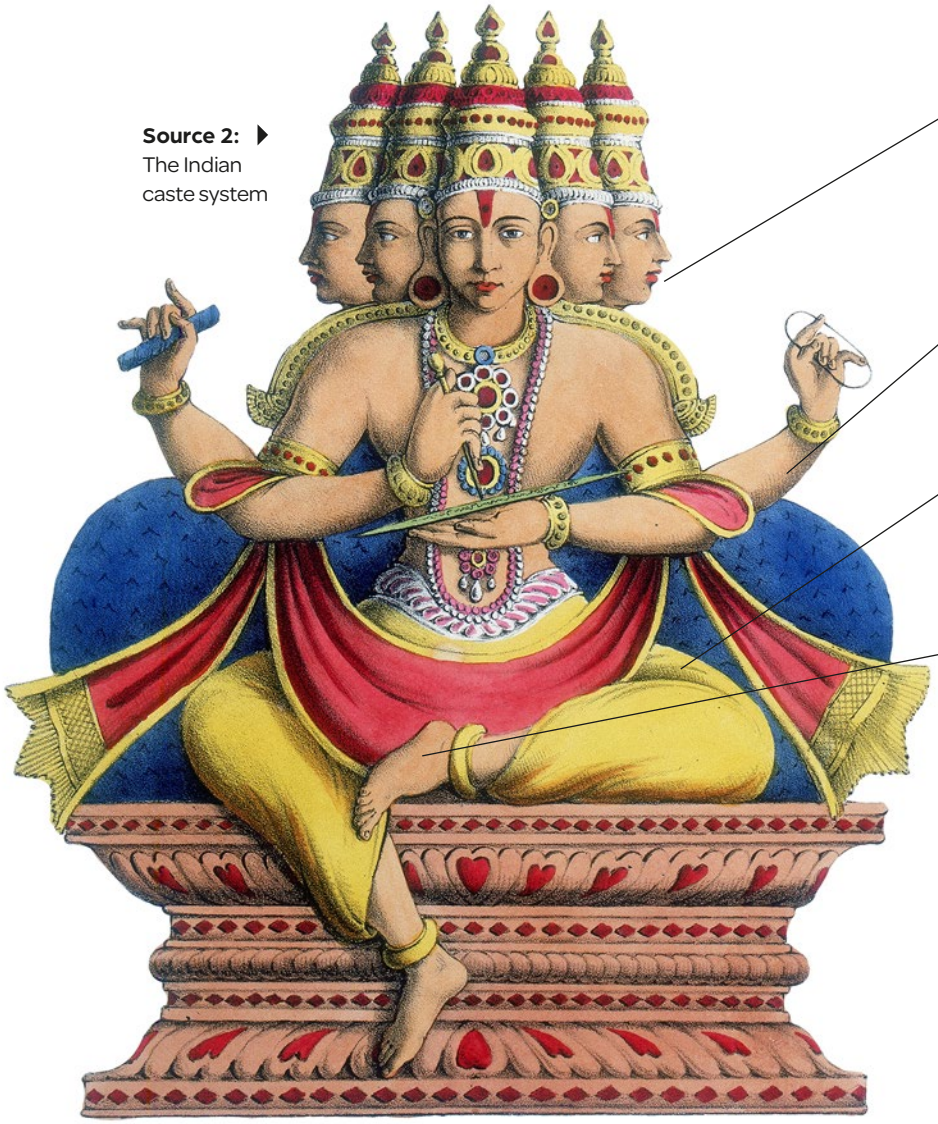
Outside the caste system were the 'untouchables' (now known as Dalits), the poorest, dark-skinned Indians who swept the streets, buried the dead and collected garbage. They were regarded as impure. They were forbidden from using the same wells as higher-caste Indians and from living in the villages. Untouchables made up about 5 per cent of the ancient Indian population.

Source 1: This street sweeper is one of hundreds of millions of untouchables and lower-caste Hindus.

Slaves

Another group of individuals who sat outside the caste system were slaves. Slaves were usually people who had been captured during war, but sometimes were people who had sold themselves into slavery in order to pay off their debts. Slaves mainly worked in upper-caste households doing domestic work. Slaves were rarely set free, unless they saved their master from death or they managed to pay off their debts (as slaves could earn money in their spare time). Although slavery was outlawed in India between 1860 CE and 1926 CE, there are around 8 million people in India today who are illegally enslaved.

Source 2: ▶ The Indian caste system



Brahmans: mouth

Duties: teaching, studying and performing sacrificial rites; later, thinkers, law-givers, judges and ministers of state as well as priests.

Kshatriyas (2nd class): arms

Duties: protection of the people. They were kings, nobles and warriors.

Vaisyas (3rd class): thighs

Duties: tending of cattle, trade and commerce. They were landowners, merchants and money lenders.

Shudras (4th class): feet

Duties: service to the other three classes. They were workers, craftspeople and peasants, all of whom were barred from taking part in Aryan religious rituals.

Dalits

Outside of the Hindu caste system were the Dalits or the untouchables. They were the poorest group in society, who swept the streets and collected the garbage.

Learning ladder H3.4

Significant people, ideas and events

1. Identify the four classes in the caste system and the two groups outside the caste system.
2. Source 2: Describe each of the four classes in the caste system.
3. Explain the role of the groups outside the caste system.
4. Explain how the caste system developed.
5. Why was the untouchable class important to the development of ancient Indian society?

HOW TO

Continuity and change, page 193

Continuity and change

1. Source 1: Identify how this image represents continuity from ancient India to today.
2. Describe how the practice of slavery has changed in India from the ancient period to today.
3. Explain how the caste system has remained the same since ancient times.
4. Explain why a person could not change their caste after the 1st century BCE.
5. Which groups would be reluctant to change the caste system? Why?

What did the ancient Indians believe?

The ancient Indians developed many different religions, the most important of which were Brahmanism, Hinduism, Buddhism and Jainism. All four contained the idea of rebirth, and the concept of seeking escape from the endless cycle of life and death.

Brahmanism

Brahmanism was the religion of the Vedic culture. Its main religious texts are the 'Four Vedas': the Rigveda, the Yajurveda, the Samaveda and the Atharvaveda. The Sanskrit word for prayer is 'brahman', and the priests who conducted the rituals that protected believers were also called Brahmans. Brahmanism said that if you behaved well in this life, you would be reborn into a higher class in the next life. If you behaved badly, you would be reborn into a lower class or even as an animal. The only way of escape was to work your way up through rebirths to being a Brahman (priest). If you then led a good life, you would finally free your soul to reach Supreme Bliss.

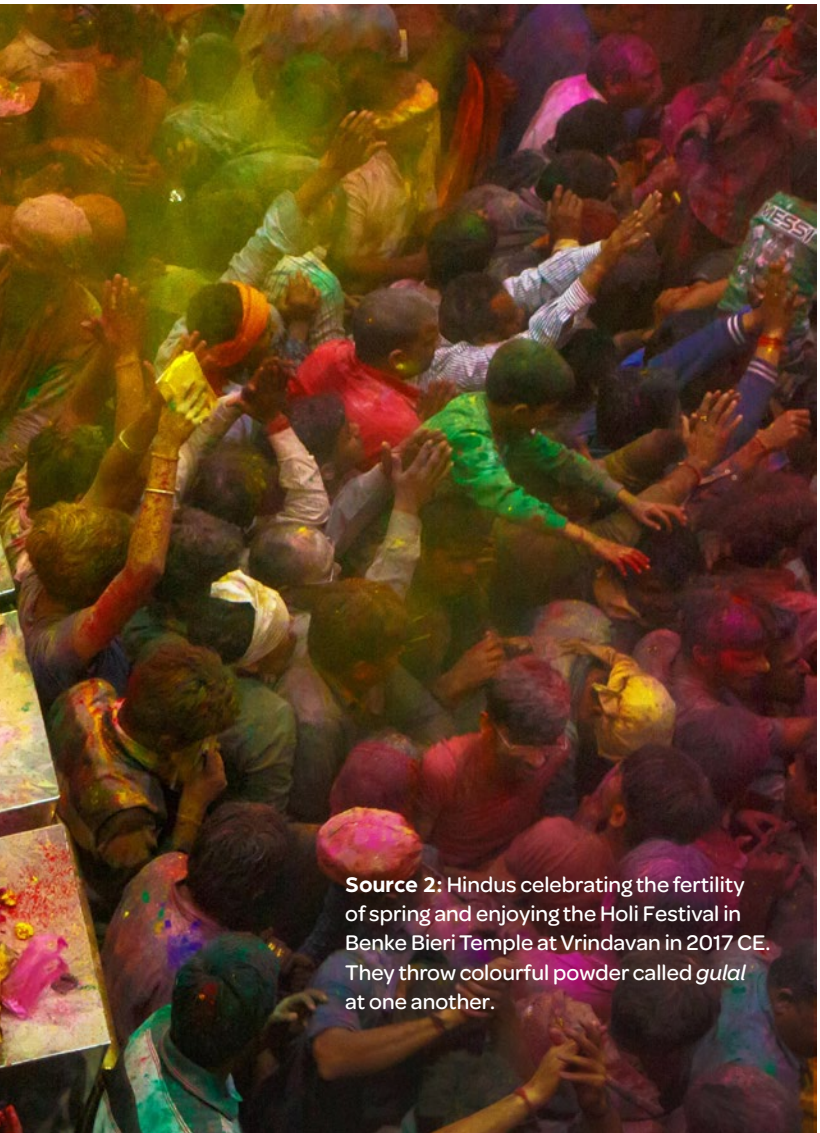
Hinduism

Hinduism, which is the dominant religion in India today, developed out of Brahmanism. The sacred texts of Hinduism are the Four Vedas that originated in Brahmanism, as well as later texts such as the Upanishads and the epic poems the 'Mahabharata' and the 'Ramayana'.

Hinduism began to take the form known today in the time of the Gupta emperors – that is, in the 4th century CE. It was under the Guptas that the first statues of the gods and the first Hindu temples were created, either in brick or carved into rock.

There are hundreds of Hindu gods and goddesses, but the two main gods are Vishnu and Shiva. Hindus do not need Brahman priests to conduct rituals to protect them. They can take part in fasts and in pilgrimages to their gods' shrines, thus helping themselves to become a Brahman and freeing themselves from rebirth.

Hindu followers believe bathing in the holy waters of the Ganges River washes away their sins and allows them to be freed from the cycle of rebirth. Known as *Ganga Ma* – Mother Ganges – the river is revered in the Hindu religion as a goddess who cleanses sins and guides the dead to heaven. Pilgrims travel from all over India to important spiritual places such as Varanasi to scatter the ashes of their relatives on the holy waters so their souls will go to Heaven.



Source 2: Hindus celebrating the fertility of spring and enjoying the Holi Festival in Benke Bieri Temple at Vrindavan in 2017 CE. They throw colourful powder called *gulal* at one another.

Source 1: Standing four-armed Vishnu, c. 450 CE, found in Uttar Pradesh, India

Source 3: Buddhist monks praying in front of the holy Bodhi Tree at Bodh Gaya, where Buddha experienced enlightenment.

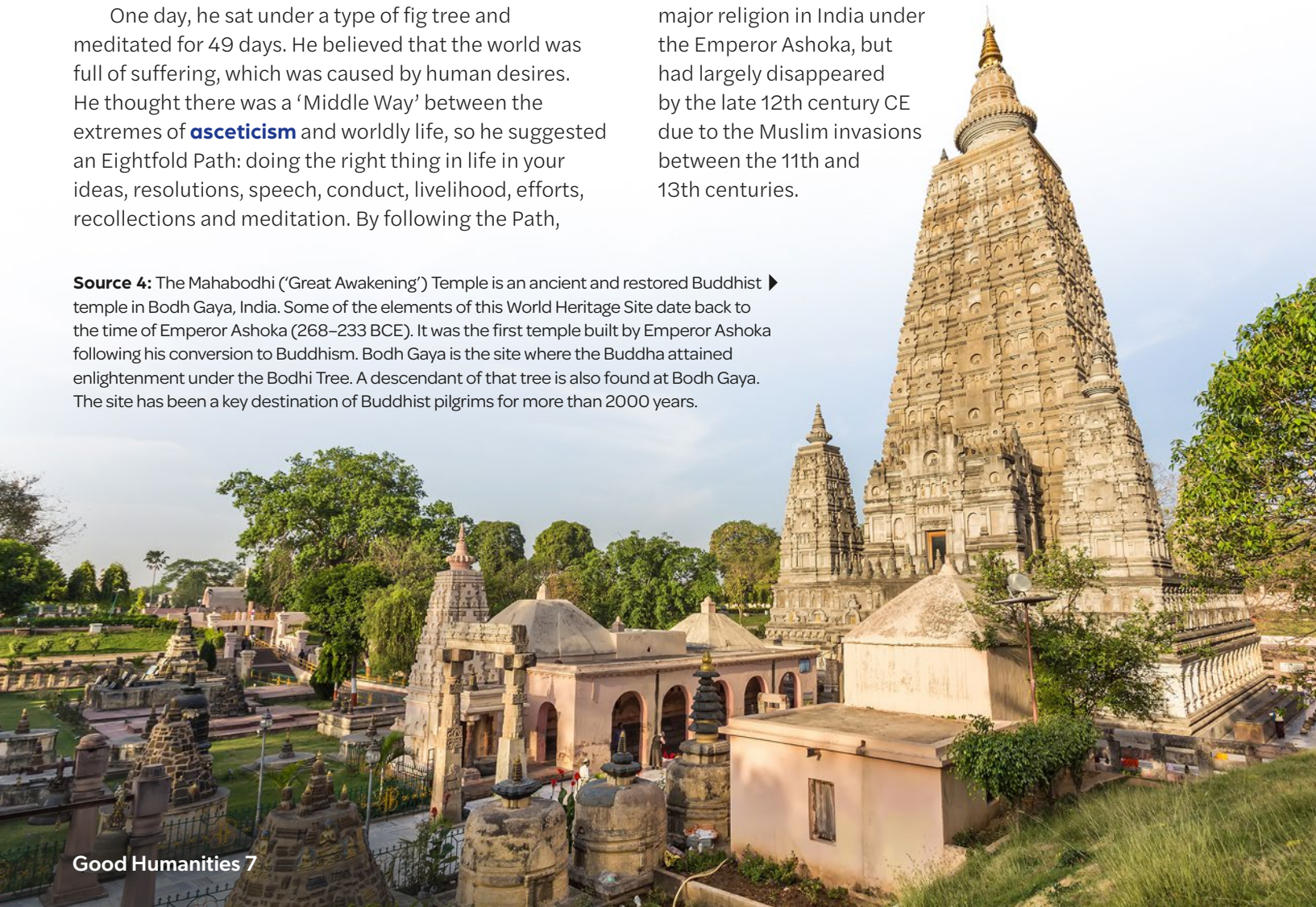
Buddhism

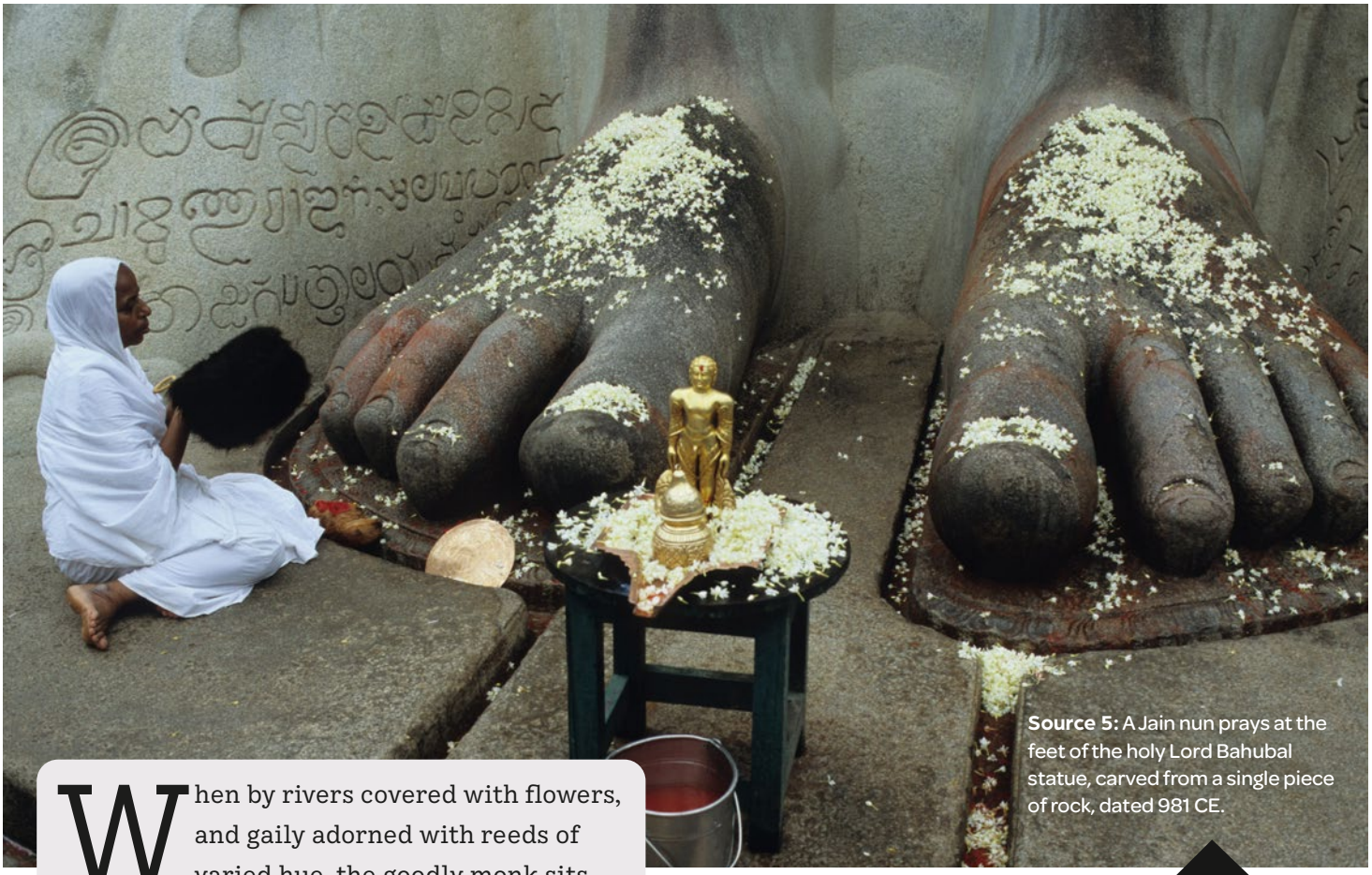
The Buddha (c. 563–483 BCE) was born as Siddhartha Gautama, the son of a Hindu **rajah** from the Shakyan tribal republic in north India. When he was 29 years old, Gautama decided to leave his wife and children and seek salvation. First, he tried punishing his body with beatings and starvation, but that did not help.

One day, he sat under a type of fig tree and meditated for 49 days. He believed that the world was full of suffering, which was caused by human desires. He thought there was a 'Middle Way' between the extremes of **asceticism** and worldly life, so he suggested an Eightfold Path: doing the right thing in life in your ideas, resolutions, speech, conduct, livelihood, efforts, recollections and meditation. By following the Path, the soul would reach **nirvana** without going through the cycle of rebirths. Gautama was now the Buddha or the 'Enlightened One' and he set out to preach and convert others to his way of thinking. The tree under which he sat is known as the Bodhi Tree because it is here that the Buddha achieved *bodhi* or enlightenment.

Buddhism became a major religion in India under the Emperor Ashoka, but had largely disappeared by the late 12th century CE due to the Muslim invasions between the 11th and 13th centuries.

Source 4: The Mahabodhi ('Great Awakening') Temple is an ancient and restored Buddhist temple in Bodh Gaya, India. Some of the elements of this World Heritage Site date back to the time of Emperor Ashoka (268–233 BCE). It was the first temple built by Emperor Ashoka following his conversion to Buddhism. Bodh Gaya is the site where the Buddha attained enlightenment under the Bodhi Tree. A descendant of that tree is also found at Bodh Gaya. The site has been a key destination of Buddhist pilgrims for more than 2000 years.





Source 5: A Jain nun prays at the feet of the holy Lord Bahubal statue, carved from a single piece of rock, dated 981 CE.

When by rivers covered with flowers, and gaily adorned with reeds of varied hue, the goodly monk sits on the bank in ecstasy, and he finds no greater joy than this. When the rain pours down at night, and elephants trumpet in the distant thickets, the monk sits in the hills in ecstasy, and finds no joy greater than this.

Source 6: *Theragatha* (Verses of the Elder Monks) (5th century BCE), author unknown. A Buddhist scripture of 264 poems, the poems were recited by Buddhist monks to help them overcome temptation and live a pure life.

Jainism

Mahavira came from the same area of India as the Buddha and was also the son of a rajah. He left home at the age of 30 to seek salvation. Like the Buddha, he found enlightenment and founded an order of monks.

Jains are passionate supporters of ***ahimsa***. They think the whole world is alive with souls that can feel pain even if they cannot express it. Even the unintentional killing of an ant can weigh the human soul down and cause a worse rebirth. The only way to free oneself from constant rebirths is to not harm anything. A Jain monk strains his water before he drinks it so as to not harm creatures living in the water; he wears a face-cloth through which he breathes so he does not harm the wind.

Learning ladder H3.5

Significant people, ideas and events

1. Identify the four major belief systems of ancient India.
2. Describe the beliefs of Buddhism in ancient India.
3. Sources 4 and 6: Explain how these sources demonstrate Buddhist practices in ancient India.
4. Explain why the Ganges is holy to Hindus.
5. Suggest reasons why there has been so much religious diversity in India.

Perspectives

1. Source 6: Identify the Buddhist perspective on nature.
2. Describe the differences between the Brachman and Hindu perspectives on the role of priests.
3. Explain the Jain perspective of ahimsa.
4. Compare the Hindu and Buddhist perspectives on escaping the cycle of rebirth.

HOW TO Perspectives, page 200

What was daily life like in ancient India?

The lives of people in ancient India were greatly shaped by their caste and whether they were men or women.

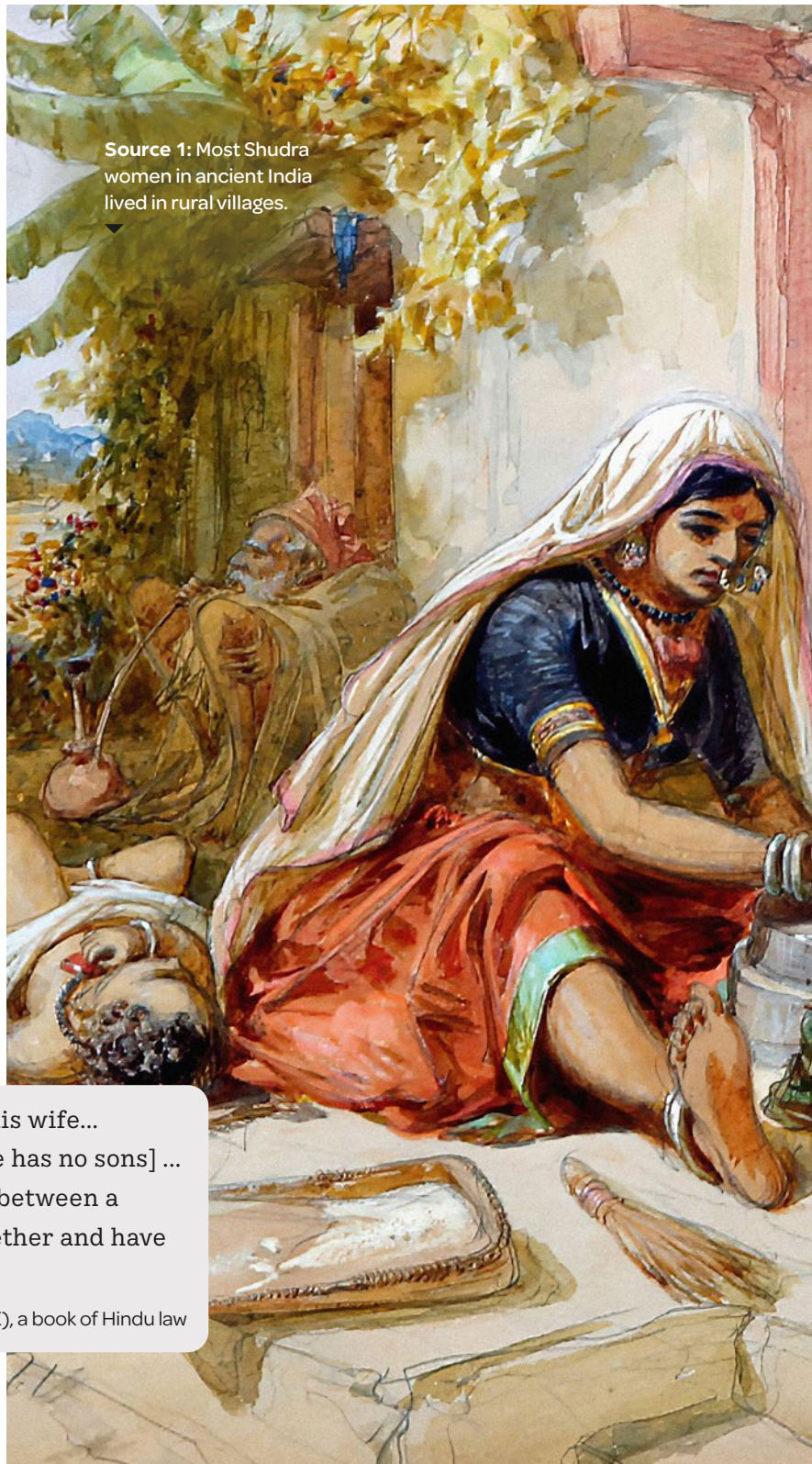
Men

Men had a prominent role in their families. The oldest male in a family was considered the head of the family. He had legal control over everyone else and was also responsible for performing the sacred rituals to honour the ancestors of the family. When he died, the oldest son would take his position. Men were also responsible for ensuring that women were respected and cared for.

Men who belonged to the higher castes were able to serve their society at all levels: as priests, kings, warriors, officials, magistrates, merchants and artisans. Those of the Shudra caste were expected to undertake the hard manual labour in ancient India, building roads, digging wells and constructing houses and forts.

Women

During the Vedic society period, higher-caste women were able to own property, inherit property from their parents, and generally have the same freedom as men to come and go as they pleased. Some higher-caste women were highly educated and took part in debates at public assemblies. However, by the beginning of the Gupta Empire, higher-caste women's lives had become much more restricted. They had to obey their husbands, could not own property and could not remarry if their husband died. They also had to remain indoors and were only allowed out of the house on religious festival days, accompanied by their husbands.



Source 1: Most Shudra women in ancient India lived in rural villages.

A man is not allowed to unjustly abandon his wife...

He permits daughters to inherit [if he has no sons] ...

There can be no division of property between a husband and a wife, because they are linked together and have joint custody of the property ...

Source 2: Extracts from the *Āpastamba Dharmasūtra* (c. 400 BCE), a book of Hindu law

In contrast, the lives of Shudra women remained the same throughout the ancient period. They lived in villages where they prepared food, spun yarn, wove cloth, cultivated the fields, looked after the cows and checked the family finances each day.

> In childhood a female must be subject to her father, in youth to her husband, when her husband is dead to her sons. A woman must never be independent ...
>
> She must always be cheerful, clever in the management of her household affairs, careful in cleaning her utensils, and economical in spending ...
>
> **Source 3:** Extract from the *Manusmriti* (200 CE), a book of Indian law

Children

It was considered very important for married couples to have children, as children were expected to support parents in their old age. For this reason, boys were preferred over girls, as a girl would leave her family on marriage to live with and care for her in-laws. In addition, the parents of girls were expected to provide a dowry (money or property) to her future husband for her upkeep. Girls spent their childhood learning to cook, sew, weave and clean and were married at around the age of 12 to 15. Boys tended to be older when they married, especially higher-caste boys, who could not marry until they had completed their education. A girl was able to choose her husband from a group of suitable men (selected by her father). When the girl had made her choice, the future groom had a garland placed around his neck and the couple were married on the spot.

Only boys from the Brahman, Kshatriyas and Vaisyas castes were educated in ancient India. They were taught to recite the Hindu scriptures to learn the dharma, so that they might live a virtuous life and help form a peaceful society.

Learning ladder H3.6

Significant people, ideas and events

1. List words that describe the role of men in Indian society.
2. Describe the main differences between the lives of girls and boys in ancient India.
3. Explain how higher-caste boys were educated.
4. Explain why boys were preferred to girls in ancient India.
5. Analyse the significance of caste and gender to a person's life in ancient India.

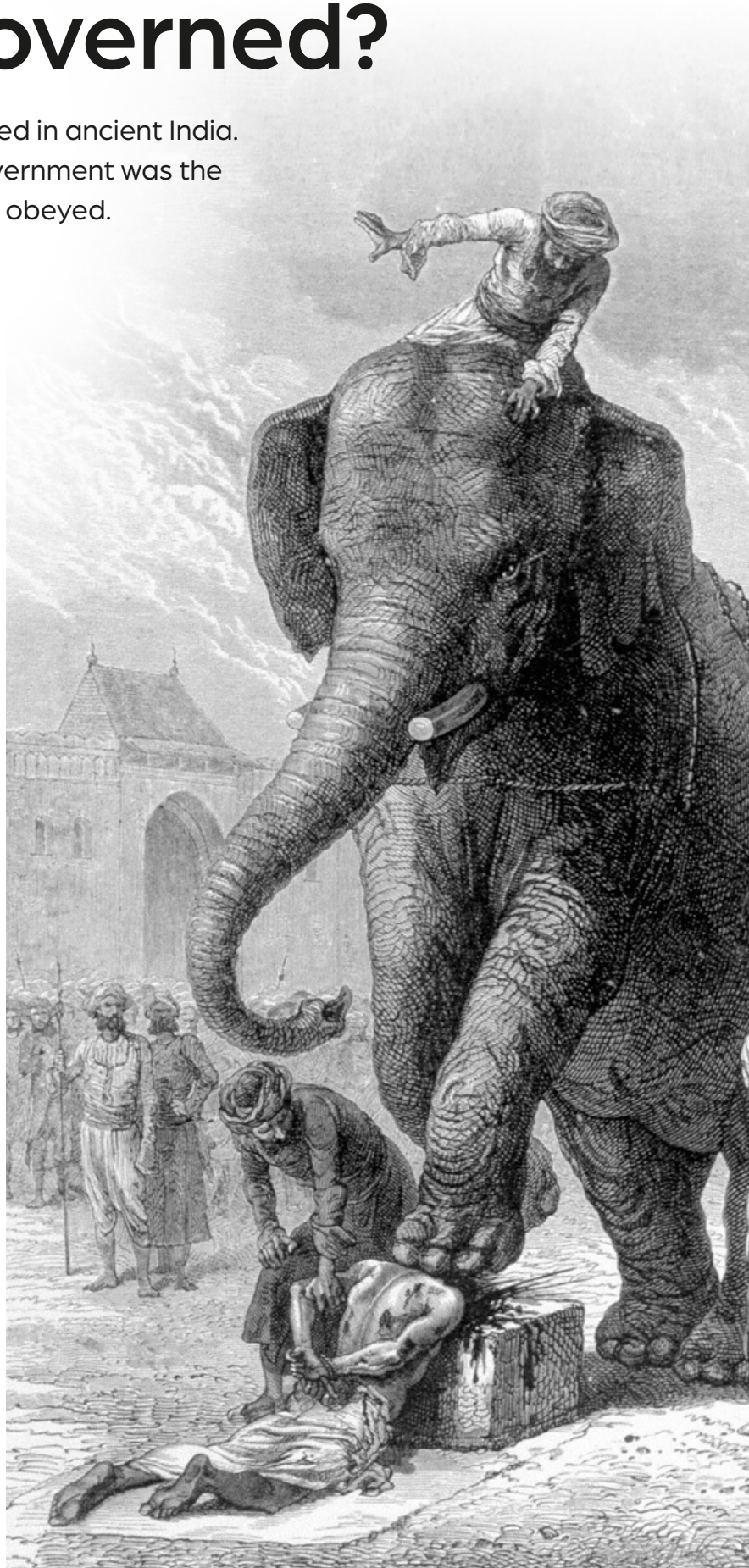
Sources

1. Source 2: Identify the origin of this source.
2. Source 1: Describe the lives of Shudra women in ancient India.
3. Source 2: Explain the rights held by higher-caste women during the Vedic period.
4. Sources 2 and 3: Explain the contexts of these sources.

HOW TO Sources, page 191

How was ancient India governed?

Kingdoms, republics and empires all featured in ancient India. At the heart of these different forms of government was the authority of the ruler whose laws had to be obeyed.



Government of ancient India

There were three main types of government in ancient India:

- kingdoms, ruled by a king
- republics, governed by an elected king and his officials
- empires, ruled by an emperor and his appointed governors.

Kingdoms

By 500 BCE, the Vedic tribes of the Indus Valley had formed themselves into kingdoms, each headed by a king (raja) who had absolute power and was considered divine. There were 16 Vedic kingdoms in all. Kingship was hereditary, passed down the male line from fathers to sons.

Kings needed vast resources and wealth to maintain armies and their own power. The people of ancient India did not pay taxes to support the king, but were expected to give gift-offerings. The gift-offering eventually became compulsory.

Republics

There were also a number of small republics (states with elected representatives), such as Varjji and Madra. These were also headed by a king, but he was elected to his role and was assisted in his rule by officials who were also elected to their positions. The officials could give advice to the king, but ultimately, decisions about how to run the republic were left to the king. Most of the republics had died out by 300 CE, with the rise of the Mauryan Empire.

Empires

The main empires of ancient India were the Mauryan, Satavahana and Gupta empires. Each of these large empires was divided into smaller provinces that were headed by a governor. Each governor was responsible for running the province along the guidelines dictated by the emperor.

Law in ancient India

In ancient India, laws were supposed to be derived from dharma (sacred law), which was contained in the *Manusmriti*. In practice, however, the local community decided what was right and wrong, so laws in ancient India varied from place to place.

There were four different kinds of courts:

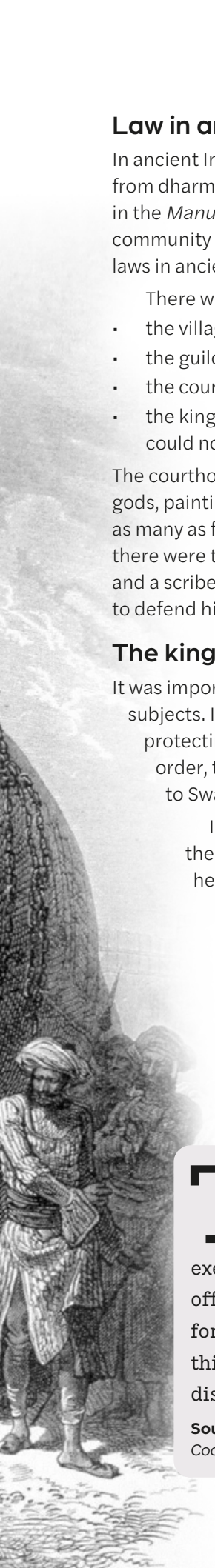
- the village court
- the guild court in the cities
- the courts with judges appointed by the king
- the king's court, which resolved disputes that could not be decided in the lower courts.

The courthouse was decorated with flowers, statues of gods, paintings and a seat for the judges. There could be as many as five magistrates in the courts, but generally there were three: a king's official, a wealthy merchant and a scribe. There was no jury and the defendant had to defend himself in front of the magistrates.

The king's court

It was important for the king to provide justice to his subjects. If the king decided legal cases correctly, protecting the weak and helpless and restoring order, then he would be assured of a brief visit to Swaga Loka (heaven).

In the earliest kings' courts, the king was the executioner, hitting the guilty over the head with his sceptre (ceremonial sword).



Source 1: Execution by elephant was a brutal type of execution used for 2000 years in India. Known as *gunga rao*, the accused person was crushed to death under the elephant's feet under guidance from its trainer. [Louis Rousselet (1877 CE), *Execution by an Elephant in Baroda*]

> The ancient Manusmriti or Laws of Manu, written down around 200 CE, prescribed execution by elephants for a number of offenses. If the criminal stole property, for instance, 'the king should have any thieves caught in connection with its disappearance executed by an elephant.'
>
> **Source 2:** Patrick Olivelle (trans.) (2004 CE), *The Law Code of Manu*, Oxford University Press.

Source 3: Babylonian silver coin (reverse), 322 BCE. This coin was made to celebrate Alexander the Great's victory over King Porus. Alexander is shown on horseback, while King Porus is shown riding an elephant. King Porus ruled a region that today encompasses northern India and Pakistan.

Later there were death penalties of various kinds, some fitting the crime. Those who stole military equipment were shot to death with arrows; if you broke a dam wall, you were drowned in the dam!

Elephants were also used to execute or punish lawbreakers. This was because the elephant was a symbol of royal authority. In addition, the use of elephants showed that the king or emperor was able to control powerful creatures, which demonstrated to his subjects that he could therefore wield control over them.

Learning ladder H3.7

Significant people, ideas and events

1. Identify the three forms of government in ancient India.
2. Describe how empires were governed in ancient India.
3. Explain how early kings carried out the law.
4. Explain the difference between kingdoms and republics in ancient India.
5. Assess the power of kings in ancient India.

Causes and consequences

1. Source 3: Identify the reason why this coin was made.
2. Describe two examples of punishments that fit the crime.
3. Sources 1 and 2: Explain how elephants were used to carry out the law.
4. Explain why the king was likely to decide legal cases fairly.
5. How did the king's role as an enforcer of the law increase his power?

HOW TO Causes and consequences, page 196

Key individual

How did Emperor Ashoka rule India?

Ashoka (268–233 BCE) was one of the greatest emperors of India. He came to the throne in 268 BCE as the ruler of the Mauryan Empire, the largest empire India had ever seen. He was originally a ruthless and violent ruler, but changed his nature after converting to Buddhism.

The conquest of Kalinga

In 261 BCE, Ashoka defeated the last large independent Indian kingdom, Kalinga. While walking through the streets of Kalinga after his conquest, rejoicing in his victory, Ashoka was struck by thousands of dead bodies strewn about him. His conquest had come at a terrible human cost: 100 000 people killed, almost as many wounded, and 150 000 taken prisoner and enslaved.

Ashoka's remorse over the misery he had caused by his conquest of Kalinga, together with a meeting with a Buddhist monk in the same year, changed him from a violent emperor into an extraordinary ruler.

Buddhism as the state religion

Ashoka's conversion to Buddhism led him to make Buddhism the state religion in 260 BCE. He also did away with the idea that he was divine, and instead pioneered a 'Buddhist' model of rule. According to this model, Ashoka's right to be emperor was based on his promotion of Buddhism to his subjects, his moral example to his subjects and his personal devotion to Buddhism. Ashoka funded the building of many **stupas** and supported the establishment of Buddhist monasteries throughout the empire. He also sent missionaries to the great ancient centres of Sri Lanka, Syria, Egypt and Greece.

Ashoka's rock and pillar edicts

Some of the main objects that have survived from Ashoka's time are his rocks and pillars. The rocks and pillars contain **edicts**, inscriptions that explain Ashoka's ideas of **dharma** (sacred law) and tell his subjects how to live a moral life. Archaeologists have found about 60 of these inscriptions so far.

The inscriptions were written in the languages of the local people of Ashoka's empire, mainly Sanskrit and Magadhi (a language once spoken in north India and Nepal). There are even inscriptions in Greek and Aramaic (an ancient Canaanite language) in the north-west of India. The rock and pillar edicts were installed over Ashoka's empire, including one in Kandahar in Afghanistan, which is how we know Ashoka's empire stretched that far.

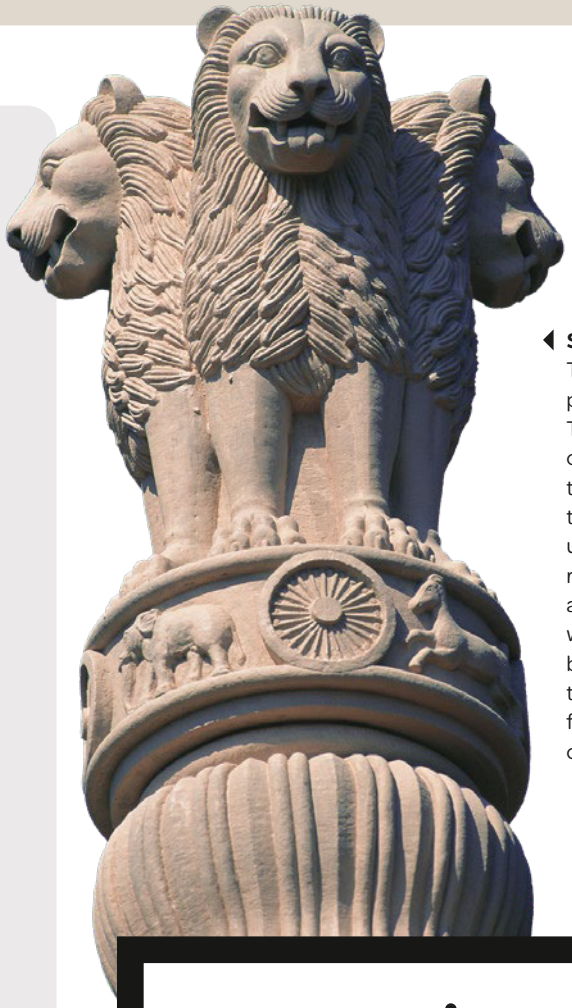
Thus speaks the Beloved of the Gods, [Emperor Ashoka]: When I had been emperor for twenty-six years I forbade the killing of the following species of animals: the parrot ... the wild duck ... the goose ... the raven and the common crow ... the she-goat ... the sheep and the sow ... The same being alive shall not be injured: whether because of their uselessness or for the sake of amusement, they shall not be injured ... Chaff which contains living things must not be set on fire. Forests must not be burned in order to kill living things or without any good reason.

Fifth Pillar Edict

The Beloved of the Gods [Emperor Ashoka] believes that one who does wrong should be forgiven as far as it is possible to forgive him.

Thirteenth Major Rock Edict

Source 1: Emperor Ashoka's rock and pillar edicts told his subjects how to lead a moral life based on the teachings of Buddhism.



Source 3: The Sarnath pillar, placed by Ashoka. The four lions with open mouths face the four quarters of the world. The wheel underneath the lions represents Ashoka as a Chakravatin, or 'ruler who rules ethically and benevolently'. Today, the Ashoka Chakra is found at the centre of the Indian flag.

Source 2: Mauryan Emperor Ashoka led his army into battle to capture the independent kingdom of Kalinga. Mortified by the human cost of his conquest, Ashoka converted to Buddhism and led a peaceful empire.

Learning ladder H3.8

Significant people, ideas and events

1. Source 2: Identify the kingdom conquered by Ashoka in 261 BCE.
2. Describe how Ashoka established Buddhism as his empire's religion.
3. Source 3: Using the source and your knowledge, explain the nature of Ashoka's leadership.
4. Explain why Ashoka promoted Buddhism in his empire.

Significance

1. Identify one reason why Ashoka might be considered a great leader.
2. Describe the rock and pillar edicts left behind by Emperor Ashoka.
3. Explain what the rock and pillar edicts tell historians about the size of Ashoka's empire and the people within it.
4. Source 1: Explain why Ashoka's rule shows he was an enlightened emperor.

HOW TO

Significance, page 202

Site study

What was the Great Stupa at Sanchi?

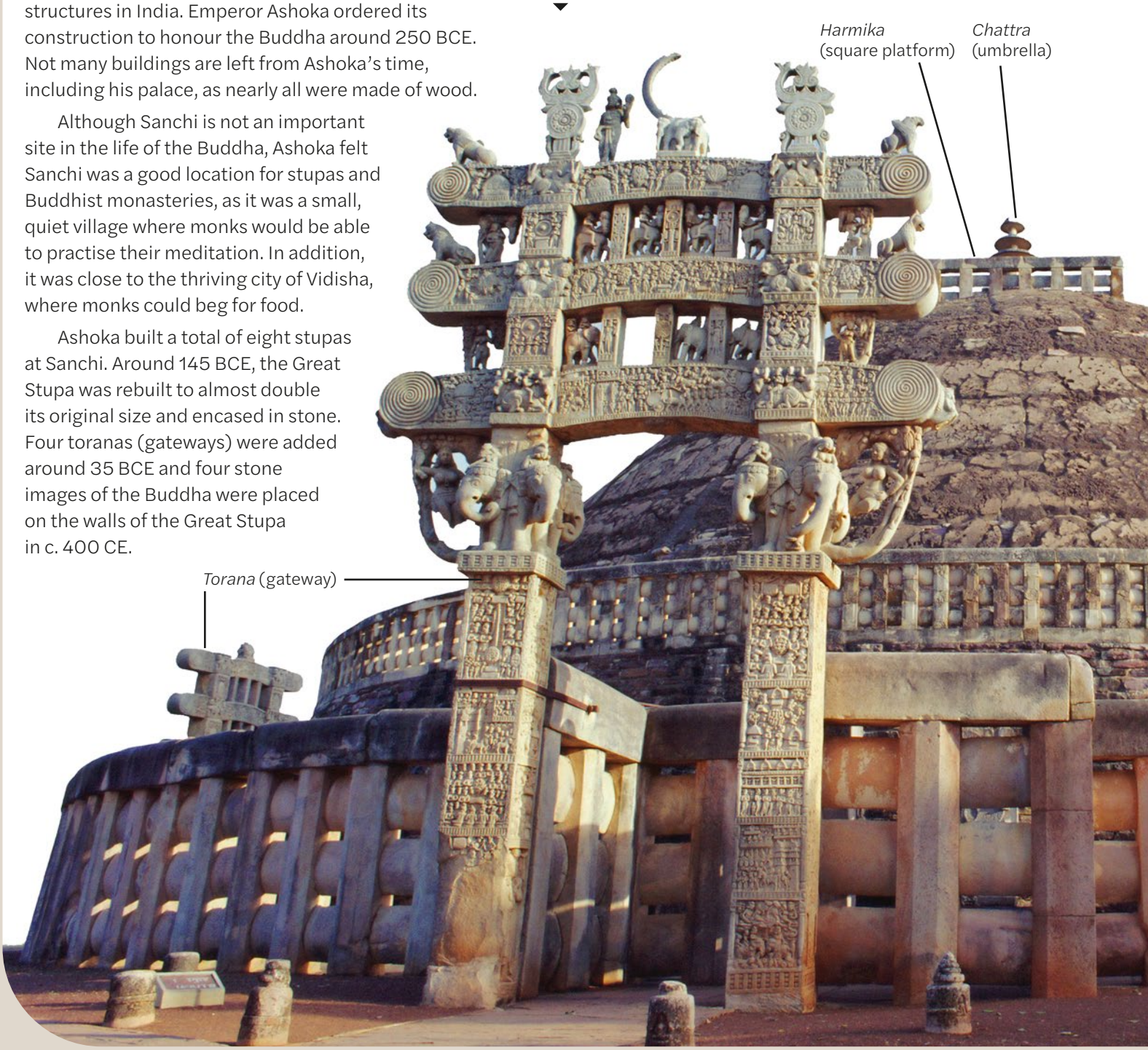
The Great Stupa at Sanchi

The Great Stupa at Sanchi is one of the oldest stone structures in India. Emperor Ashoka ordered its construction to honour the Buddha around 250 BCE. Not many buildings are left from Ashoka's time, including his palace, as nearly all were made of wood.

Although Sanchi is not an important site in the life of the Buddha, Ashoka felt Sanchi was a good location for stupas and Buddhist monasteries, as it was a small, quiet village where monks would be able to practise their meditation. In addition, it was close to the thriving city of Vidisha, where monks could beg for food.

Ashoka built a total of eight stupas at Sanchi. Around 145 BCE, the Great Stupa was rebuilt to almost double its original size and encased in stone. Four toranas (gateways) were added around 35 BCE and four stone images of the Buddha were placed on the walls of the Great Stupa in c. 400 CE.

Source 1: The Great Stupa at Sanchi



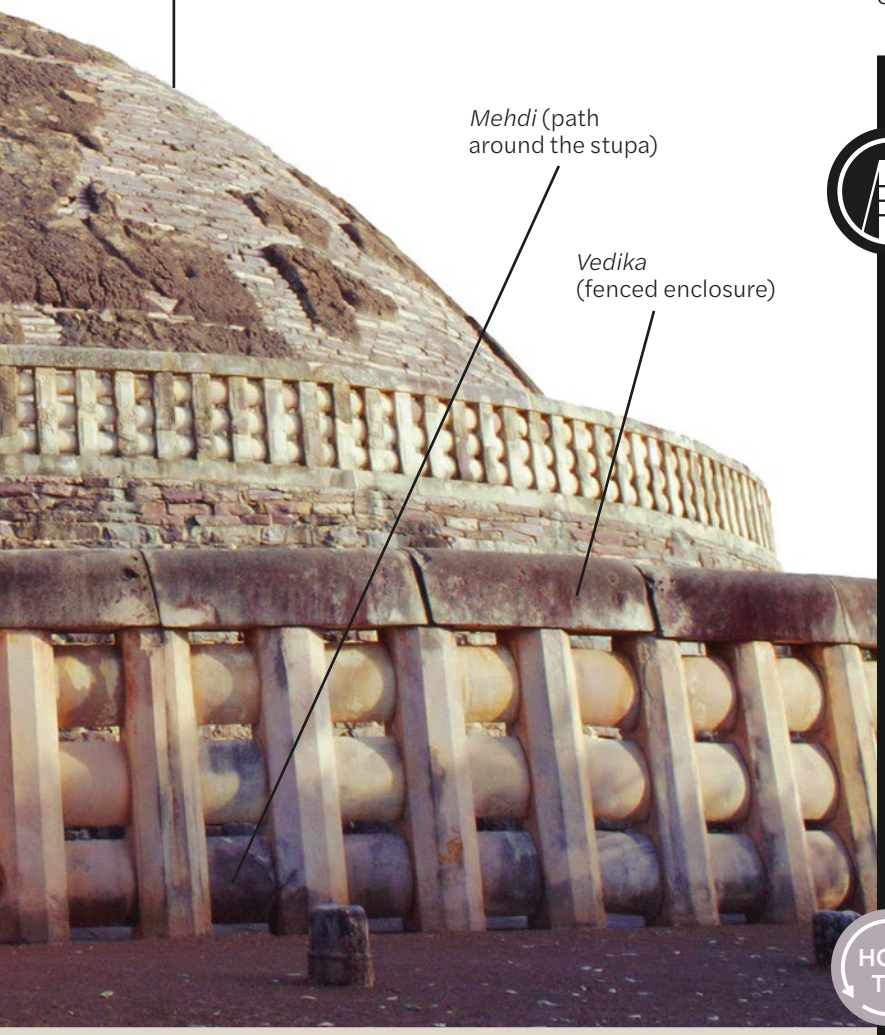
Source 2: Detail of the northern torana of the Great Stupa at Sanchi (c. 35 BCE). The Buddha is represented by the Bodhi Tree (centre of the top panel).

What is the purpose of a stupa?

Originally, stupas were burial mounds. Inside the stupa were relics of the Buddha and his followers in a jewelled casket. The ashes of the Buddha were generally buried in stupas built at locations linked to important events in the Buddha's life. People could honour the Buddha's memory by walking around the circular path outside the stupa and meditating.

Following his conversion to Buddhism, Emperor Ashoka had the original burial-mound stupas opened. The remains of the Buddha and his devout followers were then distributed to the thousands of new stone stupas he built all over India.

The new stupas included other important structures such as toranas (gateways) and chattras (umbrellas). The placement of the dome and the gates is perfectly aligned with the four positions of the compass, with the chattras lining up with the 'axis mundi' (centre of the world).



Learning ladder H3.9

Significant people, ideas and events

1. Source 1: Identify the key features of the Great Stupa.
2. Sources 1 and 2: Describe the northern torana of the Great Stupa.
3. Source 1: Explain how Buddhists used the Great Stupa.
4. Explain why Emperor Ashoka built the Great Stupa at Sanchi.

Continuity and change

1. Identify the reason why very few buildings are left from the time of Emperor Ashoka.
2. Describe how the Great Stupa changed between 145 BCE and 400 CE.
3. Explain how Emperor Ashoka changed the original burial mounds of the Buddha and his followers.
4. Explain why Ashoka's stupas demonstrate the concept of continuity and change.

HOW TO

Continuity and change, page 193

How did ancient India affect other societies?

Ancient India traded with other societies in the ancient world, leading to the introduction of new resources and new ideas. Not all contact was peaceful, as attempts to expand power led to war and conflict within India and with neighbouring regions.

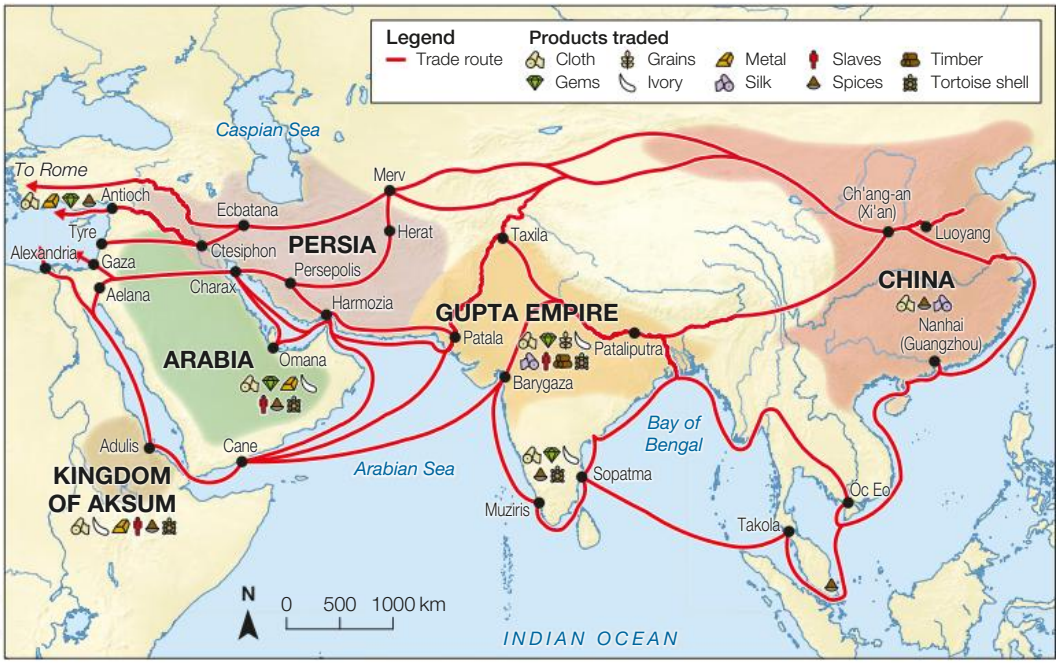
Trade contacts

From the 1st century BCE, the south-west monsoon brought Egyptian, Greek, Arabian and Roman merchants to coastal Indian towns. They came in ships laden with linen, wine, glass, pottery, copper, tin, lead, and gold and silver coins. Roman coins dating from the 5th century BCE to the 3rd century BCE have been found on both coasts of the Indian peninsula and on ancient trade routes that ran between the coasts. The foreign merchants waited in India for the north-east monsoon to blow them back home in ships packed with pepper, cloves, ivory, perfume, cotton, silk, diamonds, gold and pearls.

In turn, Indian traders used the monsoonal winds of the Bay of Bengal to take ceramics and gems to South-East Asia , where they purchased spices. The Indian merchants returned to India, where they sold these spices to Roman merchants at a good profit.

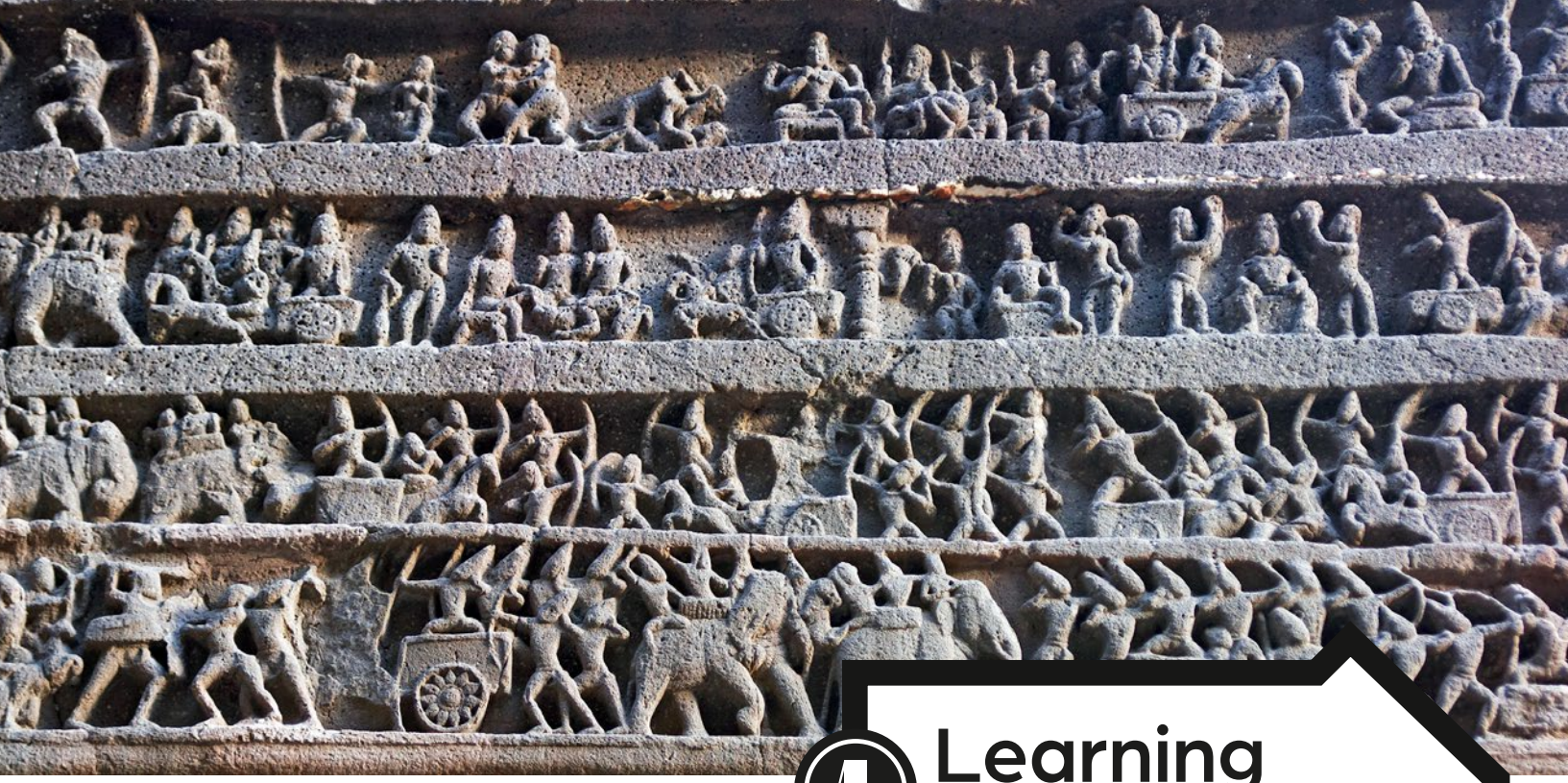
◀ **Source 1:** Lakshmi, the Indian goddess of wealth. This statue was found buried under the ashes of Pompeii in Italy (the city itself was buried during the eruption of Mt Vesuvius in 79 CE).

Asian trade routes in 400 CE



Source: Matilda Education Australia

▲ **Source 2:** Travel to India was helped by monsoon winds from the south-west between April and September. Travel from India was driven by monsoon winds from the north-east between November and February.



Source 3: Relief sculpture depicting a scene from the 'Mahabharata', the longest poem ever written (5th–7th centuries CE). It is located in the Kailashnath Temple, part of the Ellora Caves complex, Maharashtra.

Warfare with other societies

Indian armies were divided into four sections: infantry, cavalry, chariots and elephants. The army of the first Mauryan emperor, Chandragupta I, contained 9000 elephants, 600 000 foot soldiers and 30 000 cavalry. War elephants were highly prized in Indian armies. They were mainly used to charge at the enemy. A line of charging elephants instilled great fear in enemy forces, causing them to break ranks and flee in terror.

India suffered a series of invasions from the 5th century BCE onwards. The first was that of the Persians under King Darius I, who annexed the area north-west of the Indus River from 516 BCE until 334 BCE. Then, in 327 BCE, Alexander the Great invaded India, establishing several small Greek states in the Indus Valley. Later, the Greeks formed the Seleucid Empire in west India in 312 BCE. The invasions resulted in thousands of deaths and much suffering, but also brought a number of benefits to ancient India. The Persians established the ancient university of Taxila (c. 450 BCE), which drew on Persian, Greek and Indian knowledge to become one of the greatest learning centres in the region. The ancient Greek invasions, meanwhile, led to Greek influences on Indian science and art.

Learning ladder H3.10

Impact and legacies

1. **a** Identify the goods brought to India by foreign merchants.
   b Identify the goods foreign merchants purchased in India.
2. Source 3: Describe the types of warriors shown in this source.
3. Source 2: Using the source, explain the trade between India and:
   a Aksum
   b China.
4. Source 2: Using the source and your knowledge, explain why trade networks to and from India were so extensive.
5. Source 1: What does this source demonstrate about the relationship between India and Rome?

Causes and consequences

1. Source 1: Identify the reason why the statue was buried under ash.
2. Describe the consequences of conflicts between India and other empires.
3. Explain how monsoonal winds affected India's trading relationships.
4. Explain why elephants were prized in ancient Indian armies.
5. How beneficial were the consequences of the Persian and Greek invasions for ancient India?

HOW TO

Causes and consequences, page 196

Was the Gupta Empire a golden age?

The Gupta Empire (320–550 CE) was a time of cultural splendour and scientific development. But was it really a 'golden age'?

Art and architecture

The Gupta emperors included Samudragupta (335–375 CE), Chandragupta II (375–415 CE) and Kumaragupta I (415–455 CE). Samudragupta and Chandragupta II were known as great patrons of the arts. They provided support to poets, artists and architects, especially in the northern regions of the empire. The Ajanta and Ellora caves are examples of exquisite Gupta artistry. While many of the buildings of the Gupta period were destroyed during invasions, the remaining temples and sculptures demonstrate the grandeur of Gupta art and architecture. It was during this period that sculptures of the Hindu and Buddhist gods were created for the first time.

Chess

The game of chess was also developed in India during the Gupta period. Known as *chaturanga*, the original game featured four types of playing pieces – infantry, cavalry, chariotry and elephantry (which in Europe became known as pawns, knights, rooks and bishops). It was originally played on an 8 × 8 uncheckered board. From India, the game spread along the Silk Road to Persia and China.

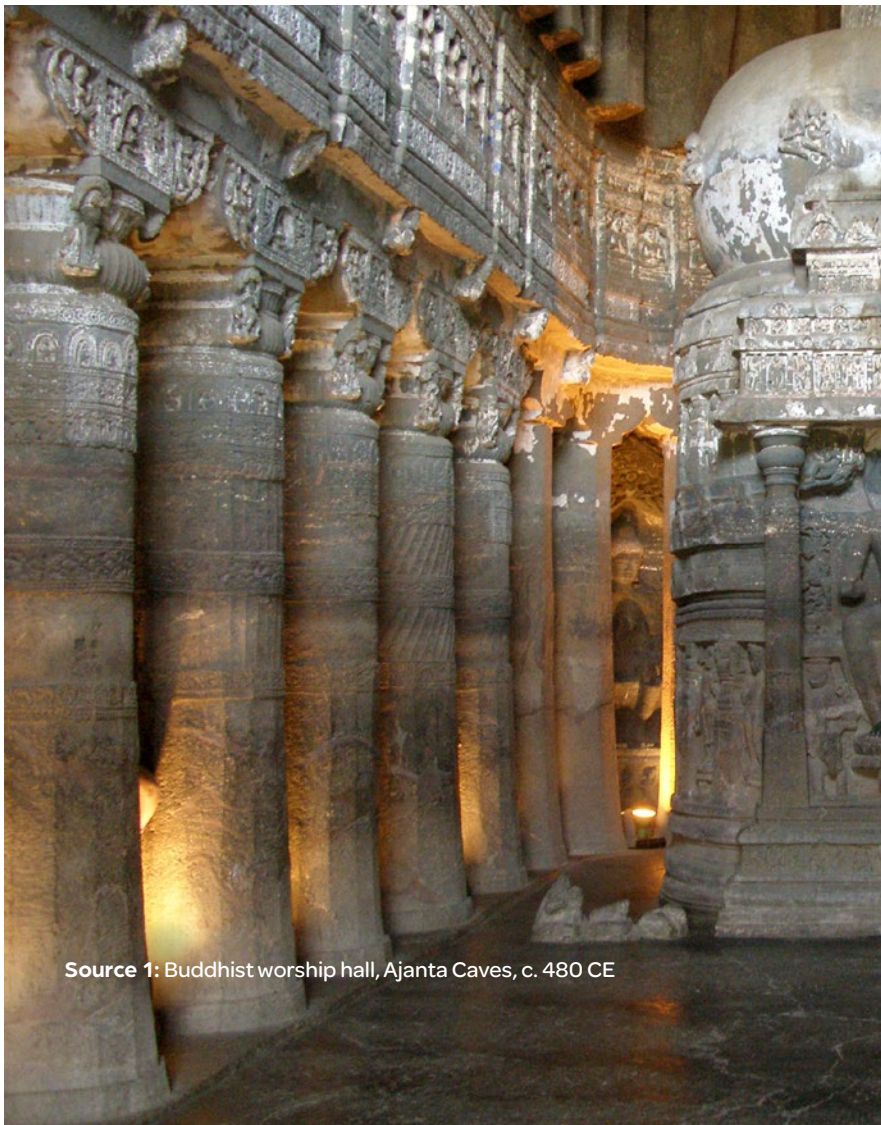
Mathematics and science

Mathematics advanced greatly during the Gupta Empire. One of the most significant developments was the invention of the Indian numeral system. The system is based upon 10 Brahmi symbols representing the numbers from zero to nine. In addition, the ancient Indian number system was the first to use base 10. This means that any natural number can be written down using these 10 symbols. Invented and developed during the Gupta period, the system came to be adopted by Arab mathematicians in the 9th century CE and had spread to Europe by the 13th century CE. Today, Indian numerals are the most common numeral system in the world.

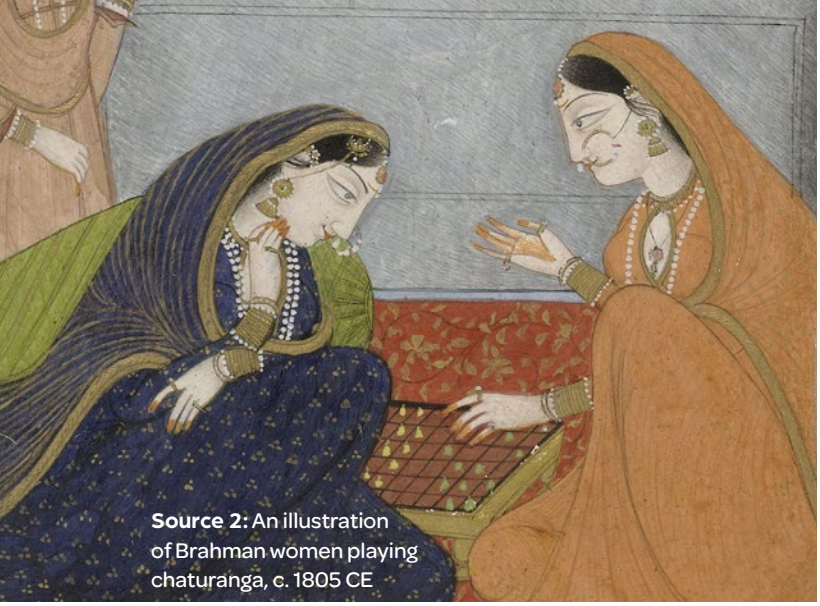
Gupta scientists such as Aryabhata also made major discoveries. Building on the studies of the ancient Greeks and Mesopotamians, Aryabhata determined that the Earth was spherical and also that the moon is visible at night because it reflects the sun's rays.

The dark side of the Gupta Empire

Even though there were important advancements and great cultural innovations, the Gupta period was not a 'golden age' for most people. The Gupta period saw an extension of privileges for men in the Brahman caste. The Brahmans were given large land grants by the



Source 1: Buddhist worship hall, Ajanta Caves, c. 480 CE

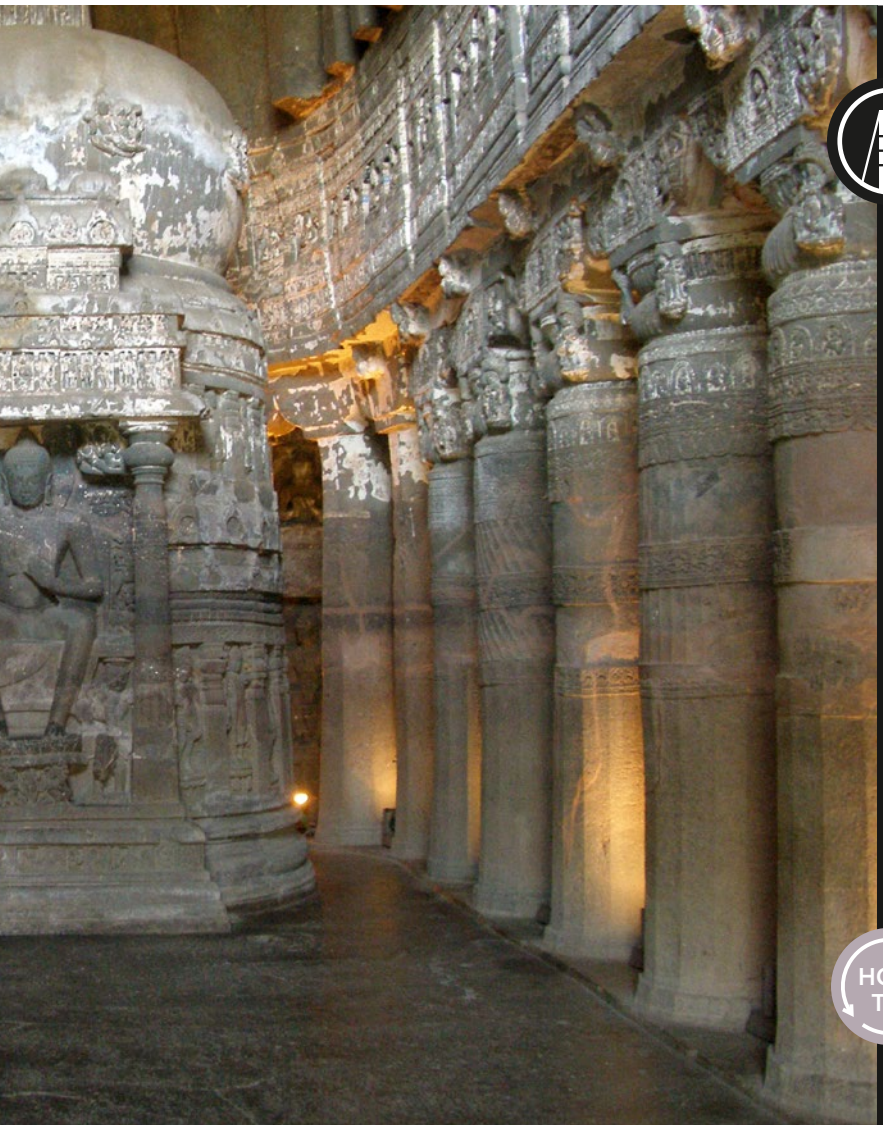


Source 2: An illustration of Brahman women playing chaturanga, c. 1805 CE

Gupta emperors to administer. They collected taxes and forced peasants to work on their land. Women, including those in the upper castes, lost power and were unable to own property, leaving them dependent on their husbands. Moreover, the untouchables became even more isolated from the rest of Indian society. So, while the upper caste became wealthier and more powerful, the lower castes and the untouchables became poorer and more oppressed.

The imposition of forced labour (vishti) and several new levies and taxes from the Gupta period onwards further undermined the position of peasants ... villagers were forced to contribute money and provisions to royal troops and officials when they halted at or passed through the village. They were required to supply flowers and milk to them. Cattle were also furnished for transport. Apart from these contributions, several new taxes came to be collected from the villagers. All this must have increased the burden of taxation on the peasantry. Forced labour, taxes and other dues became all the more oppressive ... [and] generated much social tension, leading to peasant protest...

Source 3: D.N. Jha (2009), *Ancient India: In Historical Outline*, Manohar, pp. 155–6.



Learning ladder H3.11

Impact and legacies

1. Source 1: Identify the site shown in the source.
2. Describe how Samudragupta and Chandragupta II developed the arts.
3. Source 2: Explain how chaturanga came to be played around the world.
4. Explain why the mathematical developments of the Gupta era were significant.

Interpretations

1. Identify the debate about the Gupta Empire.
2. Describe how the Gupta Empire could be seen as a golden age.
3. Source 3: Explain how the Gupta period could be seen as a dark age.
4. Compare the different interpretations of the Gupta period.
5. Sources 1–3: Using the sources and your knowledge, evaluate whether the Gupta Empire was a golden age.

HOW TO

Interpretations, page 204

How did ancient India influence culture around the world?

Ancient India had a profound impact on the cultures of Europe, South-East Asia and China.

Religious influence

Wherever Indian merchants, Brahmans and Buddhist missionaries went, they took their religion, art and culture. Indian influence was especially seen in Sri Lanka, Cambodia, Thailand and Indonesia, where societies embraced Hinduism and Buddhism. The prominence of these beliefs could alternate depending on the ruler, so a state with Hindu gods could become Buddhist with the next ruler, and vice versa. People on the island of Bali, in Indonesia, worshipped Hindu gods, while on the nearby island of Java the Shailendra kings supported Buddhism. In the early 9th century CE, they built one of the most stunning Indian-inspired buildings in the world, the Great Stupa of Borobudur.

Buddhism was taken by monks and merchants along the Silk Road into Tibet, China, Korea and Japan. Buddhist monks travelled from China and South-East Asia to study at the great Indian Buddhist monastery of Nalanda. At Nalanda, 10 000 monks and scholars from all over Asia studied together, learning logic, medicine, mathematics, astronomy, literature, the Hindu Vedic texts and the sacred Buddhist texts.

Indian warfare

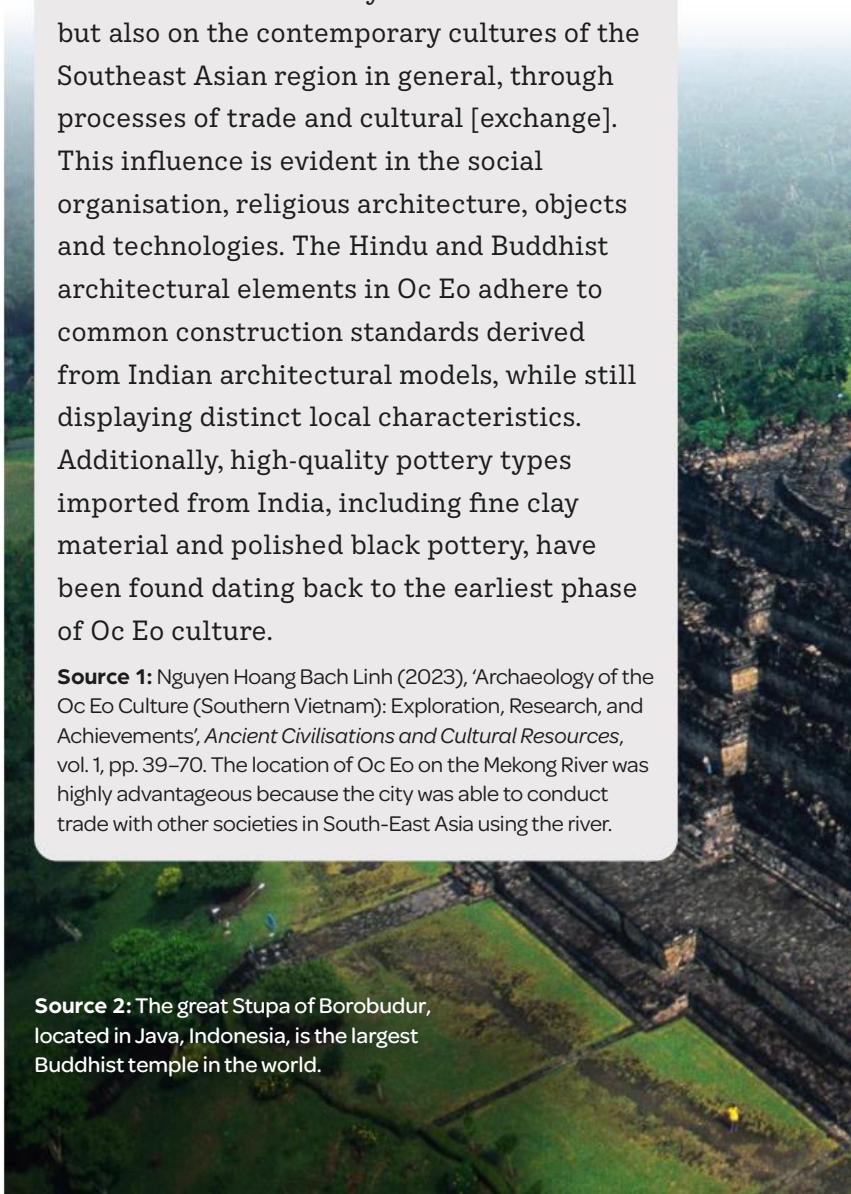
There were also important military contributions. The game of chess, derived from the Indian game chaturanga, made an art of military strategy. Ancient India also pioneered the use of elephants in warfare, a practice that would be employed for centuries on the battlefields of South-East Asia.

Science and mathematics

In addition to using a small set of symbols to represent all numbers and inventing the base 10 number system, ancient Indian mathematicians created the concept of zero, the decimal system and the concept of infinity. Their mathematical studies formed the basis for the later development of algebra, calculus and trigonometry ideas. All of these ideas have profoundly shaped the modern world.

The civilisation of India can be said to have the most important and powerful influence not only on the Oc Eo culture but also on the contemporary cultures of the Southeast Asian region in general, through processes of trade and cultural [exchange]. This influence is evident in the social organisation, religious architecture, objects and technologies. The Hindu and Buddhist architectural elements in Oc Eo adhere to common construction standards derived from Indian architectural models, while still displaying distinct local characteristics. Additionally, high-quality pottery types imported from India, including fine clay material and polished black pottery, have been found dating back to the earliest phase of Oc Eo culture.

Source 1: Nguyen Hoang Bach Linh (2023), 'Archaeology of the Oc Eo Culture (Southern Vietnam): Exploration, Research, and Achievements', *Ancient Civilisations and Cultural Resources*, vol. 1, pp. 39–70. The location of Oc Eo on the Mekong River was highly advantageous because the city was able to conduct trade with other societies in South-East Asia using the river.



Source 2: The great Stupa of Borobudur, located in Java, Indonesia, is the largest Buddhist temple in the world.

▲ **Source 3:** Relief showing Khmer soldiers and war elephants on the Bayon Temple, Cambodia, 1190 CE

Indian learning, Indian religious insights and Indian ideas are among the crucial foundations of the world. Like ancient Greece, ancient India came up with a set of profound answers to the big questions about what the world is, how it operates, why we are here and how we should live our lives … In matters of science, astronomy and mathematics, India was to be a teacher of the Arab world, and hence Mediterranean Europe too.

Source 4: William Dalrymple (2024), *The Golden Road: How Ancient India Transformed the World*, Bloomsbury Publishing, p. iv.

Learning ladder H3.12

Impact and legacies

1. Source 2: Identify an example of ancient Indian religious influence in Indonesia.
2. Source 3: Describe how ancient India influenced medieval Cambodia.
3. Explain how ancient Indian religious influences can be seen in South-East Asia and China.
4. Explain why the work of ancient Indian mathematicians was so significant.
5. Evaluate the legacy of ancient India for the world.

Perspectives

1. Sources 1 and 4: Identify the authors of these sources.
2. Sources 1 and 4: Describe each source's perspective on ancient India.
3. Sources 1 and 4: Explain how the two perspectives on ancient India are similar.
4. Sources 1 and 4: Explain why the two perspectives focus on different aspects of ancient India.

HOW TO Perspectives, page 200

How do I conduct a good inquiry?

Now that you've finished the chapter, it's time to conduct your own historical inquiry on ancient India. Throughout the chapter you have developed knowledge and understanding of ancient India. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own historical inquiry!

A historical inquiry gives you the opportunity to be an active historian: forming questions, interrogating sources and communicating insights about the past on a topic of your choice.

The chapter has covered the origins and legacies of ancient India in addition to significant people, events, ideas and beliefs. What would you like to know more about?

- The use of elephants in the army, H3.10
- The conquest of Kalinga, H3.8
- The ancient Indian epics: the 'Mahabharata' and the 'Ramayana', H3.5
- The rock and pillar edicts, H3.8
- The golden age of the Gupta Empire, H3.11

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas.

Once you have worked through this process, you are ready to start the historical inquiry. Refer to pages 208–213 of the How-to chapter for a step-by-step guide to this process.

See

What do you see?
Who is involved?
What are the key features?
When and where was this happening?

Think

What do you think about that?
How do you think people were affected at the time?
How is this similar to or different from today?

Wonder

What does it make you wonder?
What did different groups think about this?
Why is this important to know?

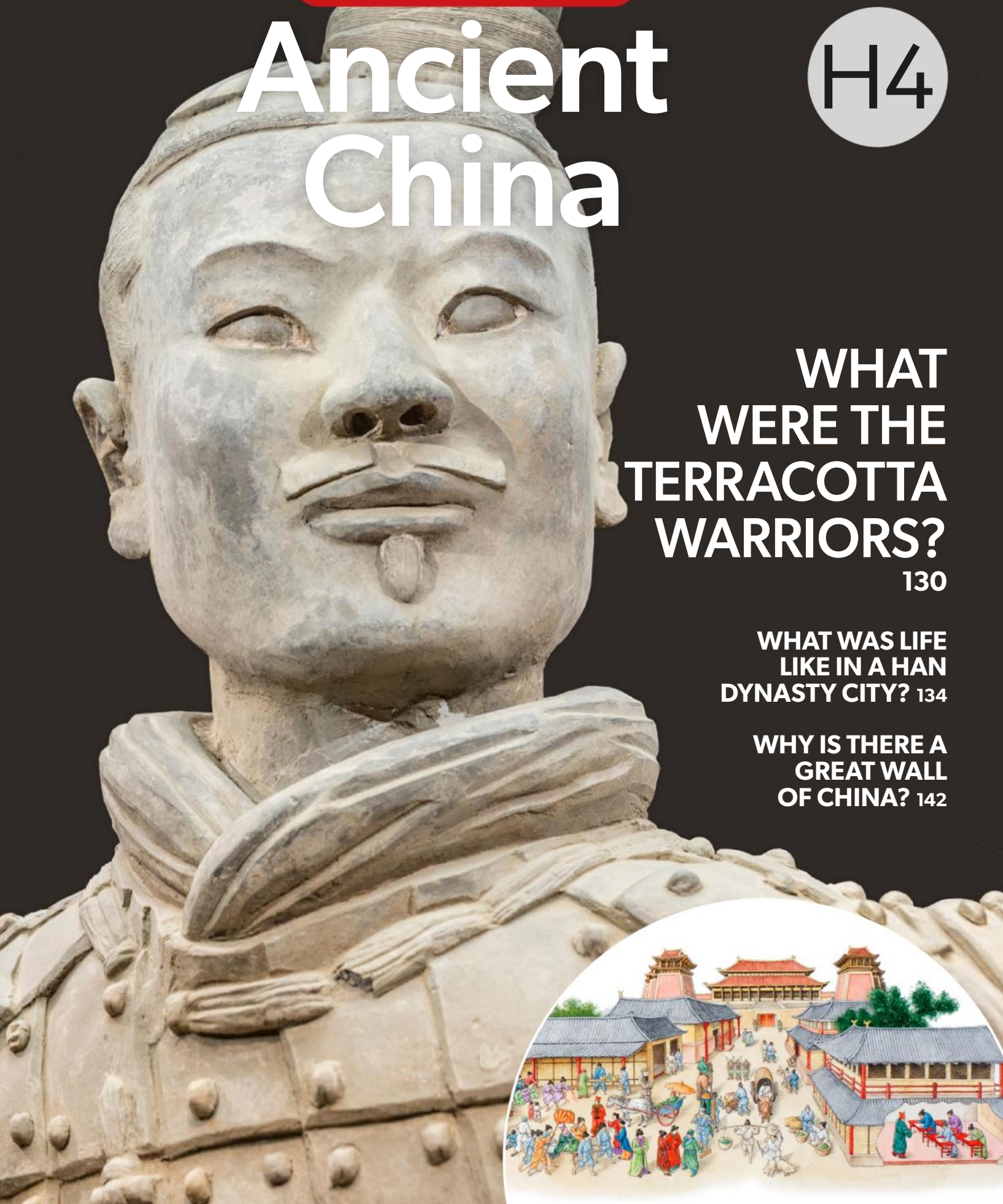
Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to expand your knowledge and attempt new skills.
When planning your inquiry, consider how the experiences and perspectives of individuals and groups shaped societies, beliefs and events in the past. Think about how the past has had an impact on the present. Use the How-to chapter to support your planning and research.

Ancient societies
(10 000 BCE – 600 CE)

Ancient China

H4



WHAT WERE THE TERRACOTTA WARRIORS? 130

WHAT WAS LIFE LIKE IN A HAN DYNASTY CITY? 134

WHY IS THERE A GREAT WALL OF CHINA? 142

H4.0

How can I understand ancient China?

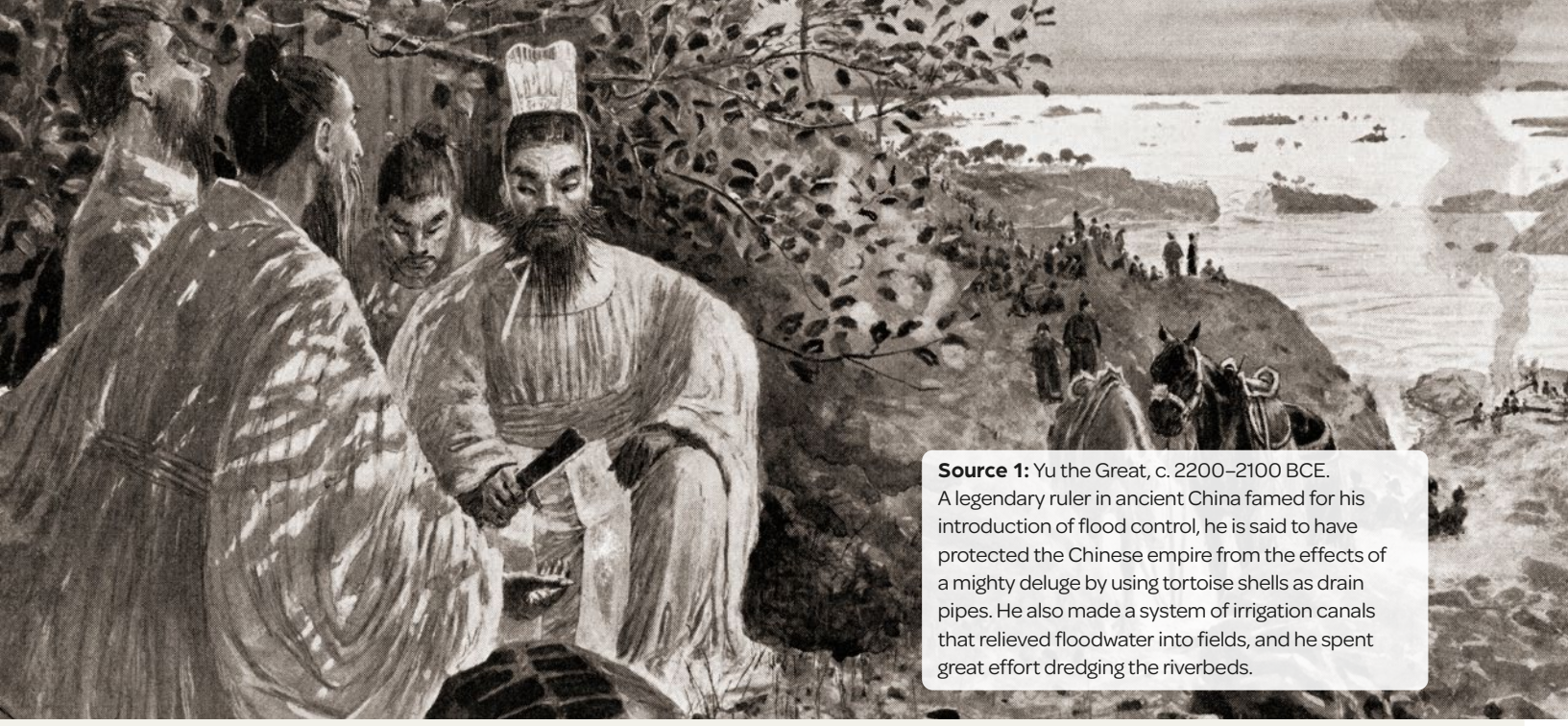
China has made impressive cultural, philosophical, technological and political achievements over thousands of years of history. With an imposing past and emerging future, understanding this culture is crucial to grasping the modern world.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Background and origins	Significant people, ideas and events	Impact and legacies	Continuity and change	Causes and consequences
5	I can evaluate the impact of the rise and fall of societies.	I can evaluate how societies were influenced by significant people and ideas.	I can evaluate the legacy of a society.	I can evaluate patterns of continuity and/or change.	I can analyse causes and consequences.
4	I can explain why a society developed.	I can explain why ideas influenced people and events.	I can explain why a society has a legacy.	I can explain patterns of continuity and/or change.	I can explain why something was caused or why it led to certain consequences.
3	I can explain how a society developed.	I can explain how ideas influenced people and events.	I can explain the impact of one society on another.	I can explain continuity and change.	I can explain how something was caused or its consequence.
2	I can describe the origins of societies.	I can describe key people, ideas and events.	I can describe the legacy of a society.	I can describe continuity and change.	I can describe causes and consequences.
1	I can identify the origins of societies.	I can identify key people, ideas and events.	I can identify the legacy of a society.	I can identify continuity and change.	I can identify a cause and a consequence.

Knowledge and understanding



Source 1: Yu the Great, c. 2200–2100 BCE. A legendary ruler in ancient China famed for his introduction of flood control, he is said to have protected the Chinese empire from the effects of a mighty deluge by using tortoise shells as drain pipes. He also made a system of irrigation canals that relieved floodwater into fields, and he spent great effort dredging the riverbeds.

I can evaluate historical perspectives.	I can evaluate historical significance.	I can evaluate the evidence supporting a historical interpretation.	I can explain change or causality from a timeline.	I can evaluate sources to determine their accuracy, usefulness and reliability.	5
I can compare perspectives.	I can explain why something is historically significant.	I can compare historical interpretations.	I can summarise the events on a timeline.	I can explain the historical context of a source.	4
I can explain a perspective.	I can explain something historically significant.	I can explain an interpretation of history.	I can follow timeline conventions.	I can apply historical knowledge to explain sources.	3
I can describe perspectives.	I can describe something historically significant.	I can describe an interpretation of history.	I can place events on a timeline chronologically.	I can describe a source.	2
I can identify the perspective of a person from the past.	I can identify something historically significant.	I can identify a historical debate.	I can read a timeline.	I can identify the origin of a source.	1
Perspectives	**Significance**	**Interpretations**	**Chronology**	**Sources**	Steps in skills progression

Historical concepts and skills

H4.1

What can I learn about ancient China?

Ancient China was a dynamic and innovative society that had a lasting influence on the ancient world.

Early dynasties

Farmers began to settle in the valleys formed by the Yellow River more than 6000 years ago. According to legend, the first Chinese settlements were ruled by the kings of the Xia dynasty (2070–1550 BCE). Archaeologists and historians have not found any evidence for the existence of the Xia dynasty, but they have found evidence for its successor, the Shang dynasty (1550–1045 BCE), including temple remains and bronze, jade and stone artefacts.

Source 1: The Great Wall of China – the world's longest wall – was built to protect China's northern border from invaders. This part of the Great Wall was built during the Ming dynasty (1368–1644 CE), but the original wall, made of stone and rammed earth, dates from c. 206 BCE.

Source 2: Ancient China timeline

The Zhou dynasty (1046–256 BCE)

The Zhou dynasty saw the emergence of three important Chinese philosophies: Confucianism, Taoism and Legalism. Towards the end of the 5th century, the Zhou dynasty became weak and split into seven separate states: Chu, Qi, Yan, Zhao, Wei, Han and Qin.

The Warring States period (475–221 BCE)

The seven states fought each other for more than 200 years during the Warring States period.

The Qin dynasty (221–206 BCE)

King Zhang of the Qin state was victorious and unified China. He became China's first emperor, Qin Shi Huangdi.

The Han dynasty (206 BCE–220 CE)

The Han dynasty was a high point in ancient Chinese history, with new advancements in science, mathematics and paper-making.

Learning ladder H4.1

Background and origins

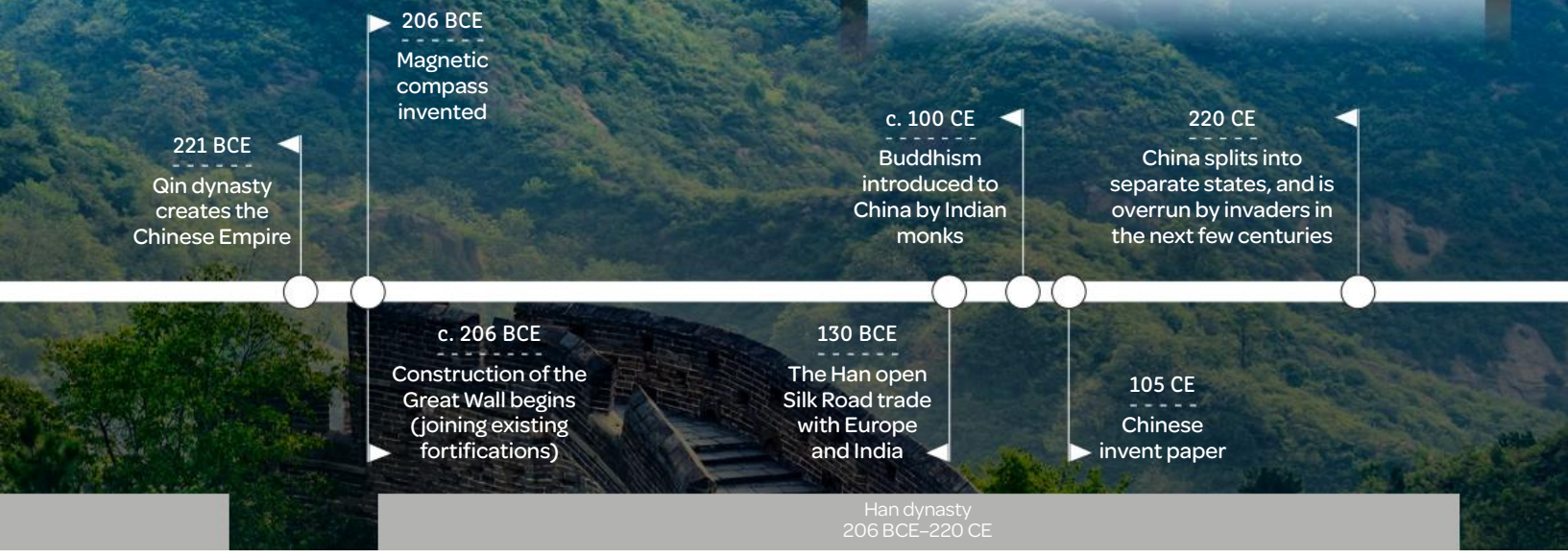
1. Identify three ancient Chinese dynasties.
2. Describe the evidence that archaeologists have found for the Shang dynasty.
3. Explain how Qin Shi Huangdi became the first emperor of China.
4. Explain why the Zhou dynasty was important to the development of ancient China.

Chronology

Use the timeline to answer these questions:

1. List the inventions of ancient China.
2. Put the following dates in order:
   - 223 BCE: Qin forces defeat the rival state of Chu
   - 475 BCE: The Warring States period begins
   - 221 BCE: The Warring States period ends with a Qin victory over the Qi state
   - 243 BCE: Qin forces defeat the rival state of Zhao.
3. Create a timeline using the dates from Question 2.
4. Suggest a reason for the arrival of Buddhism to China from India.
5. Sources 1 and 2: Explain how the Great Wall of China demonstrates the concept of continuity.

HOW TO Chronology, page 188



H4.2

What did the ancient Chinese believe?

Ancient Chinese myths describe the creation of the world, people and animals. Ancient Chinese legends tell the story of imagined historical figures who often have superhuman powers.

Ancient Chinese origin story

According to ancient Chinese mythology, in the beginning there was nothing. Into the nothingness a cosmic egg emerged. Inside this egg were the forces of yin and yang. Yin and yang were the forces of opposition that kept the universe in balance. Yin was contractive and passive, while yang was expansive and active. When yin and yang became perfectly balanced, a creature named Pangu emerged from the egg.

Pangu was a hairy giant with horns on his head. He began to create the world by pushing apart the yin and the yang. Yin became the Earth, while yang became the sky. To keep the Earth and the sky apart, Pangu stood between them and pushed up the sky.

The legend of the Yellow Emperor

According to legend, Huangdi, the Yellow Emperor, was born in 2697 BCE in a time of great conflict and chaos. The tribes living in the Central Plains region of ancient China were fighting an endless war with one another. When Huangdi turned 20, he became the leader of his father's tribe, the Youxiong. He was a great warrior and was able to unite the tribes of the Central Plains, who then recognised him as their emperor and called him Huangdi.

As emperor, Huangdi worked diligently to help his people. He cultivated new types of crops, domesticated animals for farming and invented a range of useful items, including weaving tools, farming tools and weapons. He also taught the women how to raise silkworms and make silk. He taught the people martial arts and brought them medical knowledge, which was later written down as the *Huangdi Neijing* (The Inner Canon of the Yellow Emperor).

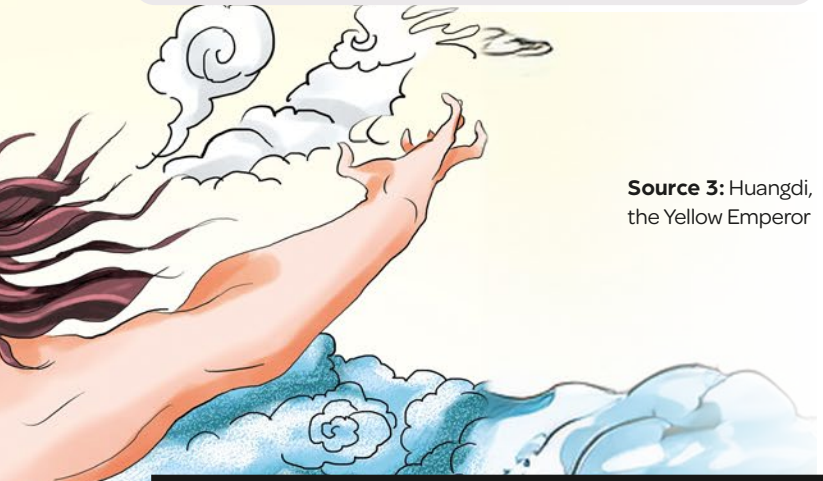
Source 1: A representation of Pangu separating the Earth and the sky

Huangdi: 'When someone has never encountered evil qi (life force), and has no fearful mind, and suddenly falls ill nevertheless, what is the reason? Could it be that [he falls ill] because of the workings of demon spirits?'

Qi Bo: 'This, too, is because the old evil qi has remained [in the body], without having broken out [as a disease]. When someone ... excessively longs after something, his blood and qi will be disturbed internally, and the two qi beat at each other. The origins are quite subtle. One may look at them, but will see nothing. One may listen to them, but hear nothing. Hence it seems as if demon spirits were involved.'

Source 2: Extract from *Huangdi Neijing* (The Inner Canon of the Yellow Emperor), c. 168 BCE. The *Huangdi Neijing* is an ancient Chinese medical text that is presented in a question-and-answer format between the Yellow Emperor and his ministers.

The name 'Huangdi' originally meant 'godly ruler'. Indeed, as a god he spent much of his time in heaven. He also maintained an earthly residence high in the Kūnlún mountains, guarded by a human-headed tiger with eight tails. Huangdi was said to have had four faces, so that he could look to all sides without moving his head. When he grew old, Huangdi was carried into the sky by a huge dragon.



Source 3: Huangdi, the Yellow Emperor

Learning ladder H4.2

Background and origins

1. Source 1: Identify the figure that separates the Earth and the sky.
2. Describe the creation of the world, according to ancient Chinese mythology.
3. Explain how the Yellow Emperor helped the people of China.
4. Explain why the story of the Yellow Emperor is considered to be a legend.
5. The existence of the Yellow Emperor cannot be proved. What is the purpose of this legend?

Sources

1. Source 2: Identify the origin of the source.
2. Source 2: Describe the format of the text in the source.
3. Source 2: Explain how people get sick, according to the source.
4. Source 2: Explain why this source adds to the legend of the Yellow Emperor.

Sources, page 191

HOW TO

H4.3

How did geography determine China's destiny?

Ancient China's geography protected it from being invaded.

Natural barriers

Ancient China was safeguarded by the Pacific Ocean to the east, rainforests to the south, high mountain ranges to the west and deserts to the north. This enabled China to develop a unique culture that later influenced many other societies in Asia.

To the east of China is the world's largest ocean: the Pacific. Thick tropical rainforests are found in border regions to the south (modern-day Myanmar, Laos and Vietnam). Invasion from the west was almost impossible because of the world's highest mountain range: the Himalayas.

Most of China's northern border with Mongolia is covered by the Gobi Desert. For extra protection along its northern border, the Chinese built the world's longest defensive structure – the Great Wall of China – to protect against invasions by **nomadic** tribes.

Great river systems

Like other ancient civilisations, rivers and river valleys were the first sites of the civilisation of ancient China. China has two major river systems: the Yangtze and the Yellow (Huang He) rivers. The first villages and towns were built along the banks of these rivers.

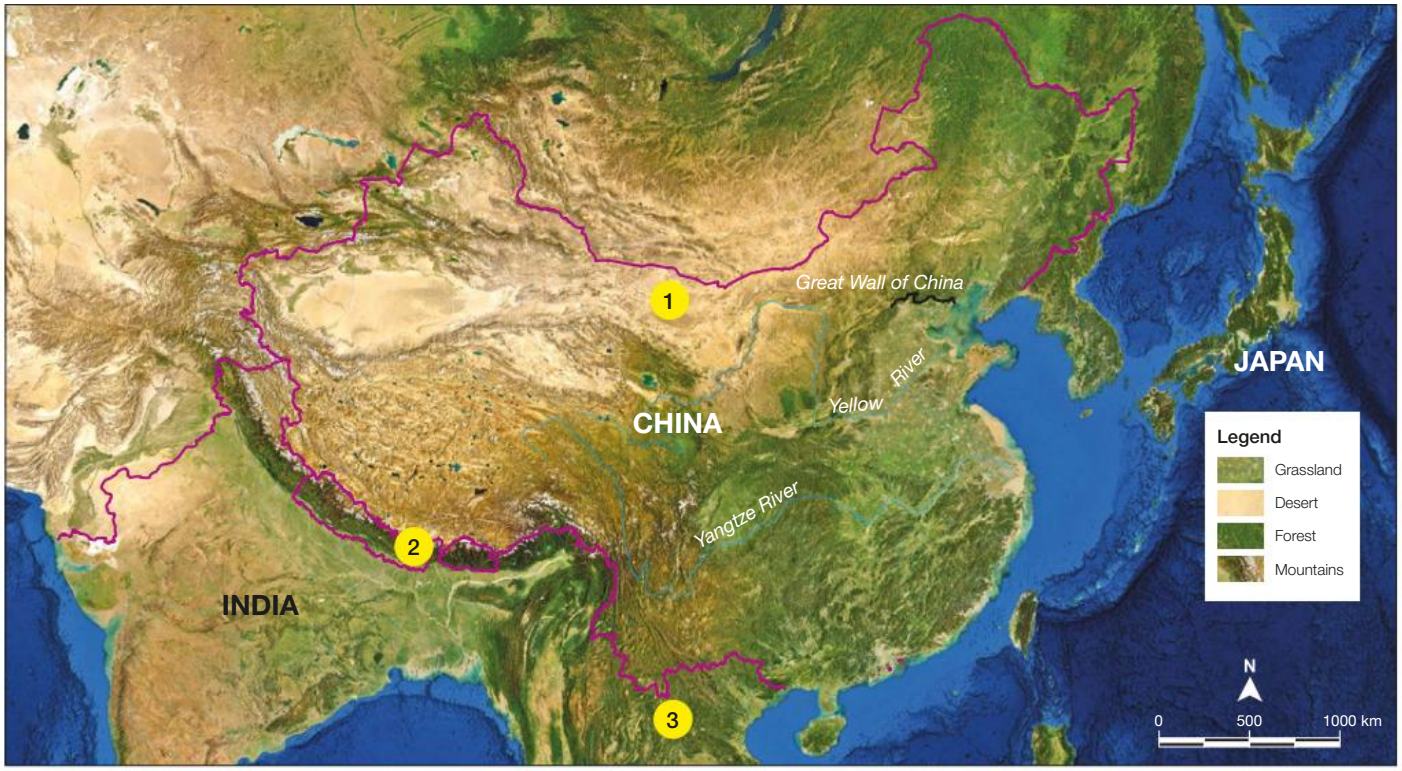
The rivers also helped people to move around the country. A series of canals was built to connect rivers, and boats were used to carry goods and produce between towns to be traded.

Source 1: The Gobi desert

Source 2: Himalayan mountains

Source 3: Laos rainforest

East Asia



Source 4: The terrain of east Asia

Source: Copyright © 2020 Esri and its licensors. All rights reserved.
Overlaid map from Matilda Education Australia.

The Yellow River was especially fertile, due to the special type of fertile soil it carried, known as **loess** soil. When the river flooded, the loess soil was deposited on its banks and floodplains, enabling the people living nearby to grow an abundance of crops. However, the Yellow River is also called 'China's Sorrow', as the floods in ancient times led to the deaths of millions of people. Irrigation systems were developed along the Yangtze River during the Han dynasty (206 BCE–220 CE). Irrigation made farms more productive and helped the Yangtze region became one of the wealthiest regions in China.

Learning ladder H4.3

Background and origins

1. Sources 1–4: Match the numbers 1, 2 and 3 on the map with the physical features shown in Sources 1, 2 and 3.
2. Describe the major river systems of ancient China.
3. Explain how the deserts would have protected China from being invaded.
4. Explain why China's geographical isolation was beneficial.

Causes and consequences

1. Identify a cause for the construction of the Great Wall.
2. Describe the consequences of loess soil.
3. Explain the consequences of the Yellow River for early Chinese settlement.
4. Explain why irrigation systems were developed during the Han dynasty.
5. Evaluate the consequences for people living along the Yellow River or the Yangtze River.

Causes and consequences, page 196

HOW TO

How was ancient Chinese society organised?

The society of ancient China was a strict hierarchy. At the top were the emperor and his family. Below the imperial family were four social classes: nobles and officials, farmers, artisans (skilled craftspeople) and merchants.

Dynastic rule

The rule of Chinese kings and **emperors** in **dynasties** lasted from the Xia dynasty in 2100 BCE until the Qing dynasty in 1912 CE. A dynasty was when one family maintained power, handing down the throne to an heir. Dynasties usually began after a battle for power between rival kingdoms: the victor became the new emperor and started a new dynasty.

The Mandate of Heaven

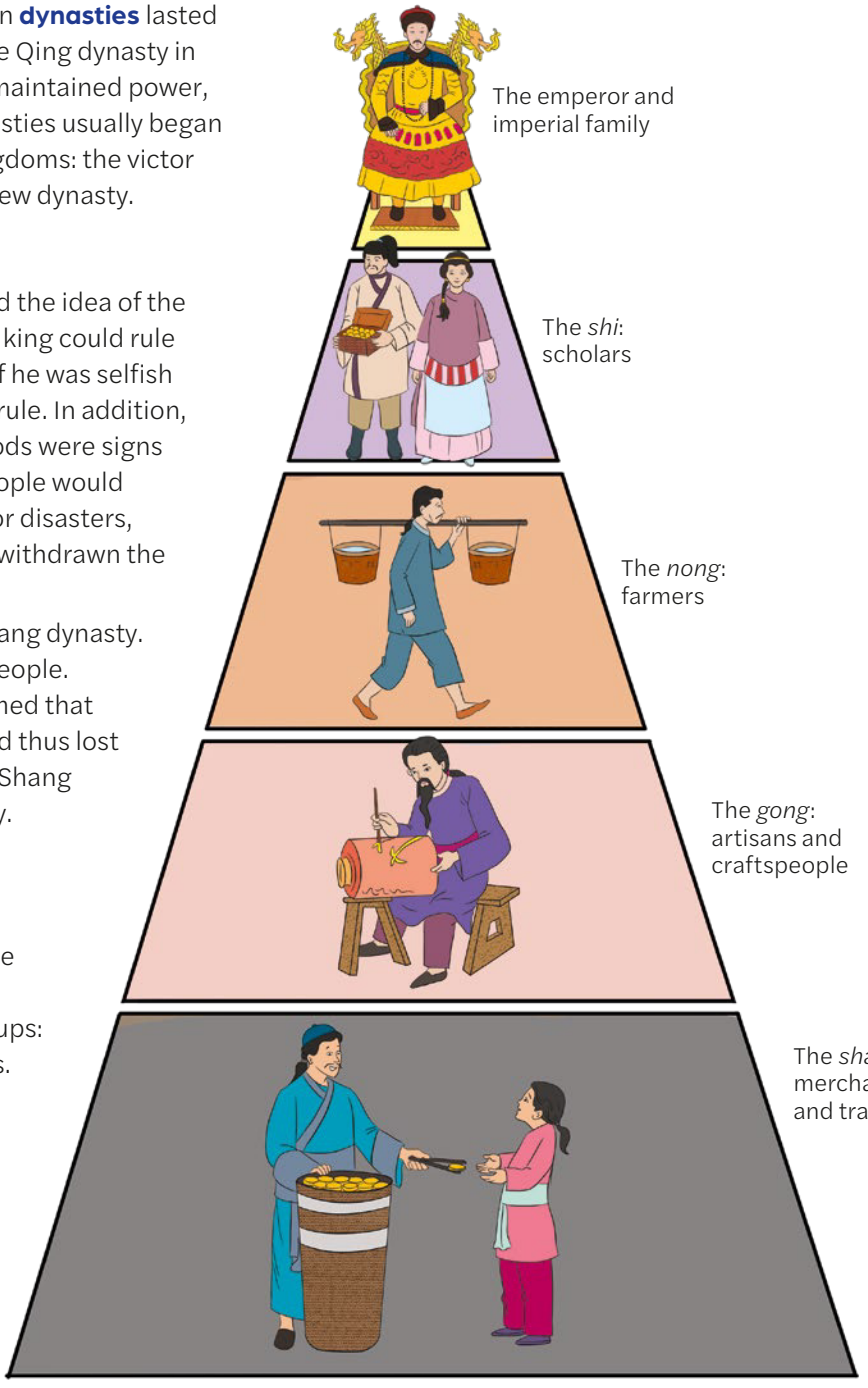
During the Zhou dynasty, rulers developed the idea of the **Mandate of Heaven**, which meant that a king could rule as long as his actions were wise and fair. If he was selfish or cruel, he was considered to be unfit to rule. In addition, natural disasters such as famines and floods were signs of Heaven's displeasure with the king. People would often revolt against their rulers after major disasters, which they saw as signs that Heaven had withdrawn the king's mandate to rule.

King Di Xin was the last king of the Shang dynasty. He inflicted torture and hardship on his people. In 1045 BCE, King Wen and his allies claimed that Di Xin had lost the Mandate of Heaven and thus lost the right to rule. King Wen overthrew the Shang dynasty and established the Zhou dynasty.

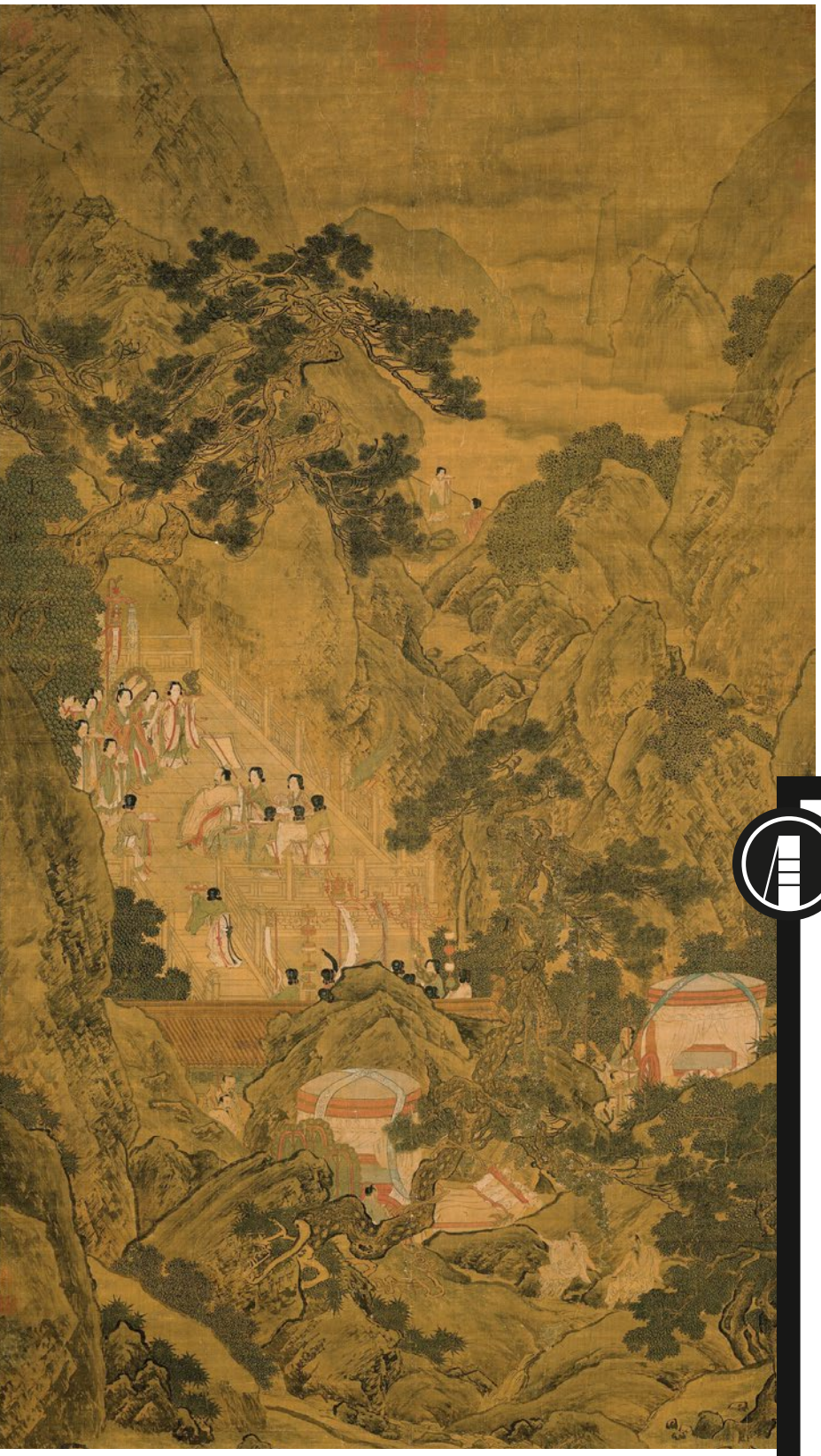
Social order in ancient China

In ancient China, the social order was a hierarchy, with clear divisions between the social classes. Beneath the emperor and imperial family there were four social groups: scholars, farmers, artisans and merchants.

- **Scholars** were known as the *shi*. Scholars came from noble families and were highly respected in ancient China. They served as government officials, carrying out the emperor's orders.



Source 1: The social hierarchy in ancient China ▶



Source 2: Emperors in China were expected to rule with wisdom and justice. In this image painted by Liu Songnian, c. 1200 CE, the goddess Xiwangmu is shown meeting with Emperor Wu of Han. According to legend, the goddess met with the Emperor, shared a banquet with him and gave him important teachings on moral leadership. However, Wu failed to live up to her teachings and lost the Mandate of Heaven.

- **Farmers** were known as the *nong*. They were not wealthy, but were highly respected for their ability to produce food, a necessity of life. Farmers could live on the land in return for working on it. They used rice to pay their tax, and had to serve as soldiers or work on the emperor's building projects when required.
- **Artisans** were known as the *gong*. They were skilled carpenters, metal workers, potters, artists and jewellers. Even though they earned more money than farmers, artisans were not as highly respected, as their products, while useful, were not essential.
- The **merchant class** were known as the *shang*. They were traders and moneylenders. They were on the lowest level of the social hierarchy because they did not produce anything, and only worked for their own gain. Some merchants bought land to farm in a bid to improve their social status.

Learning ladder H4.4

Significant people, ideas and events

1. Identify the four social groups in ancient China.
2. Describe the role of artisans.
3. Source 2: Using the source and your knowledge, explain how rulers were supposed to uphold the Mandate of Heaven.
4. Source 1: Explain why peasants were considered more important than merchants in ancient China.
5. Evaluate the concept of the Mandate of Heaven.

Continuity and change

1. How long was China ruled by dynasties?
2. Describe how merchants could change their social class.
3. Explain how dynasties represented continuity and change in ancient China.
4. Explain why the Zhou were able to justify their overthrow of the Shang dynasty.

HOW TO

Continuity and change, page 193

H4.5

What did the ancient Chinese hold sacred?

Chinese people worshipped many different gods. They also followed the teachings of Confucius and Buddha, which encouraged peace and respect for others.

The three ways

Many of the ideas and events in ancient China were shaped by the three major religions or philosophies: **Taoism**, **Confucianism** and **Buddhism**. Taoism and Confucianism are philosophies that teach followers how to live their lives, while Buddhism is a religion.

Interwoven with the three major belief systems were customs relating to how people were buried and how they arranged their homes, and even ceremonies about how to prepare and share a pot of tea.

Taoism

The founder of Taoism is believed to be Laozi (604–531 BCE). Laozi preached that happiness came from living a simple life in harmony with nature. Through a balanced diet, exercise and breathing techniques such as **qigong**, you could live forever.

In Taoism all living things have two sides: the ***yin*** and the ***yang***. When yin and yang were in balance, there was harmony in the universe. When they were out of balance, famines, disease and natural disasters occurred.

Confucianism

Confucius (551–479 BCE) lived at the same time as Laozi. Confucius taught that people should be honest, brave and knowledgeable and never violent or arrogant. The path to happiness lay in obeying the law, doing one's duty and observing 'right relationships'. 'Right relationships' meant showing respect to elders and people who were socially superior.

Confucius travelled for many years and had a great influence on Chinese beliefs. Even if people became Taoists or Buddhists, they still followed the teachings of Confucius. Here are some of his teachings:

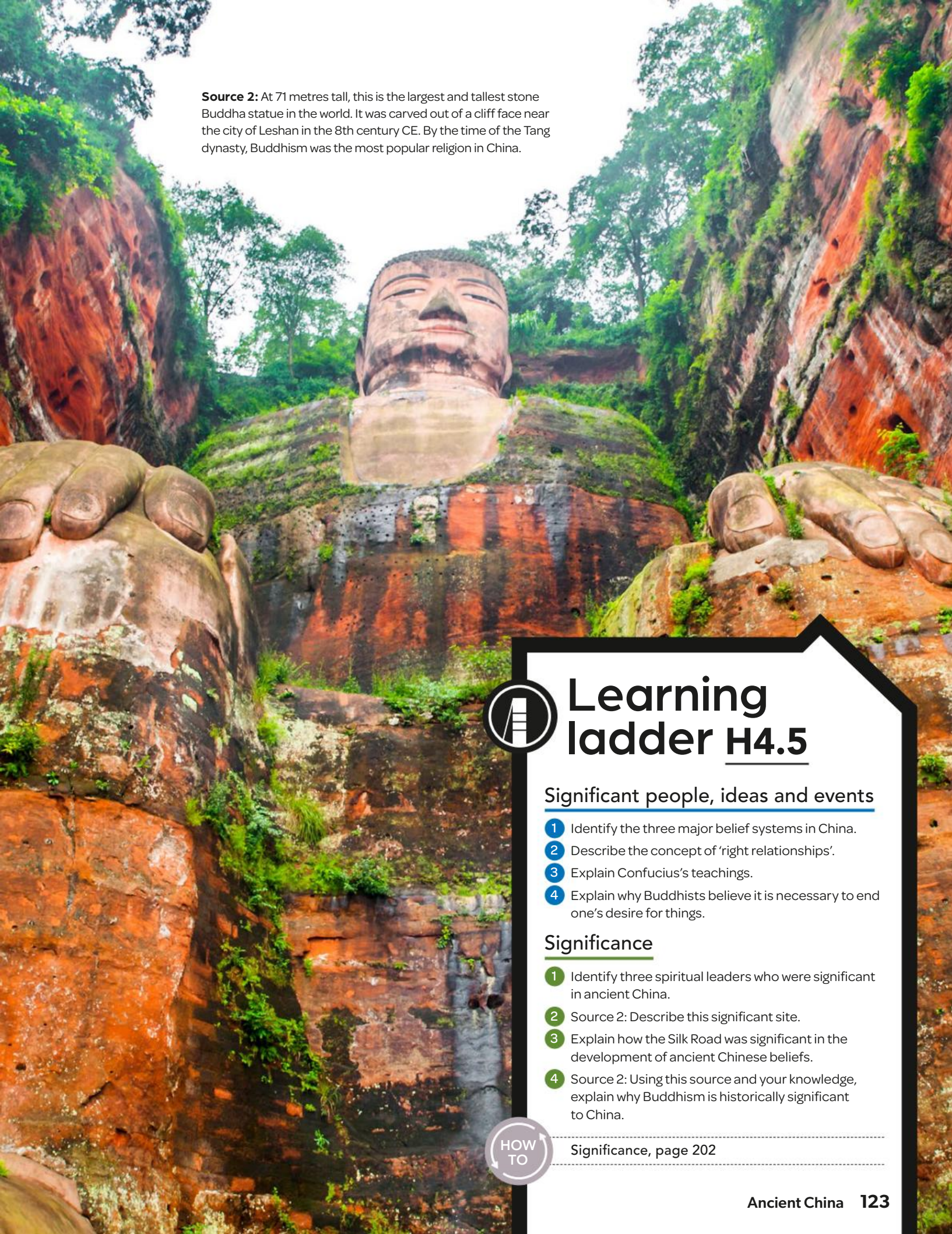
- Do not do unto others what you would not want others to do to you.
- Choose a job you love, and you will never have to work a day in your life.
- Learning without thinking is useless. Thinking without learning is dangerous.
- Our greatest glory is not in never falling, but in rising every time we fall.

Buddhism

Buddhism was founded by Siddhartha Gautama (the Buddha). Buddha taught that all suffering comes from desire (wanting things). He also taught that, after death, people are reincarnated in an endless cycle of rebirth. By ending their desire for things and living a good life, a person could reach nirvana and end the cycle of rebirth.

Originally founded in India, Buddhism arrived in China via the **Silk Road** during the 1st century CE. Buddhist monks from China often used the Silk Road to travel back to India, where they could copy sacred texts and bring them back to China

Source 1: The yin and yang symbol, where the dark is balanced by the light.



Source 2: At 71 metres tall, this is the largest and tallest stone Buddha statue in the world. It was carved out of a cliff face near the city of Leshan in the 8th century CE. By the time of the Tang dynasty, Buddhism was the most popular religion in China.

Learning ladder H4.5

Significant people, ideas and events

1. Identify the three major belief systems in China.
2. Describe the concept of 'right relationships'.
3. Explain Confucius's teachings.
4. Explain why Buddhists believe it is necessary to end one's desire for things.

Significance

1. Identify three spiritual leaders who were significant in ancient China.
2. Source 2: Describe this significant site.
3. Explain how the Silk Road was significant in the development of ancient Chinese beliefs.
4. Source 2: Using this source and your knowledge, explain why Buddhism is historically significant to China.

HOW TO

Significance, page 202

H4.6

What was family life like in ancient China?

In ancient China, several generations of a family lived under one roof, and everyone worshipped their ancestors. Marriages were arranged by the parents and, after the wedding, the bride lived with the husband's family. Women had very few rights outside the home.

Filial piety and the family

Within the family, the concept of filial piety was very important. The oldest male was the leader of the family. All children showed respect to elders and parents, and all women showed respect to men.

This respect to elders was extended even after they had died. Families had small shrines in their houses dedicated to their dead ancestors, and they would ***kowtow***, burn incense and make sacrifices to show their respect.

Women in China

Women had little social status in ancient China, and were expected to obey their fathers and husbands. Only males received an education; girls stayed home to learn how to be housewives and mothers.

A daughter had to marry the husband chosen by her father. She then had to move into her husband's home and obey him and her mother-in-law. Wives had to worship their husband's ancestors and be loyal to their husband's family. The only time a woman gained power was when her son became the head of a household.

Children in ancient China

Children were taught to be submissive to their elders and teachers. From the age of eight, girls were kept separate from boys. They were educated at home, where they learned how to spin thread and weave cloth. Boys were educated by a school master, learning archery, writing, music and mathematics.

From 74 BCE there were efforts to educate the daughters of the emperor and the scholars. Educated women were then expected to advise women on proper behaviour and support the careers of their fathers, husbands or brothers. The historian Ban Zhao wrote *Lessons for Women* (80 CE) and also helped her brother Ban Gu write *The Book of Han* (111 CE).

A woman ought to have four qualifications: (1) womanly virtue; (2) womanly words; (3) womanly bearing; and (4) womanly work.

To guard carefully her chastity; to control her behaviour ... this is womanly virtue.

To choose her words with care; to avoid vulgar language; to speak at appropriate times; and nor to weary others with much conversation, may be called the characteristics of womanly words.

To wash and scrub filth away; to keep clothes and ornaments fresh and clean; to wash the head and bathe the body regularly, and to keep the person free from disgraceful filth, may be called the characteristics of womanly bearing.

With whole-hearted devotion to sew and to weave; to love not gossip and silly laughter; in cleanliness and order to prepare the wine and food for serving guests, may be called the characteristics of womanly work.

Source 1: Exerpt from Ban Zhao (c. 80 CE), *Lessons for Women.* Ban Zhao was a historian and scholar.

Source 2: Image of a son showing filial piety to his parents [Unknown artist, *Classic of Filial Piety*, c. 1000 CE]

Learning ladder H4.6

Significant people, ideas and events

1. Identify which family member was seen as the head of the family.
2. Describe how ancestors continued to be respected after they had died.
3. Compare how girls and boys were educated in ancient China.
4. Explain why noble women could receive an education after 74 CE.
5. Source 1: Evaluate the advantages and disadvantages of filial piety.

Sources

1. Source 1: Identify the origin of this source.
2. Source 2: Describe the concept of filial piety.
3. Source 1: Using the source, explain how noble women were expected to behave.
4. Source 1: Explain why the author of this source has written this text.

Sources, page 191

HOW TO

How was the law exercised in ancient China?

Confucianism and Legalism were the main philosophies that influenced the development of the law in ancient China.

Confucianism and law

Confucius believed that human beings were fundamentally good. He believed that an emphasis on duty and tradition would encourage people to do the right thing. Rather than a set of formal laws and government regulations, Confucius stated that the emperor, as head of Chinese society, should lead his people by example.

Source 1: This image shows Confucius teaching his students.

It was up to the emperor to decide what was good moral behaviour and how crime should be punished. As a result, there were different punishments for crime depending on a person's social or family status.

Legalism

Legalism was a philosophy that developed c. 250 BCE during the Warring States period. In a period of chaos and uncertainty, greater control was needed. Legalism held that humans were selfish and needed to be controlled by a set of clearly defined written laws and harsh punishments. Everyone had to obey the same laws or face harsh punishments, regardless of status. Even the emperor was bound by the law.

That said, the emperor still had the power to decide what the laws were. Legalism was most prominent during the Warring States, Qin and Han periods.

The legal codes

Towards the end of the Warring States period, each of the states had started to write their own legal codes. While many of the laws were influenced by Confucianism, stressing duty and right conduct, the law codes also contained set punishments for breaking the law, which was an influence of Legalism. The law codes contained three main punishments: death, mutilation and slavery. There was also the most extreme punishment – the execution of three generations of the guilty person's family. Lesser punishments included exile, beatings, fines and forced labour.

The role of magistrates

The law was enforced by district magistrates, who were highly respected and had enormous power, authority and status. Magistrates decided cases and they also administered the law, led investigations, collected evidence, caught criminals and summoned witnesses.

> If you lead the people by regulations [and] keep them in order by punishments, they will flee from you and lose all self-respect. But lead them by virtue and keep them in order by the established morality, and they will keep their self-respect and come to you.
>
> **Source 2:** A teaching on wise leadership from Confucius's book *Analects*, c. 470 BCE

> The intelligent ruler applies heavy punishments for minor offences. If the punishment is heavy even when the offence is minor, how much more should it be so when there is a serious offence? That is why the people do not dare to commit offences.
>
> **Source 3:** Le Si, Qin Chief Minister, cited in *Records of the Grand Historian* (109–91 BCE) by Sima Qian

Learning ladder H4.7

Significant people, ideas and events

1. Source 1: Identify the person in the source who influenced Chinese law.
2. Describe the role of magistrates in ancient China.
3. Explain the difference between Confucianism and Legalism.
4. Explain why the ancient Chinese legal codes were a combination of Confucianism and Legalism.
5. Compare the role of the emperor in Confucianism and Legalism.

Perspectives

1. Identify the two different perspectives on the law in ancient China.
2. Sources 2 and 3: Describe the perspective of each source.
3. Sources 2 and 3: Explain how the perspectives are different.
4. Explain why the Warring States period may have contributed to harsher laws.
5. Evaluate the advantages and disadvantages of the two approaches to law and order.

HOW TO Perspectives, page 200

H4.8

Key individual

How did Qin Shi Huangdi rule China?

By 221 BCE, King Zheng of Qin had defeated six small kingdoms to unify China. He renamed himself Qin Shi Huangdi, after Huangdi, the legendary Yellow Emperor. The name means 'the first emperor'. The Qin dynasty lasted only 15 years, but Emperor Qin Shi Huangdi introduced great changes in that time.

A strong and organised leader

Qin Shi Huangdi quickly established control over the conquered states by dividing the country into 36 administrative provinces, each with a governor that reported to him. He developed a single set of laws and a system of roads to link the provinces with the Qin dynasty capital of Xianyang. To make it easier to have centralised control, Qin Shi Huangdi also established a common currency, common units of measurement and standardised writing.

The Great Wall

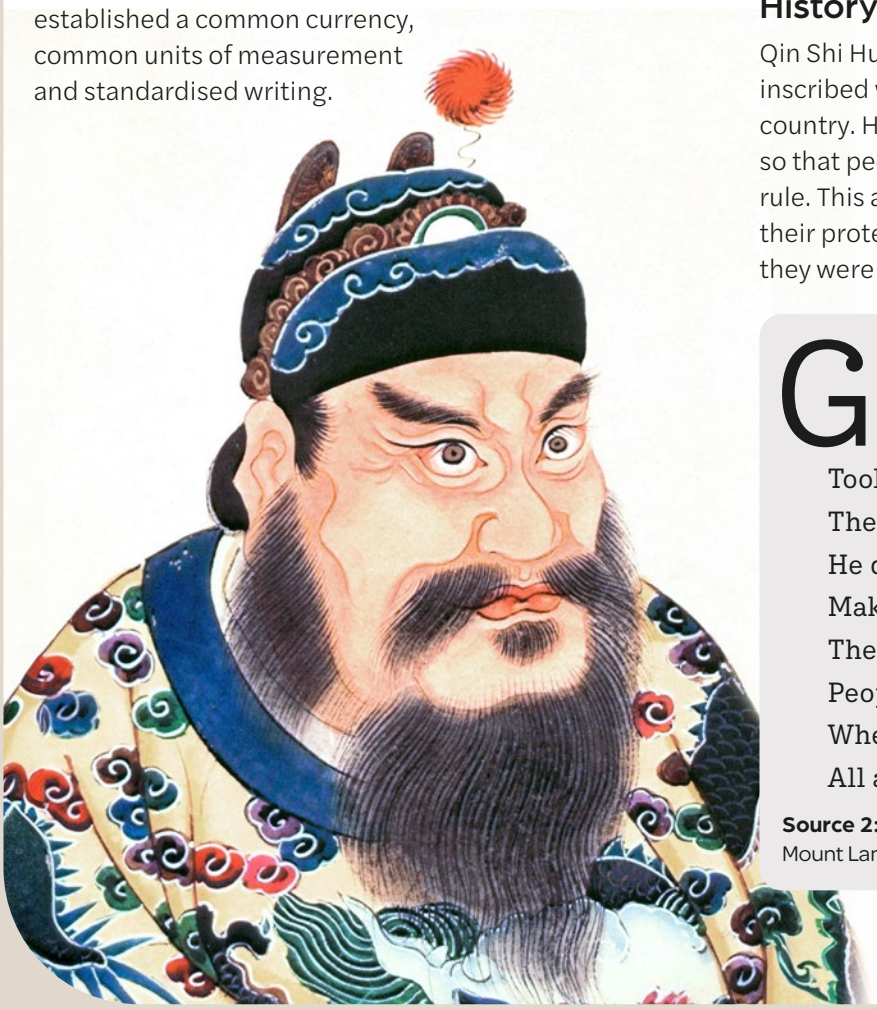
To protect his empire against invasion from the Xiongnu peoples in the north, Emperor Qin built a Great Wall out of rammed earth, wood and stone. He used soldiers and convicts to build the Wall. It is estimated that at least 400 000 people died during the construction of the Great Wall.

History and Emperor Qin

Qin Shi Huangdi also ordered that stone obelisks inscribed with his achievements be set up around the country. He also ordered all history books to be burned, so that people could not compare earlier times to his rule. This act was greatly opposed by the scholars, but their protests were severely punished by the emperor – they were buried alive!

Great are the emperor's achievements ...
All people under Heaven
Work with a common purpose.
Tools and measures are the same ...
The written script is made the same ...
He defines the laws, leaving no one in doubt,
Making known what is forbidden ...
There are no robbers or thieves:
People delight in his rule ...
Wherever life is found,
All acknowledge his supreme rule ...

Source 2: Imperial inscription carved on a stone obelisk at Mount Langya, ordered by Qin Shi Huangdi, c. 218 BCE



Source 1: Qin Shi Huangdi became China's first emperor in 221 BCE. [*Portrait of Qin Shi Huang*, 18th century CE]

Source 3: This painting shows the burning of the books and burying of scholars who disagreed with Chinese Emperor Qin Shi Huangdi in 213 BCE. [*Qin Shi Huangdi, the First Qin Emperor*, c. 1750 CE]

Learning ladder H4.8

Signficant, people, ideas and events

1. Identify which state was victorious in the Warring States period.
2. Source 3: Describe the scene in this source.
3. Source 3: Explain how Emperor Qin tried to shape his legacy.
4. Source 3: Explain why the scholars were opposed to Emperor Qin.
5. Sources 2 and 3: Using the sources and your knowledge, evaluate the rule of Emperor Qin.

Continuity and change

1. Identify the change in the form of leadership that was introduced by Emperor Qin.
2. Describe how Emperor Qin protected his empire.
3. Source 2: Using the source and your knowledge, explain the changes made by Emperor Qin to unify ancient China.
4. Explain why Emperor Qin chose the name 'Huangdi'.
5. Evaluate the advantages and disadvantages of the changes introduced by Emperor Qin.

Continuity and change, page 193

HOW TO

H4.9

Site study

What were the terracotta warriors?

In 1974 CE, three farmers made a chance discovery while they were digging a well in Lintong County, near Xi'an in China. They came upon a pit containing life-sized terracotta statues of warriors. They had stumbled on the tomb of the First Emperor.

A terracotta army

To make sure he was equipped in the afterlife, Qin Shi Huangdi built a magnificent tomb complex measuring two kilometres long and one kilometre wide that included a mausoleum where he was buried, an underground palace and buildings for all the precious treasures he wanted to have in the afterlife. One and a half kilometres away, he buried an army of life-sized terracotta warriors to command in the afterlife: 8000 soldiers, 130 chariots, 520 horses and 150 cavalry horses.

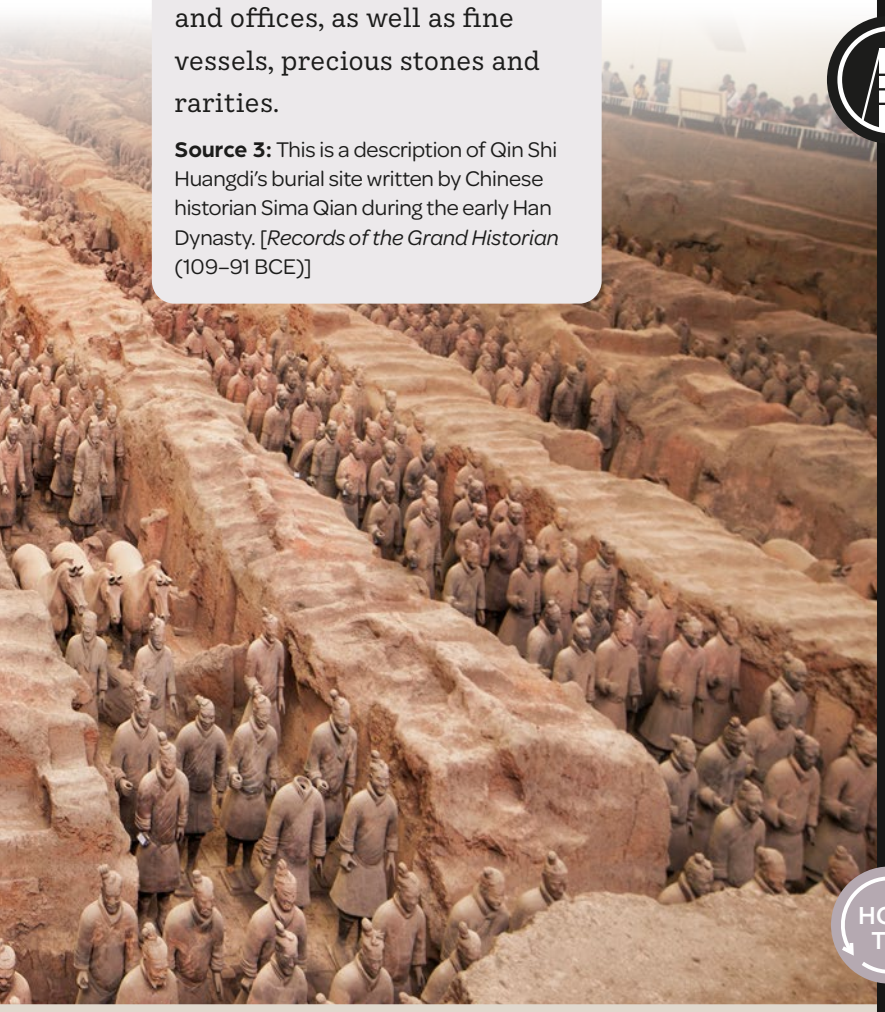
Ancient Chinese historian Sima Qian recorded the construction of the burial site:

Source 1: Each of the 8000 soldiers in the Terracotta Army is life-sized. The officers are taller than regular soldiers, and the generals are the tallest of them all. There are ten basic face shapes, but each soldier has a different expression. The site is separated into pits, divided by walls of rammed soil. The soldiers are arranged in columns in battle formation. The Emperor wanted the same army that had brought him to power in life to protect him in the afterlife. [*Terracotta Army*, 3rd century BCE, Lintong District, Shaanxi, China]

Source 2: In 2019 CE, the National Gallery of Victoria hosted an exhibition of the terracotta warriors. While the terracotta warriors on display were real, this chariot from Emperor Qin's tomb was a replica because the original is too delicate and precious to move. [Chariot #1, Qin dynasty replica, 225 × 152 cm, bronze, National Gallery of Victoria, Melbourne, Australia]

As soon as the First Emperor became King of Qin, excavations and building were started at Mount Li, while after he won the empire more than 700 000 conscripts from all parts of the empire worked there. They dug through three streams and poured molten copper for the outer coffin, and the tomb was fitted with models of palaces, pavillions and offices, as well as fine vessels, precious stones and rarities.

Source 3: This is a description of Qin Shi Huangdi's burial site written by Chinese historian Sima Qian during the early Han Dynasty. [*Records of the Grand Historian* (109–91 BCE)]



Learning ladder H4.9

Significant people, ideas and events

1. Identify the location of Emperor Qin's tomb.
2. Source 3: Describe the features of the tomb, according to Sima Qian.
3. Source 1: Explain how the terracotta warriors were made to look like an army.
4. Source 1: Explain why the terracotta warriors were included in the tomb.

Significance

1. Identify who discovered this significant site.
2. Describe the size of Emperor Qin's tomb.
3. Source 2: Explain how this replica artefact demonstrates the significance of the original.
4. Source 1: Explain why this site is historically significant.
5. Sources 1, 2 and 3: Using these sources, explain why Emperor Qin's tomb shows that he was considered significant in his own time.

HOW TO

Significance, page 202

Who killed Qin Shi Huangdi?

In 210 BCE, Shi Huangdi died while on tour. His death was not announced for two months, by which time his eldest son and one of his most trusted generals had also died. We still do not know the cause of Qin Shi Huangdi's death.

Did he die of mercury poisoning?

One theory holds that Emperor Qin died of mercury poisoning. He was desperate to become immortal and willing to try almost anything to ensure that he lived forever. He sent his court sorcerer, Xu Fu, to travel the seas in search of the 'elixir of life', a magic potion that would allow him to live forever.

Xu Fu never found the elixir. He did, however, seem to have a great time sailing around and living the high life. Emperor Qin refused to accept that his court sorcerer was playing him for a fool and kept sending Xu Fu more money, jewellery and supplies in the hope that Xu Fu would 'soon' return with the elixir.

In the meantime, Emperor Qin ingested many potions and herbal mixtures, some of which may have contained mercury (which is toxic), hoping to prolong his life.

Was he assassinated?

Another theory is that Qin was **assassinated**. During the Warring States period, there had been two assassination attempts on Emperor Qin made by the leaders of the rival state of Yan. Another attempt was made in 218 BCE by Zhang Liang, a noble from the former state of Han.

There were also members of Emperor Qin's inner circle who could have assassinated him in 210 CE. Some historians believe that there was a conspiracy between Hu Hai, the emperor's youngest son; Zhao Gao, the emperor's chief official; and Li Si, the Qin Chief Minister.

Emperor Qin's last orders were contained in a letter to his eldest son Fu Su, whom he had named as heir. Li Si and Zhao Gao feared that, on his succession, Fu Su would have them dismissed and killed. So when Emperor Qin died (whether of an 'immortality potion' or murder), they destroyed the letter announcing Fu Su as Shi Huangdi's heir, and forged a new letter to Fu Su from his father, ordering him to commit suicide.

Meanwhile, they covered up Emperor Qin's death for two months. Li Si ordered carts of rotten fish to be carried in front of and behind the wagon of the Emperor, to cover the smell of his decomposing body. He, Zhao Gao and Hu Hai pretended the emperor was still alive, changing his clothes every day, bringing him food and pretending to carry messages to him.

Source 1: *The Expedition of Xu Fu* by Japanese artist Utagawa Kuniyoshi [woodcut print, 1843 CE]

Source 2: This painting shows Qin Shi Huangdi's imperial tour, 210 BCE. [*Qin Shi Huang's Imperial Tour Across his Empire*, c. 18th century CE]

After Fu Su had committed suicide, the conspirators then forged a decree that called for the emperor's younger son, Hu Hai, to ascend the throne. Hu Hai proved to be a weak emperor and his rule was overthrown in 207 CE.

From what I have heard, the Second Emperor was a younger son and ought never to have succeeded to the throne. The one who should have been made ruler was Prince Fu Su. ... Someone has told me that though Fu Su was guilty of no crime, he has been murdered by the Second Emperor.

Source 3: Chen Sheng, quoted in Sima Qian, *Records of the Grand Historian* (109–91 BCE). Chen Sheng was the former King of Chu. He led a rebellion against the Qin dynasty in 209 BCE.

In 218 BC, Qin Shi Huangdi was travelling to the east. Bandits tried to attack him, but they escaped and could not be found, despite a ten-day 'great search' ordered throughout the empire. Zhang Liang, a descendent of the former Han state, had organised the plot ... This incident indicates that Qin Shi Huangdi had not yet gained the allegiance of his subjects, particularly aristocrats and descendants of the former feudal lords. They all wanted to restore the old feudal state system. In fact, after the execution of the Confucian scholars and the burning of the books (214 BCE), which generated extensive social tension, more and more people became resentful about Emperor Qin's rule.

Source 4: Historian Hong Yuan's account of the reasons for the death of Emperor Qin. [Hong Yuan (2018 CE), *The Sinitic Civilization Book II: A Factual History Through the Lens of Archaeology, Bronzeware, Astronomy, Divination, Calendar and the Annals*, iUniverse]

Learning ladder H4.10

Significant people, ideas and events

1. Source 1: Identify the key individual whose ship is pictured in this scene.
2. Describe Qin Shi Huangdi's quest for immortality.
3. Explain how members of the emperor's inner circle could have assassinated him.
4. Explain why members of the emperor's inner circle may have assassinated him.

Interpretations

1. Identify the debate over the cause of Qin Shi Huangdi's death.
2. Describe the two possible explanations for Emperor Qin's death.
3. Source 3: Explain how this source accounts for the death of Emperor Qin.
4. Source 4: Explain why the author of this source believes Qin was assassinated.
5. Which theory do you think is correct? Explain your choice.

HOW TO Interpretations, page 204

What was life like in a Han dynasty city?

The Han dynasty was a time of peace and prosperity. Chinese cities became the largest and most magnificent in the world. The cities were lively, organised and controlled places where people lived according to their occupation.

The Han dynasty

The Han dynasty was one of China's longest ruling dynasties, lasting for more than 400 years. In 202 BCE, the Han army seized control of China following eight years of fighting after the death of Emperor Qin Shi Huangdi in 210 BCE and the surrender of the last Qin ruler in 206 BCE. Their leader was a peasant named Liu Bang, who renamed himself Gaozu. He was the first peasant to become emperor.

Emperor Gaozu began to restore the people's faith in leadership after they had lived in fear during the Qin dynasty. He did this by:

- disbanding his armies
- excusing men with families from military service
- appointing people to jobs based on their performance on exams rather than who their parents were
- reducing taxes
- making laws easier to understand
- promoting Confucianism
- attempting to replace books destroyed by Qin Shi Huangdi.

Source 1: The Chinese city of Chang'an (now Xian) during the Han dynasty. The city was surrounded by a 12-metre-high wall that stretched for 25.7 kilometres.

The Emperor's Palace
The imperial palace was located inside its own walled city. It was located in the north of the city.

Organised cities
Cities were neatly set out with a network of streets. Each main street was wide enough for traffic and market stalls.

Travelling in style
Wealthy people travelled in a carriage pulled by horses, or in a sedan chair (a bit like a car body without wheels) carried by two, four or eight people.

City life

The walled city of Chang'an was vibrant and crowded. The roads were filled with merchants, shopkeepers, craftsmen, officials, entertainers, soldiers and beggars.

The marketplace was just inside the city gates, which was ideal for travelling merchants. Goods were sourced from far and wide by merchants travelling on the trading route called the Silk Road. People bought and sold animals and food, including exotic foods such as turtles, snails, panthers and owls. Craftsmen sold paintings, pottery, carvings and jewellery. Entertainment was provided by musicians, jugglers and acrobats.

Inside the town walls were further walls that divided the city into sections, called wards. Each ward was identified by the occupation of its residents. For example, all artists' and craft shops were in the same ward. Wards were locked at night and people had a curfew, which meant they had to stay indoors after a set time.

The palace was located in the north of the city. High walls were used to limit access to imperial palace buildings, administrative offices, military barracks and storehouses.

Peasants lived in alleyways or on farms, in shacks with thatched roofs and walls of mudbrick. They had a single room for living, eating and sleeping, and used shared toilets.

Learning ladder H4.11

Significant people, ideas and events

1. Source 1: Identify the location of the emperor's palace in the city of Chang'an.
2. Source 1: Describe the houses of wealthy Chinese people in ancient times.
3. Explain how the city was kept secure.
4. Source 1: Using this source and your knowledge, explain how cities reflected China's social hierarchy during the Han dynasty.

Continuity and change

1. Identify two changes made by Emperor Gaozu to ancient China's government.
2. Describe how the changes made by Emperor Gaozu were fairer for ordinary Chinese people.
3. Explain how Emperor Gaozu restored faith in leadership following the harsh conditions of the Qin dynasty.
4. Explain the ways in which Chinese cities are different from and similar to modern cities today.

HOW TO Continuity and change, page 193

Wooden homes
Chinese cities were made of wood. They were quick to build, but easily destroyed by fire.

Courtyards
Houses of wealthy people were built around a courtyard, known as the 'well of heaven'. Around the courtyard were the bedrooms, kitchen, storage room and women's quarters.

Shops
Shops sold goods from all over the world. Merchants used umbrellas – a Chinese invention – to protect their goods from the sun.

How did the Silk Road connect the world?

The Silk Road is the name of the trade route that developed from eastern China to the Mediterranean Sea during the Han dynasty. The route was first established by a diplomat named Zhang Qian to bring 3000 warhorses from Central Asia into China.

The quest for horses

In 138 BCE, a diplomat named Zhang Qian was sent on the long and hazardous journey to central Asia to find allies who would help China fight the Xiongnu.

However, Zhang Qian was captured by the Xiongnu and held captive for 10 years. After escaping and arriving back in China, Zhang Qian told Emperor Wudi about the Dayuan people, who lived in the Ferghan Valley with their horses:

> The people are settled on the land, plowing the fields and growing rice and wheat. They also make wine out of grapes. The region has many fine horses, which sweat blood; their forebears are supposed to have been foaled from heavenly horses.
>
> **Source 1:** Extract from Sima Qian (109–91 BCE), *Records of the Grand Historian*

Because of continual warfare among **empires** in Asia, maintaining an empire depended on being able to fight on horseback. The Dayuan horses were a special breed: they were taller, stronger and faster than Chinese horses.

Emperor Wudi ordered Zhang Qian to trade silk for 1000 horses and bring them back to China. However, the Dayuan king refused to trade.

Emperor Wudi then sent large armies of up to 60 000 men to fight the Dayuan and seize the horses. After defeating the Dayuan, 3000 horses were brought back to China, although only 1000 horses survived the journey. Later, with the help of the Dayuan horses, China defeated the Xiongnu. The road between Dayuan and China became the first part of a trade route that was known as the Silk Road.

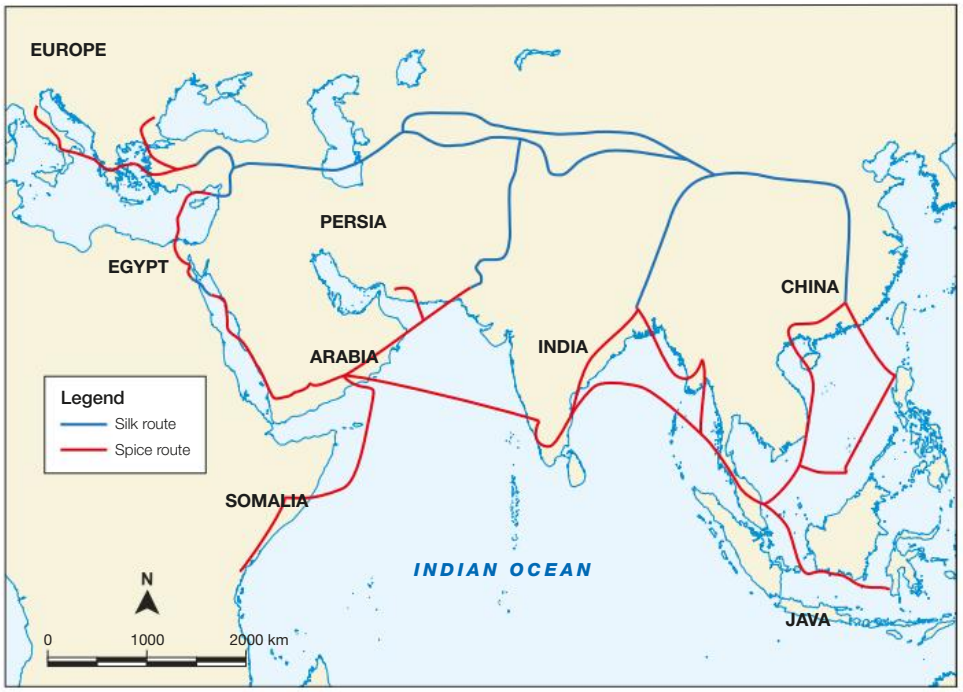
Trade along the Silk Road

The Silk Road was a 6500-kilometre network of routes over land and sea that connected China to Asia, Europe and the Mediterranean. Camel caravans carried goods along the route through the mountain ranges and deserts of southern Asia.

Source 2: A bronze sculpture of a Dayuan horse from the 2nd century CE. Dayuan horses had an infection that made them sweat blood. The Chinese considered this a sign that the horses were marked by heaven, making them 'heavenly horses'. [*Flying horse of Gansu* (25–220 CE), bronze]

Source 3: Map showing the silk route and the spice route linking East and West

Trading routes to and from ancient China



Source: Matilda Education Australia

Ancient China's most important **export** was silk. Silk was highly prized by people in other countries. For a long time, spinning silk from the cocoons of silkworms was a skill known only by the Chinese. People were executed if they were caught stealing silkworm eggs or cocoons. A thin, strong form of pottery called porcelain was another important Chinese product. Merchants also exported umbrellas, paper, medicines, perfumes, tea, rice, cinnamon, ginger, bronze weapons and mirrors.

Horses and camels were **imported** from central Asia, along with luxury goods such as gold, silver, gemstones and glassware. Exotic items such as grapes, watermelons, peaches, leopards and lions also reached China, along with fabrics, spices, dyes and ivory from India.

An additional importance of the Silk Road was that it introduced new ideas into ancient China, such as Buddhism, and new technologies for making metal. In turn, China's secrets for making silk were eventually passed on to others along the Silk Road. The Silk Road also exposed traders to new ailments, such as intestinal worms, leprosy and anthrax, which spread along the route.

Source 4: Tea was one of the many items traded on the Silk Road.

Learning ladder H4.12

Impact and legacies

1. Identify the main exports from ancient China.
2. Source 3: Describe the path of the Silk Road between China and Europe.
3. Explain how Emperor Wudi obtained the Dayuan horses.
4. Explain which imports would have been the most useful to ancient China.
5. What changes introduced to China through the Silk Road would have had the greatest impact? Why?

Causes and consequences

1. Identify two consequences of trade on the Silk Road.
2. Describe the cause of Zhang Qian's journey.
3. Explain how ancient Chinese people's knowledge of silk-making was protected.
4. Source 1: Use the source and your knowledge to explain why Chinese people wanted horses from Dayuan.
5. Analyse the causes and consequences of China's contact with other societies.

HOW TO

Causes and consequences, page 196

H4.13

What are the legacies of the ancient Chinese?

The ancient Chinese were remarkable inventors, and many of their inventions are still in use today. Among the countless Chinese inventions are four that changed the world: the magnetic compass, papermaking, printing and an early form of gunpowder.

Magnetic compass

Historians believe the magnetic compass was invented in about 206 BCE, during the Han dynasty. Early Chinese compasses were made using lodestone, which is naturally magnetic. The lodestone was carved into a spoon-shaped needle and placed on a bronze plate. As the plate was moved, the spoon spun until it stopped with its point facing south. For this reason, early compasses were called 'south-pointers'.

The earliest compasses were used to create buildings that matched the principles of *feng shui*, a belief that buildings, temples and tombs should face the most spiritually harmonious direction. It wasn't until the Song dynasty in the 11th century CE that compasses were used for navigation.

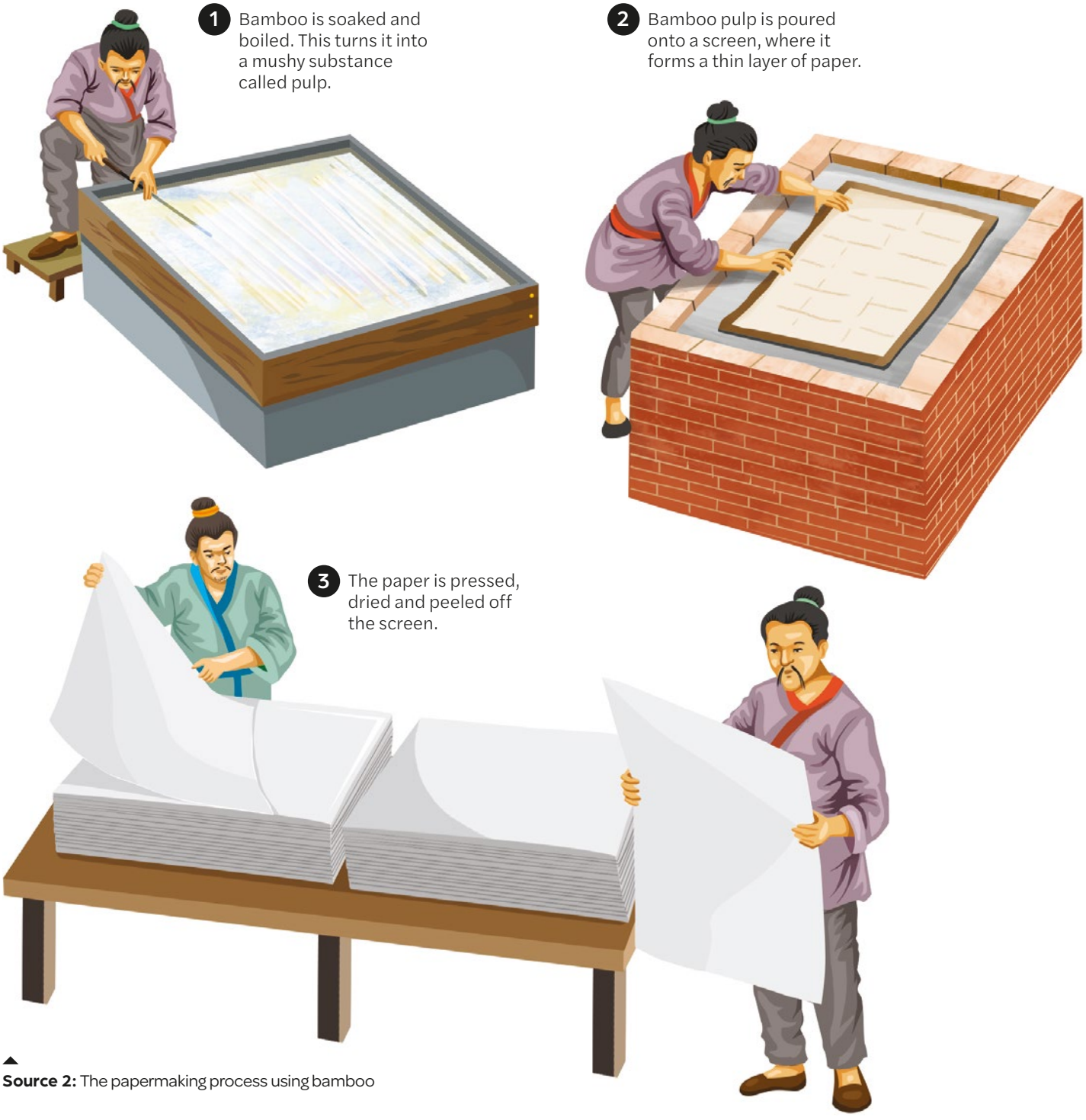
Papermaking

The invention of paper and printing had a huge impact on communication around the world. Before the invention of paper, people in China wrote on bones, tortoise shells, wood, bamboo and even silk. Books were made from wood or bamboo.

The person credited with inventing papermaking is Cai Lu, who was head of the imperial workshops. In 105 CE, Cai Lu came up with a process for making paper from bark, cloth and old fishing nets. These raw materials were cheap and easily available, making it possible to produce large quantities of paper.

The technique for papermaking slowly spread out from China to other parts of the world: first to Korea in 384 CE, then Japan in 610 CE, arriving in India by the 11th century CE. Eventually China's papermaking technique spread around the whole world, because paper provided a lighter, cheaper and better surface for writing than anything that had existed before.

Source 1: The first magnetic compasses were known as south-pointers.



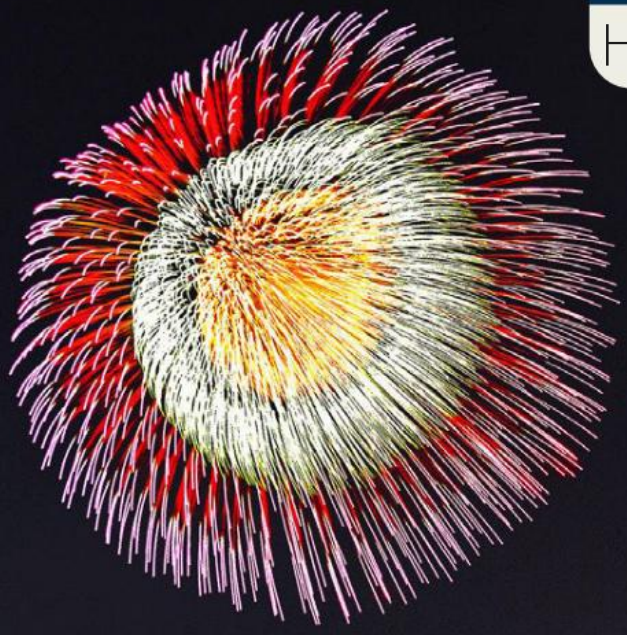
Source 2: The papermaking process using bamboo

Printing

Block printing was invented in China during the ancient period. It involved carving patterns on wooden blocks and using these blocks to print images on fabric. The earliest woodblock-printed fabric dates from the Han dynasty. It is a fragment of silk cloth printed with flowers in three colours. The Chinese would later use their knowledge of fabric printing to develop printing on paper in c. 650 CE.

Gunpowder

An early form of gunpowder was first mentioned in 142 CE, when Wei Boyang described a mixture of three substances that would 'fly and dance' violently. These three powders were sulphur, charcoal and saltpetre.



During the ancient period, this mixture was used for fireworks. Paper tubes were filled with the mixture and a fuse was inserted. When the fuse was lit, the firework ignited. The ancient Chinese used fireworks to ward off evil spirits and to celebrate births, weddings and special occasions. The Chinese would further develop their firework mixture to create gunpowder in the early 9th century CE.

Source 3: Chinese invention timeline, 600 BCE–142 CE

600 BCE
Folding umbrella

500 BCE
Gas lighting

113 BCE
Acupuncture

500 BCE
Cast iron

206 BCE
Magnetic compass

Source 4: Fireworks near a traditional Chinese pagoda. Pagodas were first constructed during the ancient period to house sacred Buddhist relics and writings.

Learning ladder H4.13

Impact and legacies

1. Identify the major inventions that ancient China left as a legacy for the world.
2. Source 2: Describe how paper was made.
3. Explain how the inventions of the ancient period had developed by the medieval period.
4. Explain why papermaking was so revolutionary.

Chronology

1. Source 3: Use the timeline on this page to answer the following questions.
   - **a** When was the folding umbrella invented?
   - **b** What major items were invented in a 37-year period from 105 CE?
2. Put these Chinese inventions in order from the earliest to the latest invention:
   - c. 1700 BCE: bronze smelting
   - c. 1050 BCE: iron smelting
   - c. 2700 BCE: tea production
   - c. 425 BCE: kites.
3. Using appropriate conventions, create a timeline using the events from Question 2.
4. Explain the consequences of three ancient Chinese inventions for the world today.

HOW TO

Chronology, page 188

H4.14

Site study

Why is there a Great Wall of China?

The Great Wall of China is a 21 196-kilometre-long wall that was built to protect China's northern border from invaders. The wall began as a number of smaller walls and fortifications, which were first built around 771 BCE during the Zhou dynasty (1046–256 BCE). Construction on the Great Wall began in 214 BCE, when China's first emperor, Qin Shi Huang, ordered that the existing fortifications in the north be joined so that a single strong wall with lookout towers would protect his empire against invasions by nomadic tribes such as the Xiongnu. The first part of Qin's wall was completed in 212 BCE, but the structure we see today was rebuilt during the Ming Dynasty (1368–1644 CE).

Source 1: This illustration shows the construction of the Great Wall of China.

Bamboo scaffolding

Bamboo was used to build scaffolding, which helped the workers build the high wall and watchtowers. Bamboo is a very strong grass that is still used for scaffolding today.

Roadway

The top of the Great Wall acted as a road, so troops could quickly move to any point along the wall. The road is 6 metres wide in places and could fit five horsemen abreast.

Army of workers

Millions of soldiers, farmers, convicted criminals and slaves built the wall, with construction taking more than 1800 years. Guards forced the builders to work hard, and stopped them from escaping.

Building the wall

Local materials were used to build the wall. The outer brick walls were made from local mud. The section between the outer walls was filled with local soil, sand, stones and twigs, transported in baskets. It also contains the bodies of thousands of workers who died working on the wall.

Battlements

Raised sections of brick wall, called battlements, were built during the Ming dynasty. Gaps were left at the very top of the battlement so archers could shoot arrows at enemies.

Great Wall

The completed Great Wall of China was about 7 metres tall and stretched for 21 196 kilometres in northern China.

Beacon towers

Watchtowers were built along the wall so guards could watch for invaders. Guards would send signals if they saw invaders, using smoke signals during the day and lights at night.

Deadly work

Accidents were common during construction on the wall. Working conditions were difficult, and at least 100 000 men died.

Learning ladder H4.14

Impact and legacies

1. Source 1: What types of workers built the wall?
2. Source 1: Describe the materials used to build the Great Wall.
3. Source 1: Explain why guards were needed for the workers at the Great Wall.
4. What statement did the Great Wall of China make to neighbouring people? How effective do you think it was against invading armies?

Chronology

1. When were the first fortifications built?
2. Put these events in chronological order, from the earliest to the latest event:
   - 771 BCE: the Zhou dynasty builds a series of small walls
   - 212 BCE: Qin's northern wall is completed
   - 133–129 BCE: Han dynasty wars with the Xiongnu tribes
   - 120 BCE: Emperor Wu extends the Great Wall
   - 221 BCE: Qin destroys the fortifications that divided his empire
   - 214 BCE: Qin begins building a northern wall to protect his empire
   - 215 BCE: Qin's war with the Xiongnu tribes.
3. Using appropriate conventions, create a timeline using the dates in Question 2.
4. Using the timeline you have created, explain why the Great Wall was constructed and extended during the ancient period.

HOW TO

Chronology, page 188

How do I conduct a good inquiry?

Now that you've finished the chapter, it's time to conduct your own historical inquiry on ancient China. Throughout the chapter you have developed knowledge and understanding of ancient China. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own historical inquiry!

A historical inquiry gives you the opportunity to be an active historian: forming questions, interrogating sources and communicating insights about the past on a topic of your choice.

The chapter has covered the origins and legacies of ancient China in addition to significant people, events, ideas and beliefs. What would you like to know more about?

- The role of Buddhism in ancient China, page 122
- The lives of women in ancient China, page 124
- The development of the Silk Road, page 136
- The Warring States period, page 128
- The tombs of ancient China, page 130

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas.

Once you have worked through this process, you are ready to start the historical inquiry. Refer to pages 208–213 of the How-to chapter for a step-by-step guide to this process.

See

What do you see?
Who is involved?
What are the key features?
When and where was this happening?

Think

What do you think about that?
How do you think people were affected at the time?
How is this similar to or different from today?

Wonder

What does it make you wonder?
What did different groups think about this?
Why is this important to know?

Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to expand your knowledge and attempt new skills.
When planning your inquiry, consider how the experiences and perspectives of individuals and groups shaped societies, beliefs and events in the past. Think about how the past has had an impact on the present. Use the How-to chapter to support your planning and research.

Ancient societies
(10 000 BCE – 600 CE)

Ancient Greece

H5

WHO WAS ATHENA?

WHERE DID THE FIRST DEMOCRACY DEVELOP?

WHAT WAS LIFE LIKE IN SPARTA?

WHO WAS ALEXANDER THE GREAT?

How can I understand ancient Greece?

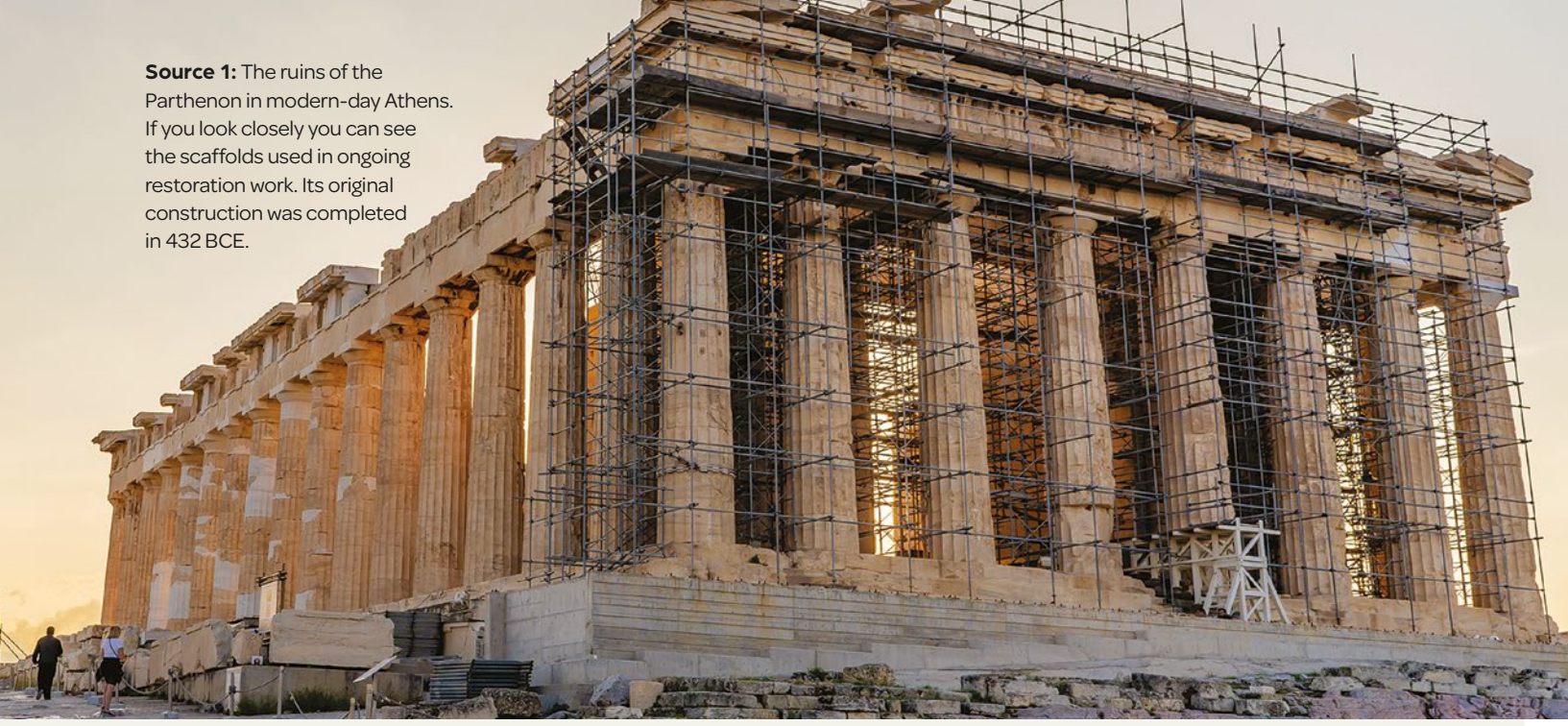
The ancient Greek civilisation dominated the Mediterranean region. The innovations of the ancient Greeks in areas such as government, philosophy, mathematics, architecture, literature and sport are still relevant in the modern world.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Background and origins	Significant people, ideas and events	Impact and legacies	Continuity and change	Causes and consequences
5	I can evaluate the impact of the rise and fall of societies.	I can evaluate how societies were influenced by significant people and ideas.	I can evaluate the legacy of a society.	I can evaluate patterns of continuity and/or change.	I can analyse causes and consequences.
4	I can explain why a society developed.	I can explain why ideas influenced people and events.	I can explain why a society has a legacy.	I can explain patterns of continuity and/ or change.	I can explain why something was caused or why it led to certain consequences.
3	I can explain how a society developed.	I can explain how ideas influenced people and events.	I can explain the impact of one society on another.	I can explain continuity and change.	I can explain how something was caused or its consequence.
2	I can describe the origins of societies.	I can describe key people, ideas and events.	I can describe the legacy of a society.	I can describe continuity and change.	I can describe causes and consequences.
1	I can identify the origins of societies.	I can identify key people, ideas and events.	I can identify the legacy of a society.	I can identify continuity and change.	I can identify a cause and a consequence.

Knowledge and understanding



Source 1: The ruins of the Parthenon in modern-day Athens. If you look closely you can see the scaffolds used in ongoing restoration work. Its original construction was completed in 432 BCE.

I can evaluate historical perspectives.	I can evaluate historical significance.	I can evaluate the evidence supporting a historical interpretation.	I can explain change or causality from a timeline.	I can evaluate sources to determine their accuracy, usefulness and reliability.	5
I can compare perspectives.	I can explain why something is historically significant.	I can compare historical interpretations.	I can summarise the events on a timeline.	I can explain the historical context of a source.	4
I can explain a perspective.	I can explain something historically significant.	I can explain an interpretation of history.	I can follow timeline conventions.	I can apply historical knowledge to explain sources.	3
I can describe perspectives.	I can describe something historically significant.	I can describe an interpretation of history.	I can place events on a timeline chronologically.	I can describe a source.	2
I can identify the perspective of a person from the past.	I can identify something historically significant.	I can identify a historical debate.	I can read a timeline.	I can identify the origin of a source.	1
Perspectives	**Significance**	**Interpretations**	**Chronology**	**Sources**	Steps in skills progression

Historical concepts and skills

How did the ancient Greek civilisation develop?

Ancient Greece was not a united nation. The ancient civilisation consisted of hundreds of independent small communities, which were separated by the sea and mountains.

Ancient Greece

Located in south-east Europe, ancient Greece was a loosely united civilisation that started at the end of the **Bronze Age** (c. 12th century BCE) and ended with the death of Alexander the Great in 323 BCE.

Greece's geography

Ancient Greece covered modern-day Greece, along with parts of modern-day Turkey and settlements around the Mediterranean Sea and the Black Sea (see Source 3). Greece's mountainous landscape and many islands meant that settlements were isolated from each other. Partly because of the physical barriers, the centres of human habitation grew into separate **city–states** rather than into a single Greek nation.

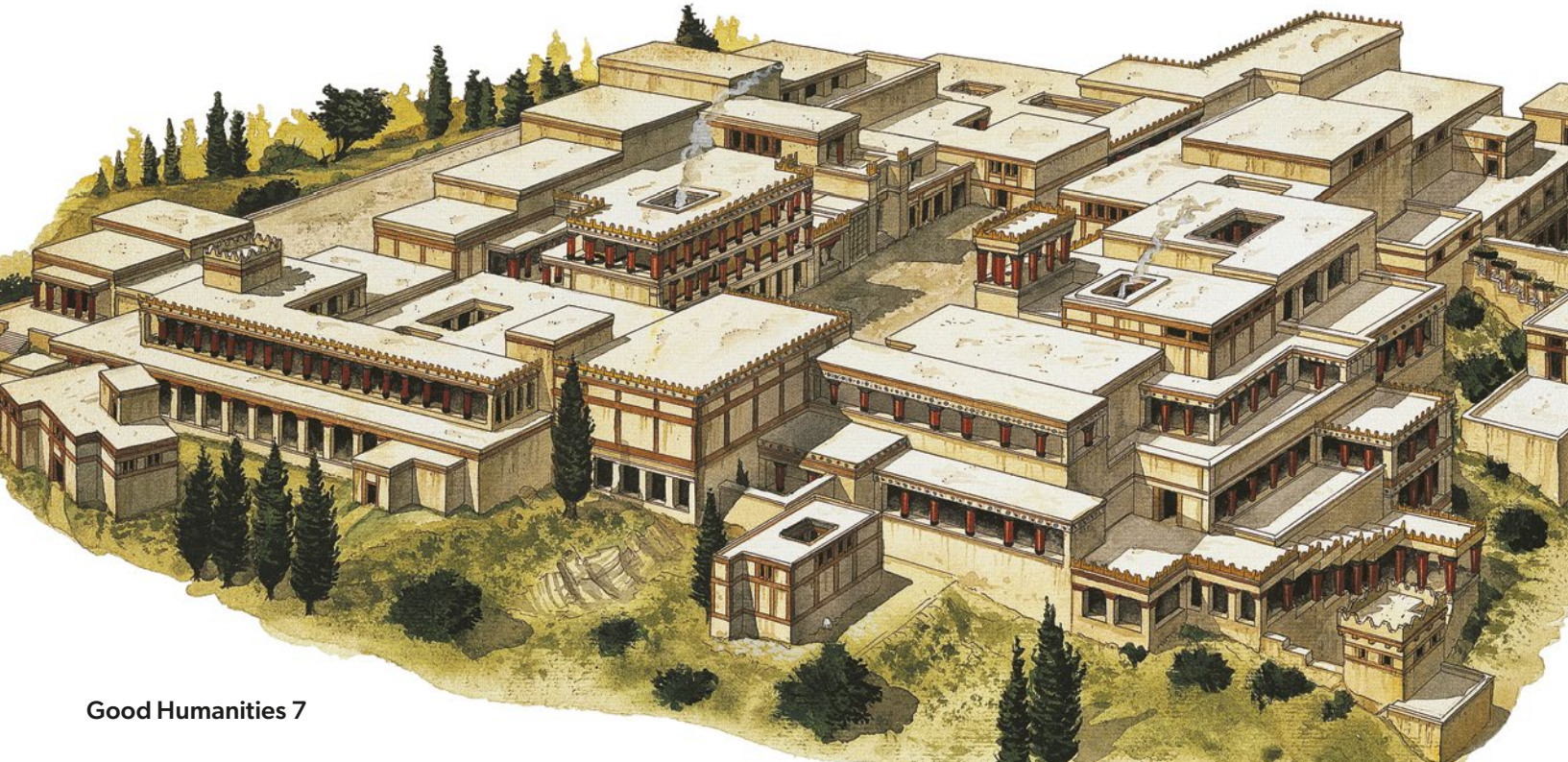
Before ancient Greece

The Minoan people

In the early Bronze Age, before the civilisation of ancient Greece developed, the Minoan people lived on the island of Crete. By around 3000 BCE, the Minoans were growing

Source 1: This photo of the Temple of Apollo in Delphi shows Greece's mountainous landscape.

Source 2: The Minoan king, King Minos, lived in a palace in Knossos, the capital city of ancient Crete. The palace had 1400 rooms. The beautiful frescoes on its walls have helped historians learn about the Minoans.



A modern-day map of Greece showing the countries and seas surrounding the country

Source: Matilda Education Australia

▲ **Source 3:** Some of the settlements of ancient Greece

crops and herding cattle. By 2500 BCE, the Minoans were building towns, and making tools, weapons and ornaments from bronze. They also developed a written language, which historians call 'Linear A'. This disappeared suddenly in about 1450 BCE and has not been decoded.

Historians have learnt a great deal about the Minoans from the excavation of the Minoan king's palace in Knossos (see Source 2). Large frescoes (paintings) on the palace walls provide evidence that the Minoans used ships to trade by sea. Historians have also gained a good idea of what life was life for the Minoan people by studying the detailed artworks the Minoans painted onto pottery.

The Minoan civilisation was discovered in 1900 CE by the archaeologist Arthur Evans, when he excavated areas of Crete. Much of Evans' work involved restoring the huge Knossos palace that had been rebuilt in about 1700 BCE, possibly after it was destroyed by a tsunami triggered by a volcanic eruption on Thera (modern-day Santorini). The palace survived until about 1350 BCE when it was destroyed by fire, perhaps as part of a Mycenaean invasion.

Source 4: This fresco is from King Minos' palace in Knossos. It shows a gymnast grabbing a charging bull by the horns and tumbling onto the bull's back before landing at its rear. [*Bull-leaping fresco* (c. 1400 BCE), stucco, 104.5 × 78.2 cm, Heraklion Archaeological Museum, Crete, Greece] ▼

The Mycenaeans

By about 1400 BCE, Mycenaean invaders from the Greek mainland had invaded Crete and ended the Minoan civilisation. Unlike Minoan cities, the Mycenaean settlements were surrounded with high perimeter walls. There are still remains of the ancient walls and gates such as the Lion Gate, which was the main entrance to Mycenae.

Scenes of hunting and warfare were depicted on Mycenaean artworks, in contrast to the peaceful themes in Minoan art. As a strong military society, the Mycenaean civilisation became powerful and grew between about 1400 BCE and 1200 BCE.

Like the Minoans, the Mycenaeans took advantage of their closeness to the Mediterranean Sea by becoming great seafarers and sea traders. They took over Minoan trading routes and expanded them. The Mycenaean palaces imported metals, ivory and glass, and exported objects made from these materials. They also exported locally produced products such as olive oil, perfume, wool and wine.

The Mycenaean language is believed to be the most ancient form of Greek. Their written language, known as 'Linear B', has been translated, allowing historians to learn more about Mycenaean culture.

The Mycenaean civilisation was at its peak around 1200 BCE, then it suddenly collapsed. Historians do not know why, but it may have been due to an invasion, an uprising by the people, or a natural disaster such as a volcano, earthquake or drought.

Source 5: Mycenaean pottery from 1300 BCE, with images of chariot warriors. [*Crater portraying chariot warriors* (c. 1300 BCE), clay]

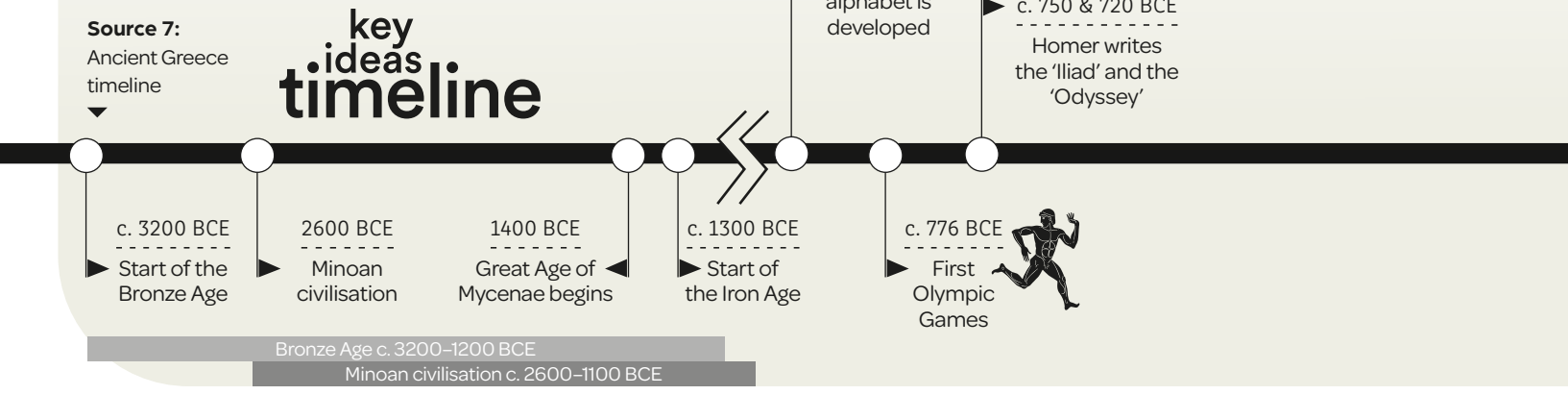
Troy

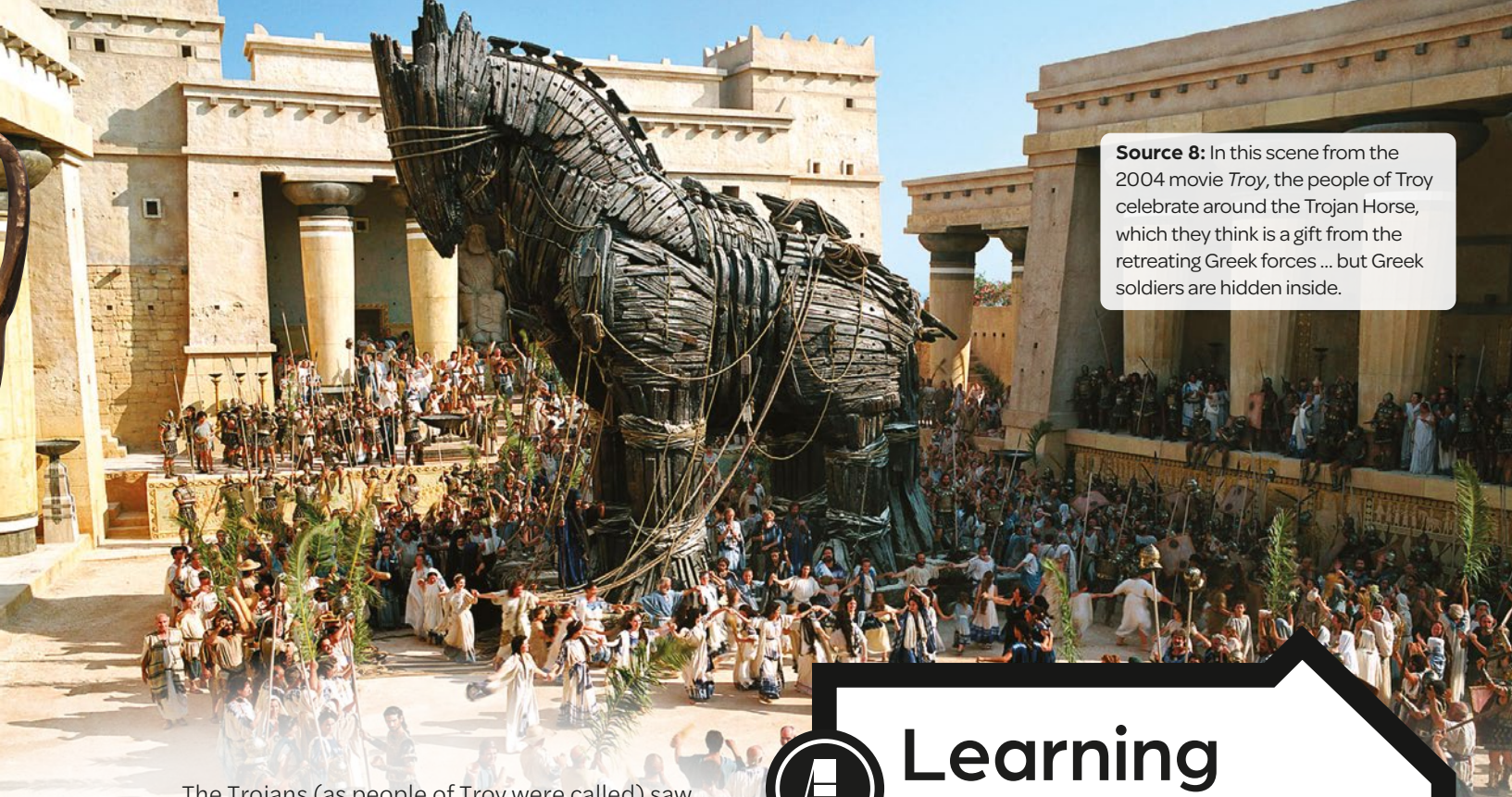
Homer was a Greek author who wrote the famous, epic poem, the 'Iliad'. This poem tells the story of how a Greek force led by Mycenaeans captured and destroyed the city of Troy.

The war began because Prince Paris of Troy abducted Helen of Sparta, who was the wife of Menelaus, the king of Sparta. Menelaus asked his brother, Mycenaean king Agamemnon, to get Helen back. Agamemnon put together a great Greek navy and led a 10-year siege of Troy, which included great battles outside Troy's city walls.

Source 6: Lion Gate was the main entrance to Mycenae. It was built around 1250 BCE and named after the sculpture of two lions above the entrance. It is the only surviving piece of Mycenaean sculpture. [*Lion Gate* (c.1250 BCE), stone, Mycenae, Greece.]

Source 7: Ancient Greece timeline



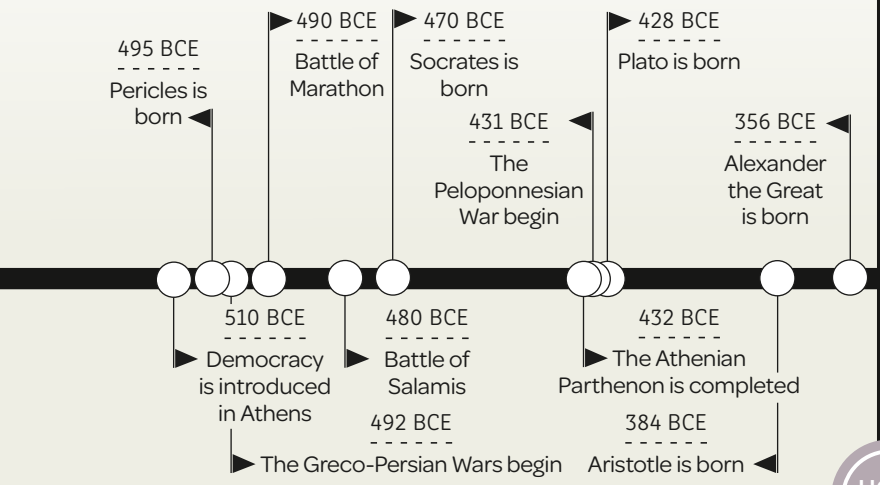


Source 8: In this scene from the 2004 movie *Troy*, the people of Troy celebrate around the Trojan Horse, which they think is a gift from the retreating Greek forces ... but Greek soldiers are hidden inside.

The Trojans (as people of Troy were called) saw the Greeks retreating and thought they had left the horse as a gift. The Trojans dragged the horse inside the city walls and Odysseus and his men sneaked out at night and opened the city gates, allowing the returning Greek soldiers to capture Troy.

In 1870 CE, an amateur German archaeologist, Heinrich Schliemann, used information in Homer's 'Iliad' and other ancient writings to locate what he thought was the site of ancient Troy, at Hisarlik in modern-day Turkey.

Excavations at Hisarlik have uncovered sections of a defensive wall and gates thought to be the site of ancient Troy. Several monuments including the temple of Athena, a concert hall and a meeting place (a *bouleuterion*) have been uncovered. The site is classified and protected as a World Heritage Site.



Greek Classical Age c. 480–323 BCE

Learning ladder H5.1

Background and origins

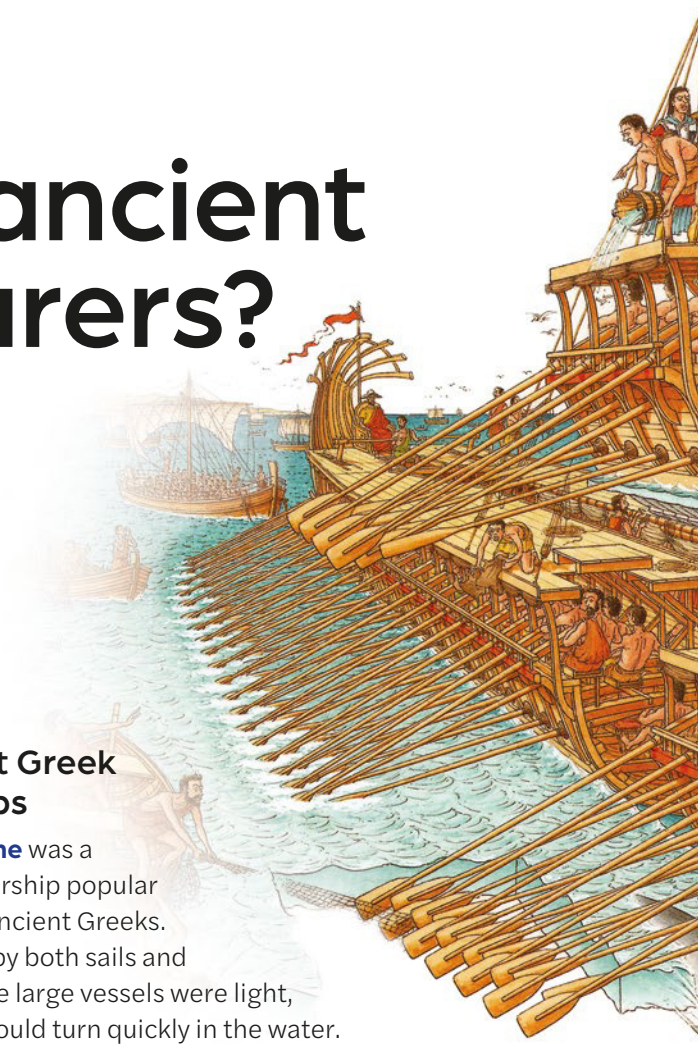
1. Source 1: What key geographical features are found in Delphi's location?
2. How did Greece's mountainous landscape lead to the development of separate city–states?
3. Describe how the Minoans and the Mycenaens took advantage of their close proximity to the Mediterranean Sea.
4. Sources 2 and 4: What can we learn about Minoan civilisation by looking at the ruins of the palace at Knossos?

Chronology

1. Use the timeline to answer these questions.
   - **a** How many years before the Great Age of Mycenae did the Minoan civilisation begin?
   - **b** Which civilisation lasted longer: the Minoan or the Mycenaean?
2. Create your own timeline of the Minoan and Mycenaean civilisations using the dates and information on these pages.
3. The timeline shows two different scales: from 356 to 800 BCE and from 1300 to 3200 BCE. Estimate how much 1 centimetre represents in years for each scale.
4. The Minoan civilisation lasted for around 1500 years. Why do you think we still do not know much about this civilisation?

HOW TO
Chronology, page 188

Why were the ancient Greeks seafarers?



Due to Greece's geography, many ancient Greeks lived close to, and relied on, the sea. Much of the communication and trade between ancient Greek city–states and other civilisations was done by sea.

Greece's geography

Greece consists of a long mountainous peninsula extending into the Mediterranean Sea, and hundreds of small islands dotted around the Aegean Sea and the Mediterranean Sea. This geography meant that many ancient Greeks lived close to the sea.

Skilled seafarers

As many ancient Greeks lived near the water, it is not surprising that they were skilled fishermen, sailors and shipbuilders. The ancient Greeks used boats for pleasure, transport, communication, trading and warfare and developed different types of vessels for these different purposes.

Before a sea voyage, ancient Greek sailors prayed for a safe journey to Poseidon, the god of the sea, who wielded an enormous trident.

By sailing to other civilisations around the Mediterranean Sea, the ancient Greeks acquired new ideas and skills in navigation and shipbuilding. For example, from the ancient Egyptians, they learnt about astronomy and mathematics and different methods to build ships, and from the ancient Syrians, they learnt metalworking techniques.

Navigation

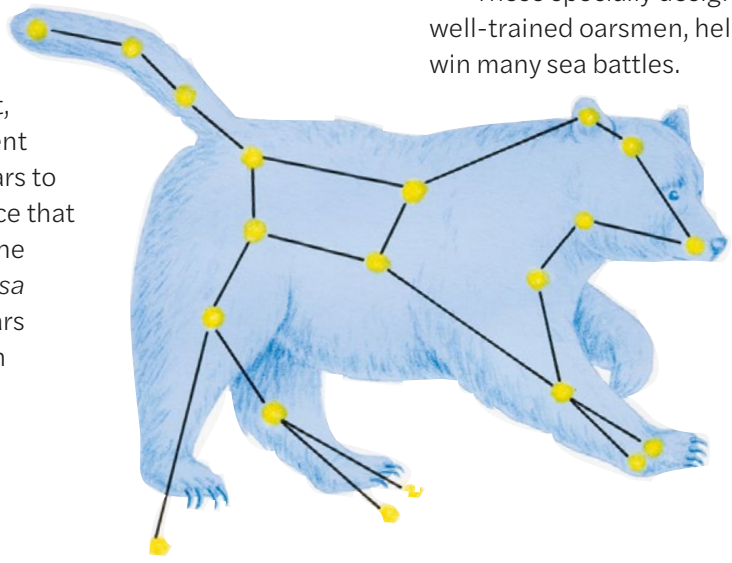
On longer sea voyages, when no land was in sight, and sailing at night, ancient Greek sailors used the stars to navigate. There is evidence that by the 3rd century BCE, the Greeks were using the *Ursa Minor* constellation of stars (Source 1) in the northern sky to find their way.

Ancient Greek warships

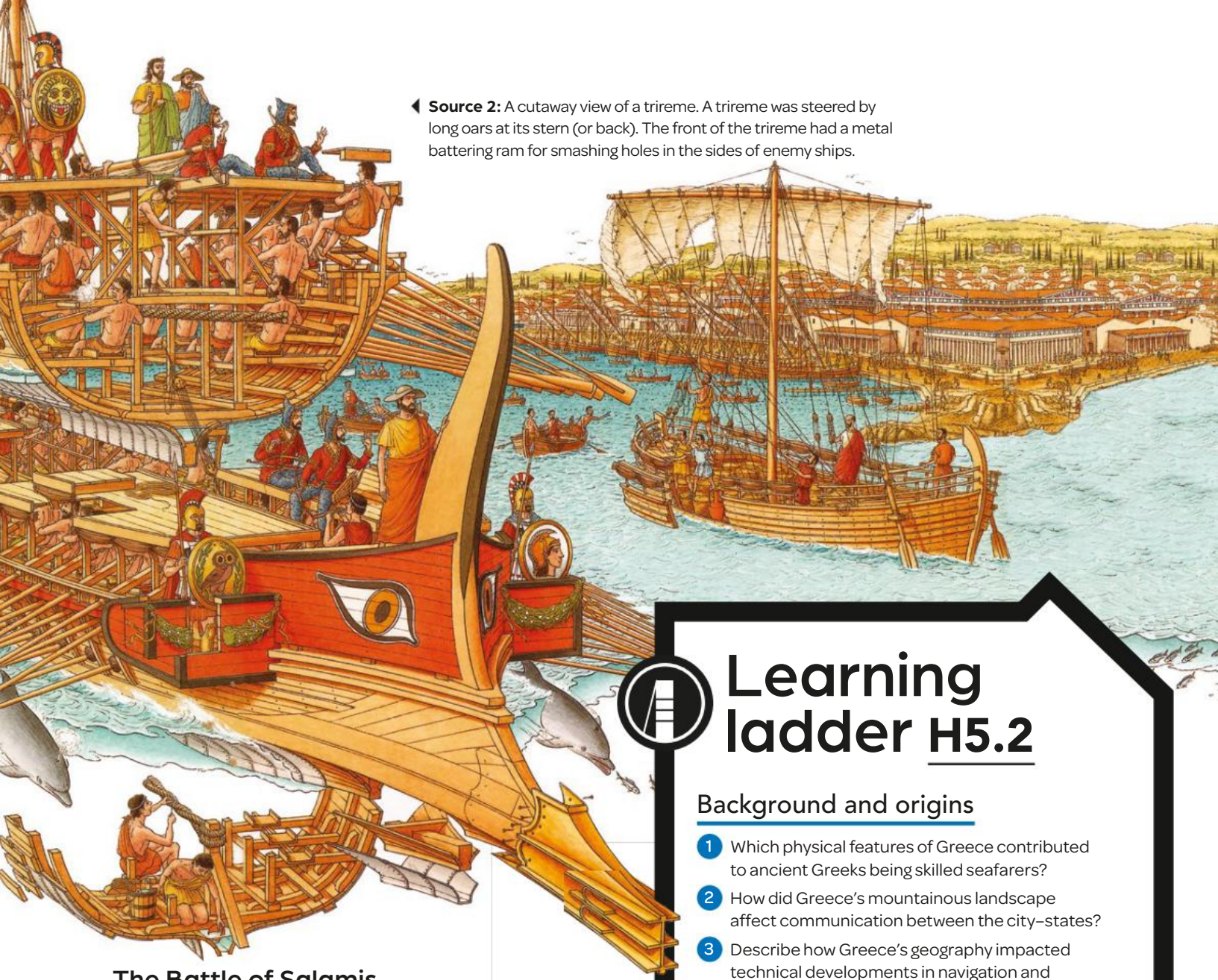
The **trireme** was a type of warship popular with the ancient Greeks. Powered by both sails and oars, these large vessels were light, fast and could turn quickly in the water. A trireme was about 35 metres long and had 170 oarsmen sitting in three tiers along each side of the ship (Source 2). The large number of oarsmen gave the trireme unprecedented power and speed.

Each trireme had a bronze-clad prow at the front of the ship that was used like a battering ram. In a battle, the captain would order the trireme to be steered straight at an enemy ship so the prow could pierce the side of the opponent's vessel. The damaged ship either sank or had to be beached. Sometimes, the soldiers who fought on the triremes jumped onto a damaged ship to capture it.

These specially designed warships, with their many well-trained oarsmen, helped city–states such as Athens win many sea battles.



Source 1: Ancient Greeks used the *Ursa Minor* (Latin for 'lesser bear') constellation to help them navigate.



Source 2: A cutaway view of a trireme. A trireme was steered by long oars at its stern (or back). The front of the trireme had a metal battering ram for smashing holes in the sides of enemy ships.

The Battle of Salamis

The greatest sea battle in Greek history was the Battle of Salamis in 480 BCE. It was fought between the Greeks and the invading Persians during the Greco-Persian Wars. The battle took place in the strait between the island of Salamis and the port of Piraeus. The battle was a great Greek victory as a small Greek fleet defeated a much larger Persian naval force.

The Greek historian Herodotus recorded advice that Artemisia (the female ruler of the city–state of Halicarnassus) gave to Xerxes, the Persian king: 'Spare thy ships, and do not risk a battle; for these people are as much superior to your people in seamanship ...'

Xerxes ignored Artemisia's advice and allowed a massive fleet of 500 Persian ships to be lured by the Greeks into a narrow strait. The Greeks used their agile, fast triremes to ram the huge, clumsy Persian ships, sinking and damaging about 300 vessels, while only losing about 40 of their own ships.

Learning ladder H5.2

Background and origins

1. Which physical features of Greece contributed to ancient Greeks being skilled seafarers?
2. How did Greece's mountainous landscape affect communication between the city–states?
3. Describe how Greece's geography impacted technical developments in navigation and shipbuilding.
4. Source 3 (H5.1): Locate Sparta and Athens. How might the two city–states have developed differently due to their geography?

Causes and consequences

1. Which of these was a cause of the ancient Greeks being skilled seafarers: good timber, Persian traders, olive farming, mountainous geography, military threats, being surrounded by sea.
2. What caused the Greeks to win the Battle of Salamis?
3. Source 1: Explain how effects on transportation and warfare came from new developments in navigation.
4. Source 2: Explain why the trireme had such a positive impact on Greece's ability to win battles at sea.
5. Analyse the Battle of Salamis. What were the causes and effects of the smaller Greek fleet's victory over the much larger Persian fleet?

HOW TO Causes and consequences, page 196

What did the ancient Greeks believe?

The ancient Greeks saw the past as a time ruled by the gods, who had created the world and set it in motion. They also believed that the mythological stories of their gods explained the great mysteries of life and the universe.

The ancient Greek creation myth

The ancient Greeks believed that in the beginning there was only Chaos. Chaos created Nyx out of nothing and she became the goddess of darkness. Nyx was often depicted as a winged goddess riding in a chariot. Nyx was the mother of Aether (Light) and Hemera (Day). She was also the mother of dark spirits, including Hypnos (Sleep), Thanatos (Death) and Moros (Doom).

Aether and Hemera had several children, including Gaia (Earth) and Eros (Love). Gaia gave birth to Uranus (Sky) and, later, to many other children, including Cronos. Zeus was one of Cronos's sons, and after defeating his father in battle, he became king of the gods. Zeus then instructed one of his own sons, Prometheus, to create humans and another of his sons, Epimetheus, to create the animals. Prometheus made humans from clay.

Beliefs about the world

The ancient Greeks often used myths to explain the world. According to ancient Greek mythology, Earth was a flat disk that floated on the ocean. The Sun was thought to be the god Helios travelling across the sky in a golden chariot. Cracks in Earth's surface were believed to lead to Hades, the underworld. Hades was thought to be a dark and murky place, where people went after they died.

Source 1: Statue of Prometheus at the Rockefeller Center, New York, 1934 CE. The text behind the statue is from a play by Greek playwright Aeschylus: 'Prometheus, teacher in every art, brought the fire that hath proved to mortals a means to mighty ends.'

Source 2: This medieval tapestry depicts the Three Fates. [Artist unknown (c. 1510 CE), made in Brussels]

The Three Fates

There are many fascinating and exciting stories from Greek mythology. These stories helped to explain the big questions of life, such as why some people had a more difficult life than others and why some people died young.

One of the more famous stories is that of the Three Fates. The Three Fates were the daughters of Nyx. Their names were Clotho, Lachesis and Atropos. They spun a golden thread and, in doing so, controlled the fates of both humans and gods. None could question their judgements. The youngest sister, Clotho, held the thread of life for each person when they were born. Lachesis, the second sister, chose a person's life path and controlled how long they lived. The last sister, Atropos, cut the thread of life and determined how a person died.

Prometheus and the gift of fire

Another famous story is that of Prometheus. The king of the gods, Zeus, took very little interest in the lives of humans, but Prometheus, their creator, wanted to help them. Prometheus climbed Mount Olympus and stole fire from the gods. He gave the fire to humans so they could keep warm, cook food and make tools. Zeus became very angry when he discovered what Prometheus had done. He took Prometheus to a high mountain and chained him to a rock. Every day a giant eagle came to eat Prometheus's liver. His liver would then grow back during the night, only to be eaten again the next day in an ongoing cycle. Finally, after 30 years, Zeus's son Hercules rescued Prometheus and set him free.

Learning ladder H5.3

Background and origins

1. Identify the role of each of the following gods:
   a Nyx **b** Zeus.
2. Describe how the world was created, according to the ancient Greeks.
3. Explain how the story of the Three Fates makes sense of the differences in people's lives.
4. Explain why the ancient Greeks used myths to make sense of the shape of the world and the rising Sun.

Sources

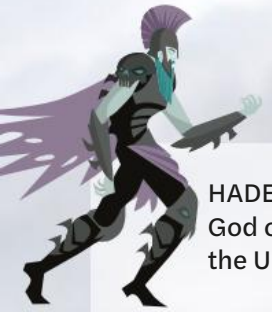
1. Source 2: Identify the goddesses shown in this source.
2. Source 1: Using your knowledge, describe the punishment Prometheus endured for stealing fire from the gods.
3. Sources 1 and 2: Explain how the dates of these sources demonstrate the ongoing significance of Greek mythology.
4. Source 1: Using this source and your knowledge, explain why Prometheus was a significant god in Greek mythology.
5. Source 1: Evaluate the usefulness of this source for a historian studying ancient Greek mythology.

HOW TO
Sources, page 191

Who were the gods worshipped by the ancient Greeks?

The ancient Greeks believed that many gods and goddesses controlled everything in their lives and their environment. To honour and please the gods, the ancient Greeks prayed daily at shrines in their homes and at the many public temples.

Source 1: Mount Olympus is the highest mountain in Greece. Ancient Greeks believed it was the home of the gods and goddesses because the summit was usually hidden by clouds.



HADES
God of death and the Underworld

Hades was Zeus and Poseidon's elder brother. Hades rarely left the Underworld, where he ruled over the dead with his wife, Persephone.

ZEUS
King of the gods and god of the sky and weather

Zeus was the sender of thunder, lightning, rain and winds. His weapon was a thunderbolt, which he hurled at those who displeased him.

HERA
Goddess of marriage

Hera was the sister-wife of Zeus and the queen of the gods. She was the goddess of women, marriage and families.

POSEIDON
God of the sea

Poseidon was Zeus's bad-tempered brother and god of the sea, earthquakes and horses. His weapon was a trident that could shake the Earth.

HERMES
Messenger of the gods

Hermes was one of Zeus's sons. He was the fastest god and had winged sandals and hat. Hermes was the messenger of the gods and was responsible for guiding the dead to the Underworld.

ATHENA
Goddess of wisdom and warfare

Athena was one of Zeus's daughters and the goddess of wisdom and war. She protected soldiers during battle.

Source 2: Many modern-day superheroes have links to the gods and goddesses of ancient Greece. For example, Wonder Woman is supposed to be the daughter of Zeus. Aquaman is depicted as heir to the throne of Atlantis, the mythical underwater ancient Greek city.

Honouring the gods

The ancient Greeks thought it was important to please the gods, as happy gods helped you and unhappy gods punished you. To please the gods, the ancient Greeks built temples in their honour. Each temple was dedicated to a specific god or goddess.

Temples were usually built in an important area of the city called the ***acropolis***. Every acropolis in Greece is situated in the highest point in the city. Temples were elaborately decorated, inside and out. A statue of the god or goddess for whom the temple was built was placed inside the building. Temples were cared for by priests who had the power to talk to the gods and goddesses.

Practising religion

Every morning, ancient Greek families would pray at their household shrine and leave offerings such as food and wine to the gods and goddesses.

People also visited temples to pray and to make offerings such as incense, flowers and food. Those who could afford it would pay for an animal to be sacrificed at the temple.

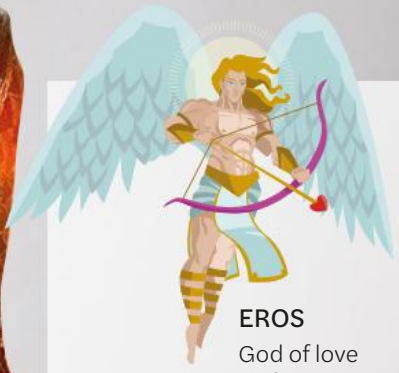
The temples people visited depended on what they were praying for. For example, those wanting help in their love life would attend a temple dedicated to Aphrodite, the goddess of love.

PERSEPHONE
Queen of the Underworld

ARES
God of war

ARTEMIS
Goddess of the hunt

APHRODITE
Goddess of love and beauty
Aphrodite was the goddess of love and beauty. She had a girdle that had the power to cause people to fall in love with the wearer.



EROS
God of love and attraction

APOLLO
God of the Sun

DIONYSUS
God of wine

The gods and death customs

The ancient Greeks believed that death was the beginning of a long journey to the Underworld, which was ruled by the god Hades. The souls of the dead were led to the Underworld by the messenger god, Hermes.

The mythical river Styx separated the Underworld from the living world. Charon the ferryman rowed the dead souls across the river Styx to the Underworld. The fare was paid with a coin that had been placed in the mouth of the dead person.

Source 3: This statue of Zeus was located at the Temple of Zeus in Olympia, Greece, the site of the ancient Olympic Games. It was one of the Seven Wonders of the Ancient World. Almost 12 metres tall, the figure was completed around 430 BCE. Made from ivory and gold, the figure of Zeus was seated on a cedarwood throne encrusted with ebony, gold, ivory and precious stones. It was built to impress visitors to Olympia during the games.

Source 4: This Temple of Poseidon was built on Cape Sounio, next to the Aegean Sea, between 444 and 440 BCE.

Source 5: This illustration shows ancient Greeks going to a temple to pray and make offerings to the temple's god or goddess.

Learning ladder H5.4

Significant people, ideas and events

1 **a** Name the gods and goddesses in Zeus's family mentioned in Source 2.

   b Source 2: Which modern-day superheroes have links to the gods and goddesses worshipped by the ancient Greeks?

2 Source 3: Describe the statue of Zeus.

3 Source 5: Explain how the ancient Greeks practised their religion.

4 Explain why the ancient Greeks worshipped Poseidon.

Perspectives

1 Source 1: Identify the place where the ancient Greeks believed the gods lived.

2 Describe the ancient Greek perspective on death.

3 Explain the ancient Greek perspective on the relationship between humans and the gods.

4 Explain why the ancient Greeks believed it was important to place a coin in the mouth of a person who had died.

HOW TO Perspectives, page 200

What were ancient Greek cities like?

The ancient Greeks lived in independent city-states. The city-states were often at war with one another, but sometimes they banded together to fight invaders.

The city-states of ancient Greece

The ancient Greeks lived in hundreds of separate city-states (or ***poleis***). Each city-state was an independent, self-governing urban centre that had its own laws and governing body. The two most powerful poleis were Athens and Sparta.

Each polis had an ***agora***, which was the centre of city life (Source 2). People met at the agora to do business, listen to philosophers and be entertained. Markets and slave auctions were held at the agora. Above the agora was the acropolis, where important temples were built.

Merchants paid a fee for their space in the marketplace in the agora. Merchants traded olive oil, grain, pottery, textiles and weapons in the ancient Greek city-states. Due to the poor quality of Greek soils, ancient Greece was highly dependent on agricultural trade.

Ancient Greek houses were built along narrow streets. Each home was constructed around a central courtyard. The walls were often made from mudbricks. Houses had small windows to keep out the hot sunlight.

Ancient Greece

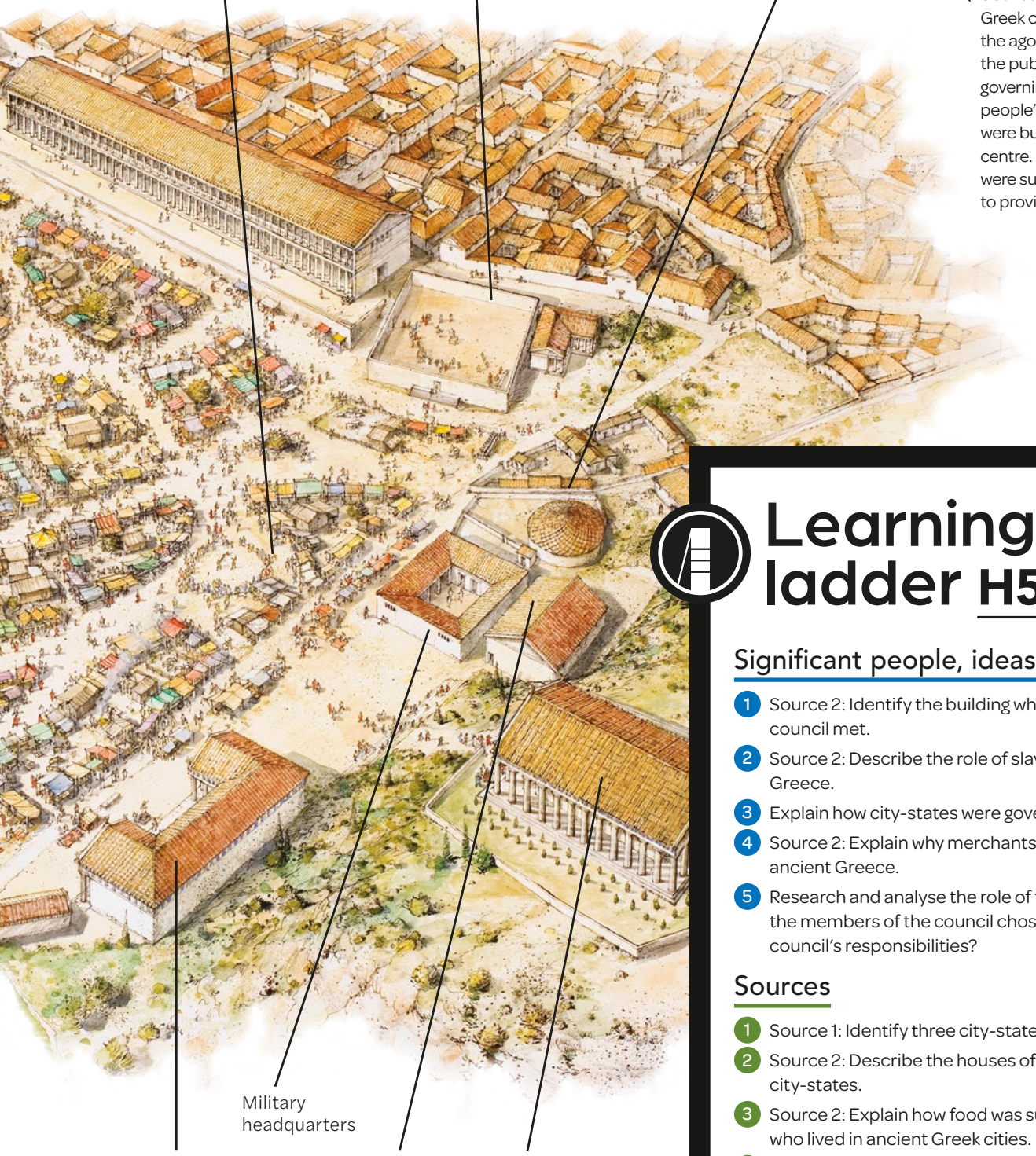
Source: Matilda Education Australia

Source 1: Some of the hundreds of city-states in ancient Greece

People gathered in the agora to listen to philosophers and political speeches, attend public meetings and watch plays.

Slaves were bought and sold in the slave market at the agora. Slaves laboured in mines and on farms, or did household chores. It is estimated that slaves made up about 30 per cent of the population of ancient Athens.

The headquarters of the executive committee of the Senate was called the *tholos*.



Source 2: A typical ancient Greek city-state, showing the agora, the acropolis, the public buildings where governing councils met, and people's homes. Houses were built around the city centre. Residential areas were surrounded by farmland to provide the polis with food.

Military headquarters

The *stoa* (a covered walkway) contained shops and offices, and provided a shaded place to meet.

In Athens, the citizens' council (called the *boule*) met at the *bouleuterion*.

Important public buildings such as temples were built on raised ground called the acropolis.

Learning ladder H5.5

Significant people, ideas and events

1. Source 2: Identify the building where the citizens' council met.
2. Source 2: Describe the role of slaves in ancient Greece.
3. Explain how city-states were governed.
4. Source 2: Explain why merchants were important in ancient Greece.
5. Research and analyse the role of the *boule*. How were the members of the council chosen? What were the council's responsibilities?

Sources

1. Source 1: Identify three city-states in ancient Greece.
2. Source 2: Describe the houses of ancient Greek city-states.
3. Source 2: Explain how food was supplied to people who lived in ancient Greek cities.
4. Source 2: Using this source, write a paragraph explaining why the agora was an important part of ancient Greek cities.

HOW TO

Sources, page 191

How was Athenian society organised?

Ancient Athenians developed the first democracy, where the people made decisions about the running of their city-state. A different form of democracy continues today in countries like Australia.

Governments in ancient Greece

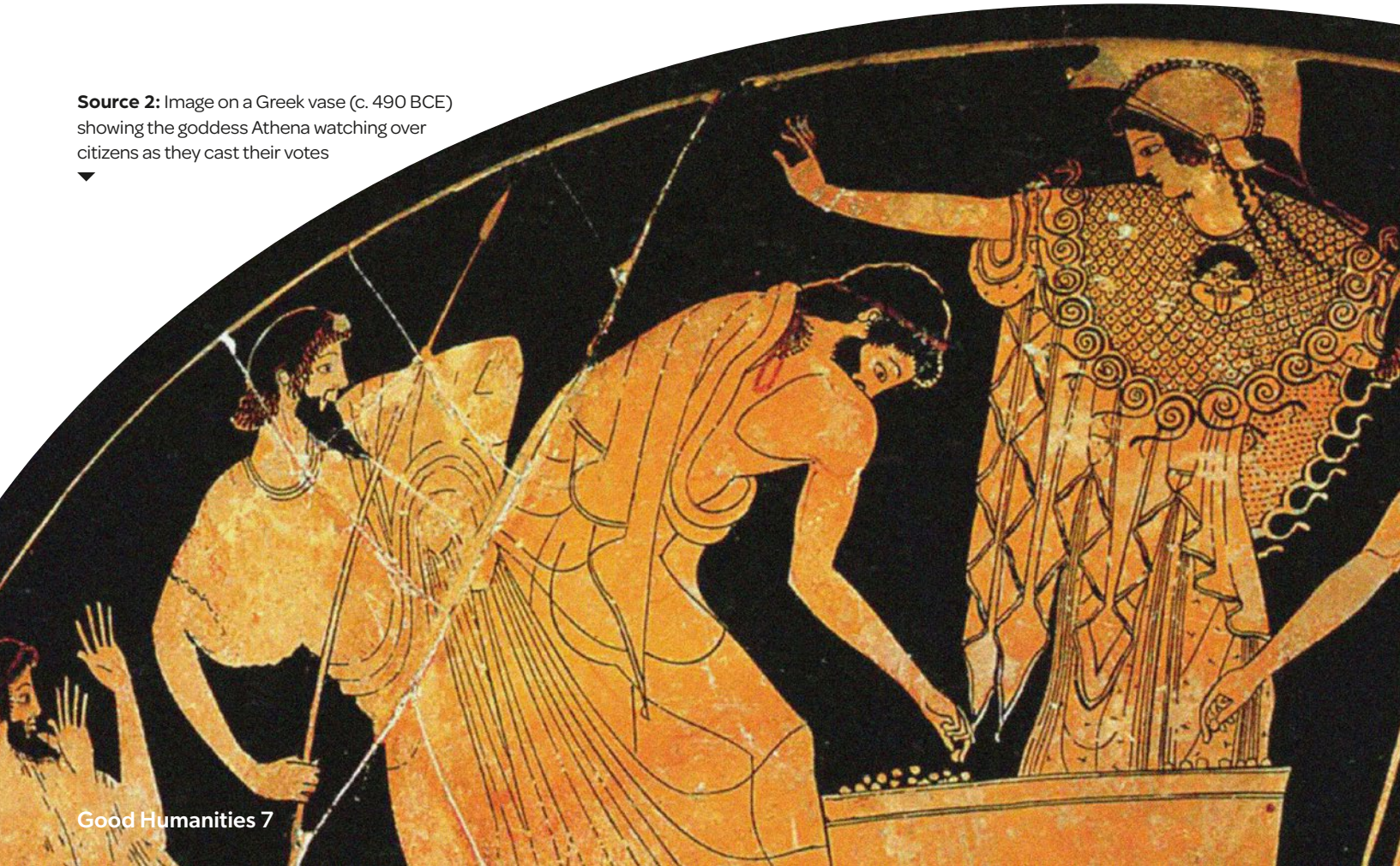
Each city-state in ancient Greece had its own type of government. These included:

- **democracy**: rule by the people (male citizens) who elect officials and leaders
- **monarchy**: rule by a single ruler who inherited the role
- **diarchy**: rule by two rulers who inherited the role
- **oligarchy**: rule by a small group of individuals
- **tyranny**: rule by an individual who seized power illegally.

Living in a democracy

From the 5th century BCE, the system of government in the ancient city-state of Athens was a type of democracy. The word *democracy* comes from two Greek words: *demos* meaning 'people' and *kratos* meaning 'rule'. Athenians, therefore, potentially had a say in the running of their city-state. To have a say, you had to be a **citizen**, and from 451 BCE, people whose parents were citizens were eligible to be citizens themselves.

Source 1: Ostraka were pieces of broken pots that were used as voting tokens by Athenian citizens.



Source 2: Image on a Greek vase (c. 490 BCE) showing the goddess Athena watching over citizens as they cast their votes

Male citizens were allowed to cast a vote either for or against new laws. Citizens would come together to vote. This assembly of citizens (an ***ecclesia***) was responsible for deciding new laws and making other important decisions, such as declaring war.

A typical meeting of the Athenian ecclesia could include 6000 citizens. Votes were taken by a show of hands, or by counting stones or pieces of broken pottery called ***ostraka*** (Source 1). The best speakers had the most influence at the ecclesia, while the wealthy controlled decisions behind the scenes in private political meetings.

Athenian social structure

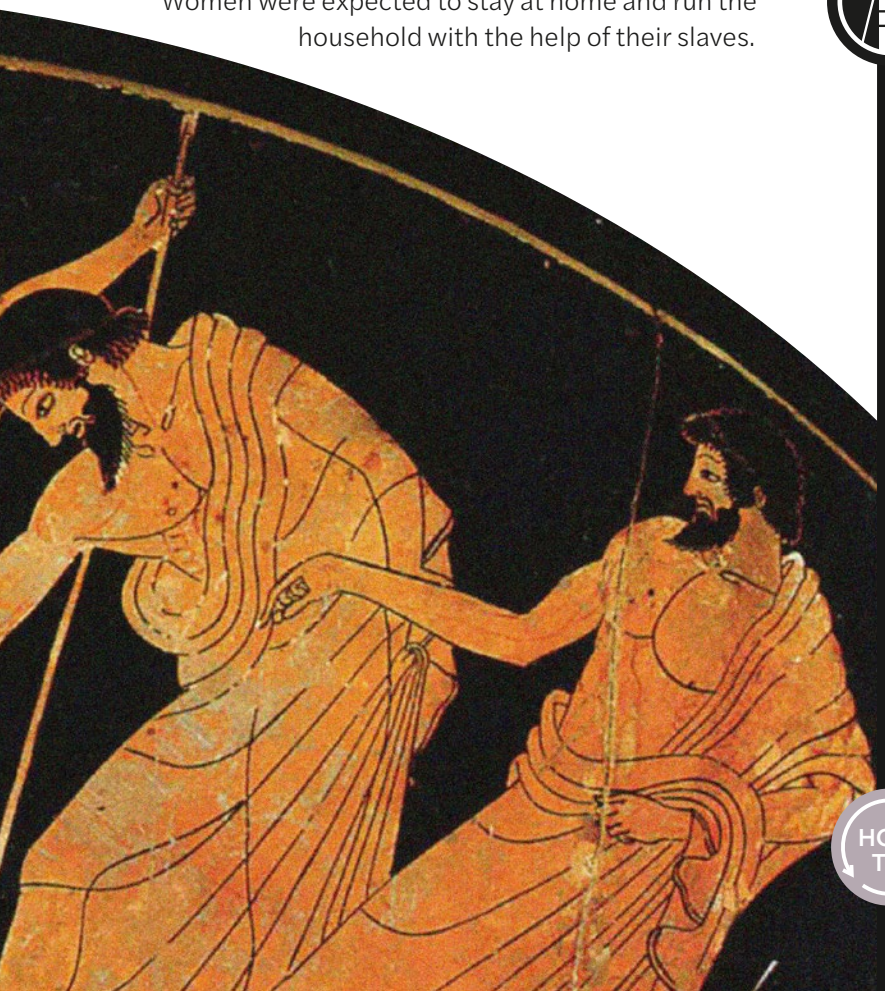
Ancient Athenian society was composed of four main social classes: male citizens, women, *metics* and slaves.

Male citizens

Male citizens were those whose father and mother were Athenian citizens. They were allowed to own property, serve on juries and, after completing two years of military training, were also allowed to vote.

Women

Women whose parents were both citizens were also considered citizens, but they were not allowed to vote, could not serve on juries and could not own property. Women were expected to stay at home and run the household with the help of their slaves.



Metics

There were two types of metics in ancient Athens:

- men and women who were freed slaves
- citizens of other Greek city-states who chose to live in Athens.

Metics were allowed to take part in religious ceremonies, and male metics could serve as *hoplites* (foot soldiers) in the army. They were not allowed to own property or serve on juries in the courts. Every year, they had to pay a special tax called a poll tax (12 drachmas for men and 6 drachmas for women).

Slaves

Slaves were the property of their masters. Some slaves worked in households or shops, while others worked for the government. Some of the household slaves were educated and served as tutors to Athenian children. The government slaves had the worst jobs. They usually worked underground in silver mines in harsh conditions with high death rates.

Learning ladder H5.6

Significant people, ideas and events

1. Source 1: Identify the object shown in this source.
2. Describe the form of government in ancient Athens.
3. Explain how male citizens voted in the ecclesia.
4. Explain the differences between citizens and metics.
5. How democratic was ancient Greek democracy? Explain your judgement.

Continuity and change

1. Source 2: Identify the activity shown in the source that still occurs in modern Australia.
2. Describe which people could become citizens of ancient Athens.
3. Source 1: Explain how this source demonstrates continuity and change between ancient Athens and modern Australia.
4. Explain how the concept of democracy demonstrates continuity and change between ancient Athens and modern Australia.

HOW TO Continuity and change, page 193

Key individual

How did Pericles forge the golden age of Athens?

Under the leadership of the Athenian statesman Pericles, the city-state of Athens flourished. It became a thriving centre for the arts, learning and philosophy that had many splendid public buildings.

Who was Pericles?

Pericles (c. 495–429 BCE) grew up in one of Athens' wealthiest families. He benefited from having excellent teachers and grew to appreciate art and philosophy. Pericles became a brilliant general and a clever politician. He quickly rose through the ranks to become the leader of Athens in 461 BCE.

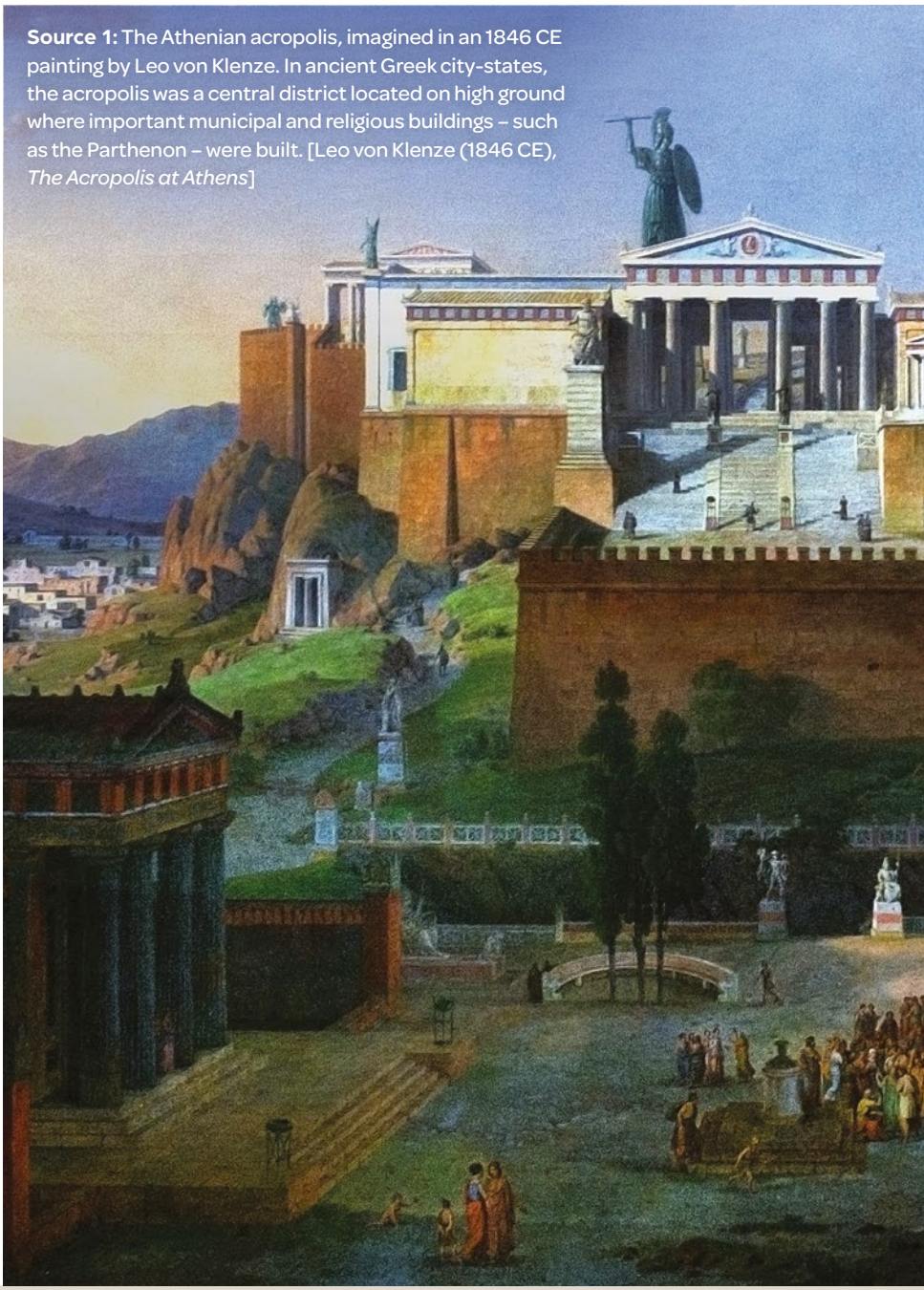
What was the golden age of Athens?

The golden age of Athens was around 449 BCE to 431 BCE, which were the years of peace between the Greco-Persian Wars (499–449 BCE) and the Peloponnesian War (431–404 BCE). At this time, Athens was the largest, wealthiest and most powerful city-state in ancient Greece.

During its golden age, Athens was a centre for the arts, learning and philosophy. The city-state was home to many key politicians, writers and philosophers – such as Socrates, Plato and Aristotle – who gave speeches and discussed their ideas with Athenian citizens in the agora.

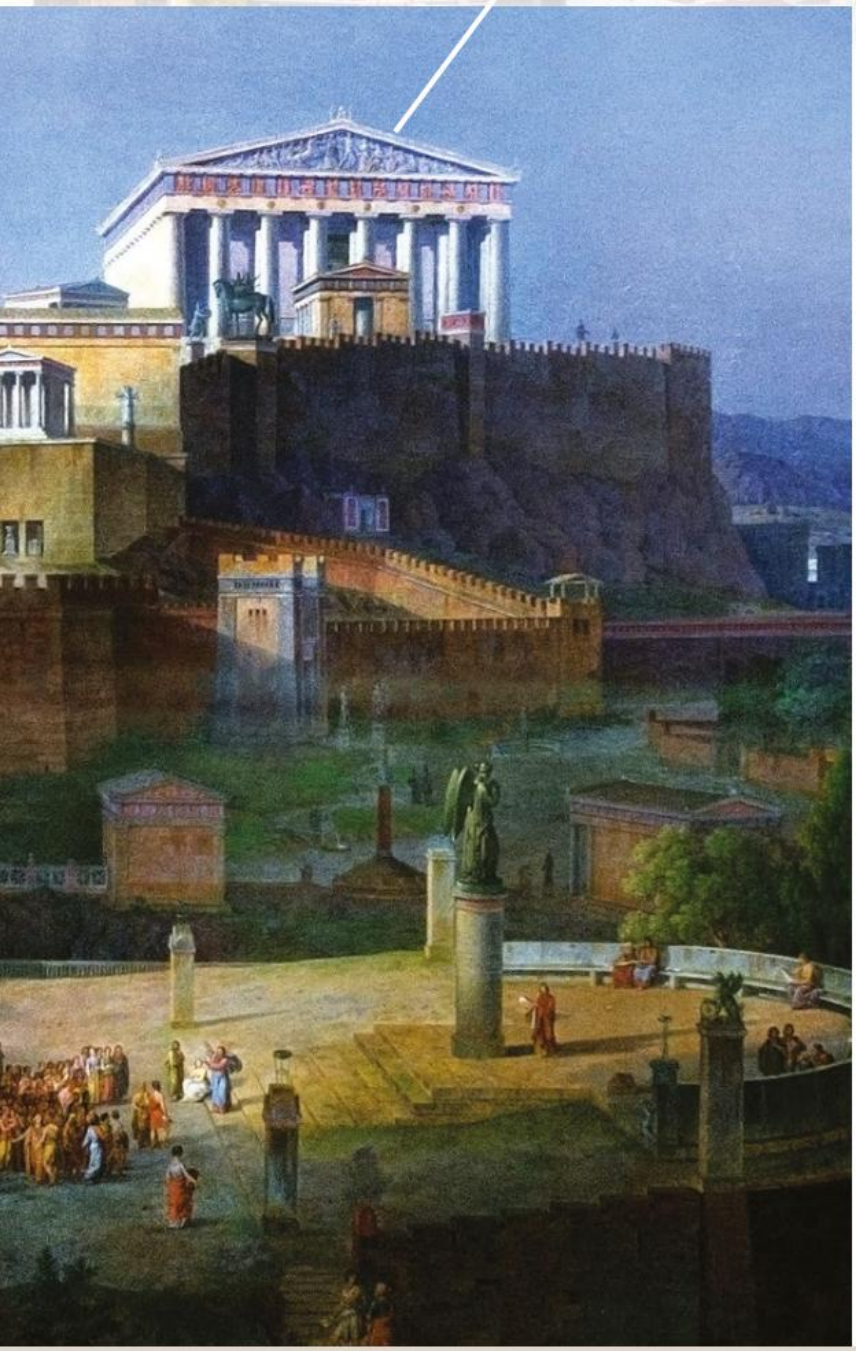
Pericles and the acropolis

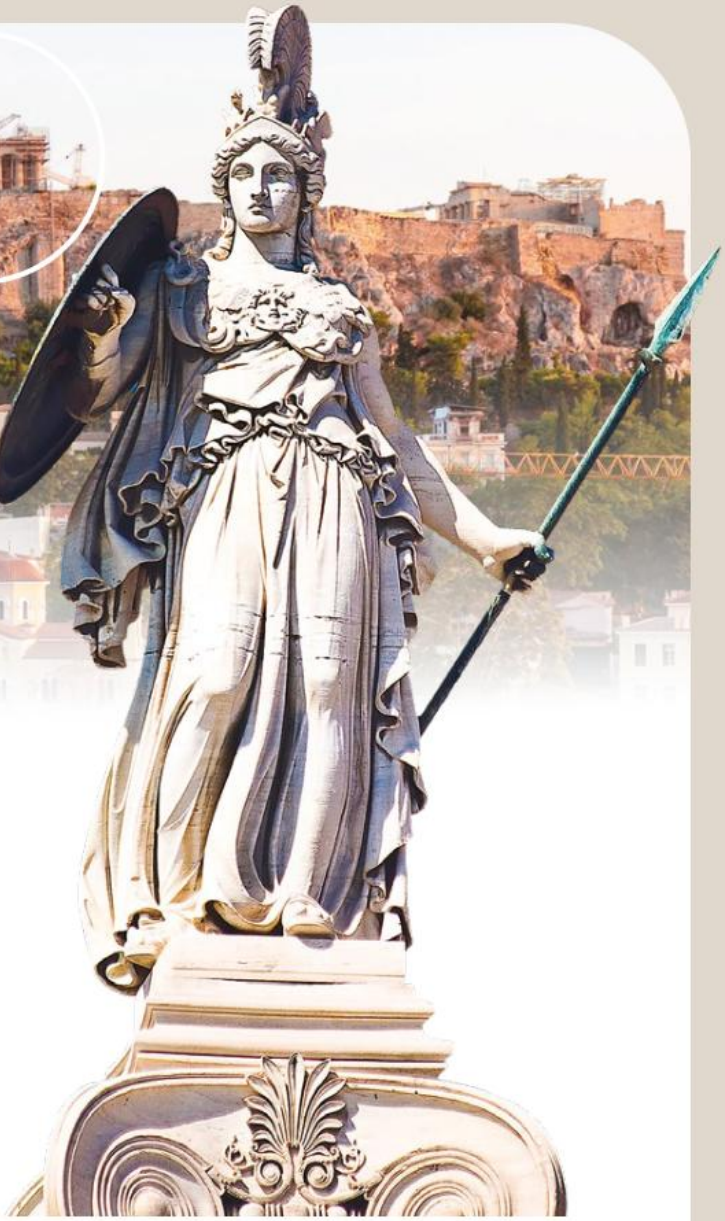
Part of Pericles's plan to improve Athens was to transform the Athenian acropolis. Pericles's ambitious building program involved rebuilding the temples on the acropolis that had been destroyed by the Persians during the Greco-Persian wars.



Source 1: The Athenian acropolis, imagined in an 1846 CE painting by Leo von Klenze. In ancient Greek city-states, the acropolis was a central district located on high ground where important municipal and religious buildings – such as the Parthenon – were built. [Leo von Klenze (1846 CE), *The Acropolis at Athens*]

Source 2: The remains of the Athenian acropolis today





Source 3: This is a statue of Athena, the goddess of wisdom and warfare. Athens, the capital city of Greece, is named after her. [Leonidas Drosis (c. 1870s CE), *Statue of Athena*]

The new temples were made of white marble and decorated with statues carved by Athens' greatest sculptors. This splendid acropolis (Source 1) celebrated Athens' victory in the 50-year war with Persia and projected Athenian power and culture.

The centrepiece of Pericles's vision for the acropolis was the Parthenon. Built between 447 and 432 BCE, the Parthenon is a temple that honours Athena and houses a gold and ivory statue of the goddess. Athena was the city-state's patron and the goddess of wisdom, which was a characteristic celebrated by Athenians. The Parthenon also sent a clear message: its enormous size and sophisticated architecture indicated Athenian knowledge of mathematics and technology. The resources used to build it showed Athens' wealth.

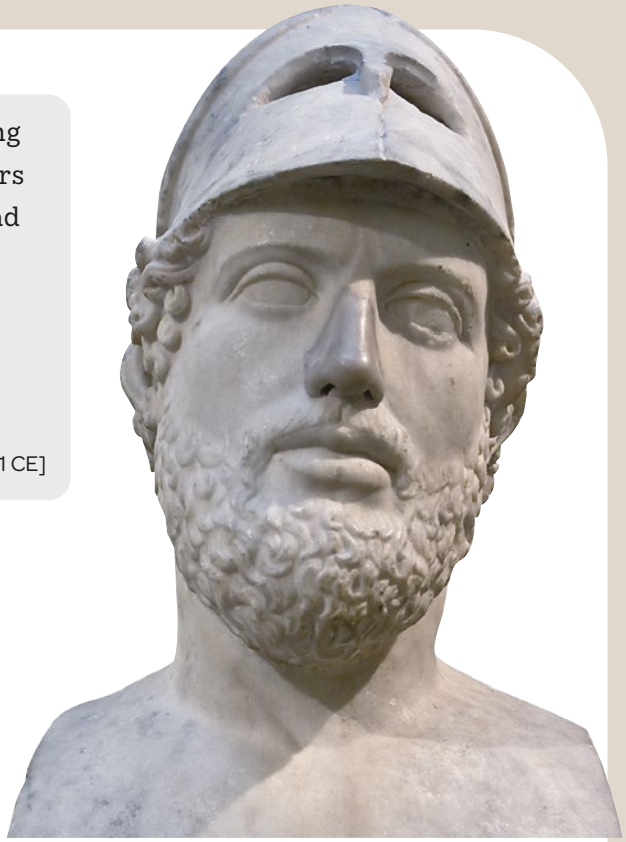
Source 4: Aspasia was a metic and a scholar. As a foreigner, she was able to participate in public life, even though she was a woman. In this image she is shown discussing philosophy with Socrates (seated) while Pericles listens carefully. [Painting by Nicolas-Andre Monsiau (1800 CE), *The Debate of Socrates and Aspasia*]

Pericles and democracy

Ancient Athens is recognised as the birthplace of democracy. Pericles was not the founder of democracy, but he played a major role in involving ordinary citizens in the running of government. Pericles encouraged all Athenians to be educated in philosophy and introduced payment for jury service so that poor citizens could afford to take time off work to be involved in politics. Although democracy was still limited to adult male citizens, Athenian citizenship gave them full participation in all decisions, regardless of wealth or class.

Our constitution does not copy the laws of neighbouring states; we are rather a pattern to others than imitators ourselves. Its administration favours the many instead of the few; this is why it is called a democracy. If we look to the laws, they afford equal justice to all ... nor again does poverty bar the way, if a man is able to serve the state, he is not hindered by the obscurity of his condition.

Source 5: This text was part of Pericles's Funeral Oration (431 BCE). [Recorded in Thucydides's *History of the Peloponnesian War*, translated by Richard Crawley in 1951 CE]



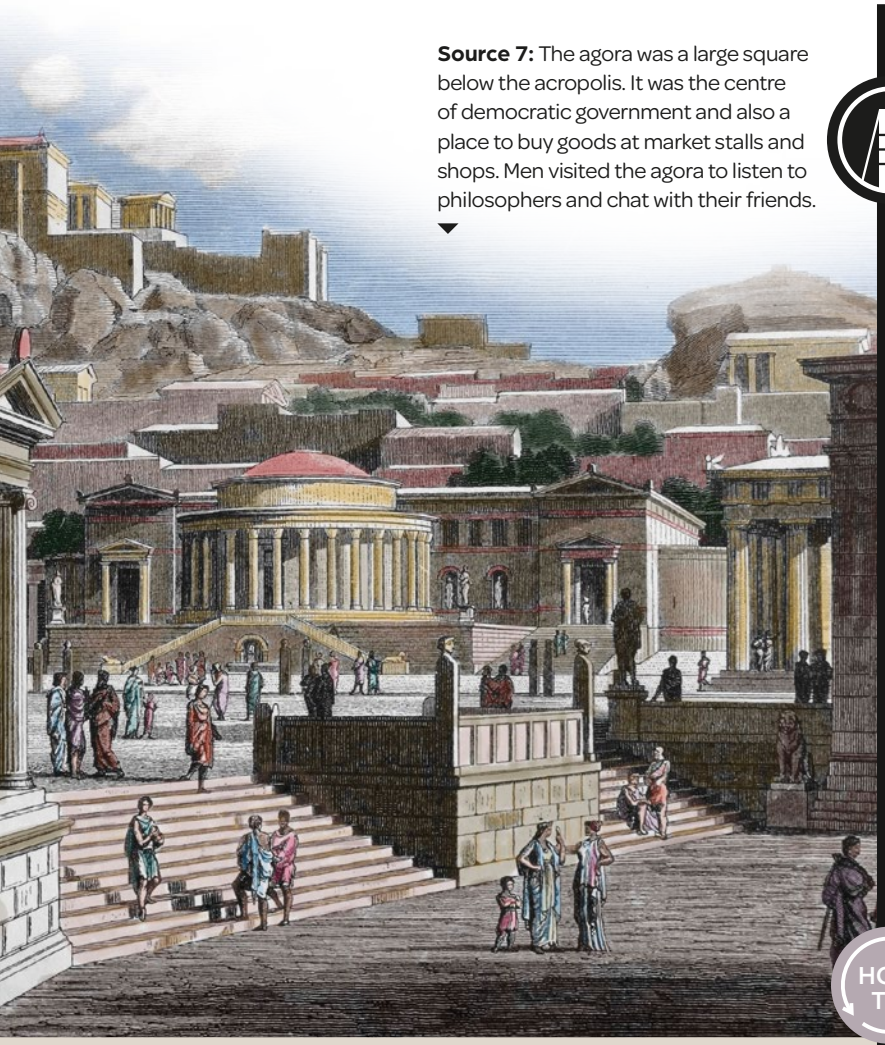
Source 6: This is a Roman copy of a bust of Pericles. The original bust was created in 430 BCE.

Pericles's famous Funeral Oration

In 431 BCE, at the end of the first year of the Peloponnesian War, Athens held a public funeral to honour the soldiers who had died.

As was tradition, a leading citizen was selected to deliver a speech at the funeral. Pericles was chosen. He was a great speaker and he delivered a famous speech called the Funeral Oration (Source 5).

During the Funeral Oration, Pericles spoke passionately about the greatness of Athens and the democratic rights of its citizens. The speech was written down and today it is a key source of information about this period of history.



Source 7: The agora was a large square below the acropolis. It was the centre of democratic government and also a place to buy goods at market stalls and shops. Men visited the agora to listen to philosophers and chat with their friends.

Learning ladder H5.7

Significant people, ideas and events

1. Source 3: Identify the figure in this source.
2. Source 1: Describe the Athenian acropolis.
3. Explain how the Parthenon reflected Athens' greatness.
4. Explain why 449–431 BCE is known as the 'golden age of Athens'.

Significance

1. Source 1: Identify the historically significant area of Athens shown in this source.
2. Identify three reasons why Pericles was a significant leader.
3. Source 4: Explain how Aspasia was able to become significant in ancient Greece.
4. Source 5: Explain why Pericles's Funeral Oration is a significant source for historians of ancient Greece.
5. Analyse how significant Pericles was to ancient Athens.

HOW TO

Significance, page 202

What was life like in Sparta?

Sparta was an ancient city-state located in southern Greece. It was a warrior society where men trained from a young age to be soldiers.

Sparta and Athens

Sparta and Athens were the two leading city-states in ancient Greece. However, these two societies were very different. Athens was a centre of arts and learning. Spartan society was geared to producing soldiers and protecting the state.

Spartan society

Spartan society consisted of several different groups:

- Spartan men, who were citizens
- Spartan women, who were citizens but had fewer rights than men
- ***perioikoi*** (traders and craftsmen), who were not citizens
- ***helots*** (slaves), who undertook manual labour and were not citizens.

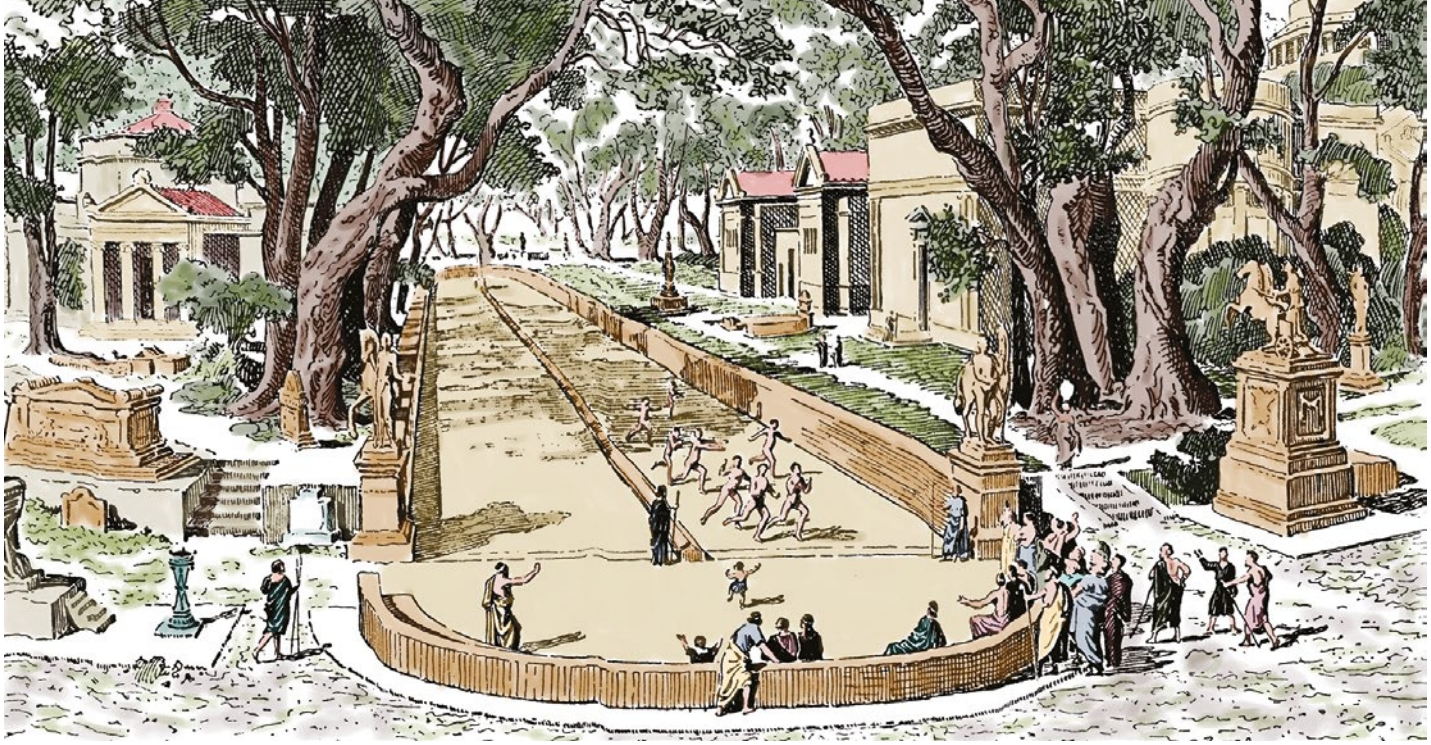
Spartan boys and men

The key role of a Spartan man was to be a warrior: Spartan men were full-time soldiers between the ages of 20 and 60. However, before they joined Sparta's permanent army, they spent years training to be soldiers. Boys left home at the age of seven to begin their military training at the army barracks. Known as the ***agoge***, the training emphasised commitment, discipline and endurance. The Greek writer Plutarch (46–119 CE) wrote about the training of Spartan boys to become brave warriors (Source 1).

> Of reading and writing, they learned only … [the basics]; all the rest of their training was … to make them obey commands well, endure hardships, and conquer in battle. Therefore, as they grew in age, their bodily exercise was increased; their heads were close-clipped, and they were [made to go] … bare-foot, and to playing for the most part without clothes. … [They] received one cloak a year, had hard, dry meat, and knew little of baths and ointments.

Source 1: This text was written by Plutarch, who was a Greek writer who lived in the 1st century CE. [Plutarch, *Lives: Volume VII*, Loeb Classical Library, translated by Bernadotte Perrin in 1919 CE]

Source 2: In battle, Spartan men wore a red cloak, bronze helmet, breastplate and ankle guards. They carried a round bronze shield and a long spear and sword.



Source 3: From the age of seven, Spartan boys trained for military life. The boys slept outside and were given small rations of food. [*Dromos (racecourse) in Ancient Sparta* (1899 CE)]

Life in the barracks was very harsh. The boys were given small rations of food and were beaten to teach them to be courageous. They slept outside and made their own beds from reeds. The agoge training also involved the boys continually exercising, playing war games and learning about Sparta's rules of conduct. Boys and men lived in military camps until the age of 30, when they could marry.

Spartan women

Spartan girls were taught to be courageous and outspoken. They stayed fit by participating in competitions – such as javelin throwing and wrestling – and also sang and danced competitively. They wore plain clothing and did not wear perfume or jewellery.

A Spartan woman's key role was to produce strong, healthy children. The Spartan leaders pressured couples to have boys so they could grow to become warriors and replace those who died in battle. Spartan women did not do any housework. Chores such as cooking, cleaning and sewing were undertaken by *helots*.

Spartan women could not vote or hold public office. However, they could own and manage property. So many Spartan men died in battle that Spartan women came to own one-third of Sparta's land.

Source 4: This small statue shows a Spartan girl running. She is wearing a tunic called a *gymnos*. [*Figurine of a Girl Running* (520–500 BCE), bronze]

Learning ladder H5.8

Significant people, ideas and events

1. Identify the four social groups in Spartan society.
2. Describe the structure of Spartan society.
3. Source 4: Using this source and your knowledge, explain how Spartan girls were trained.
4. Compare the lives of women in Sparta and Athens.
5. Evaluate the advantages and disadvantages of Spartan society.

Sources

1. Source 1: Identify the origin of the source.
2. Source 1: Is this source a primary source or a secondary source? Explain your choice.
3. Source 2: Explain the advantages of this warrior's armour.
4. Source 1: Using this source and your knowledge, explain the lives of Spartan boys.

Sources, page 191

HOW TO

How did ancient Greeks trade with other societies?

The demands of a growing population meant that trade was an important part of the ongoing success of the ancient Greek civilisation. Greek exports also helped spread Greek culture around the ancient world.

Trade with other societies

As the ancient Greeks were accomplished seafarers, they were able to travel across the sea to trade goods with people living in coastal societies around the Mediterranean Sea (Source 1).

The ancient Greeks sold pottery, bronze, silver, gold, olive oil, wine and textiles. In exchange, they bought wheat, papyrus, spices, wood and linen. They also **imported** gems and ivory, which they worked into jewellery and other luxury items.

Ancient Greece's important trading partners included Egypt, Phoenicia (present-day Lebanon and some parts of modern-day Syria and Israel) and Lydia (present-day west Türkiye). After the famous Greek general Alexander the Great conquered the Middle East, ancient Greece's trading links expanded as far as Afghanistan and west India.

From around 400 BCE, the port of Piraeus near Athens was the most important trading centre in the Mediterranean area.

Ancient Greek colonies

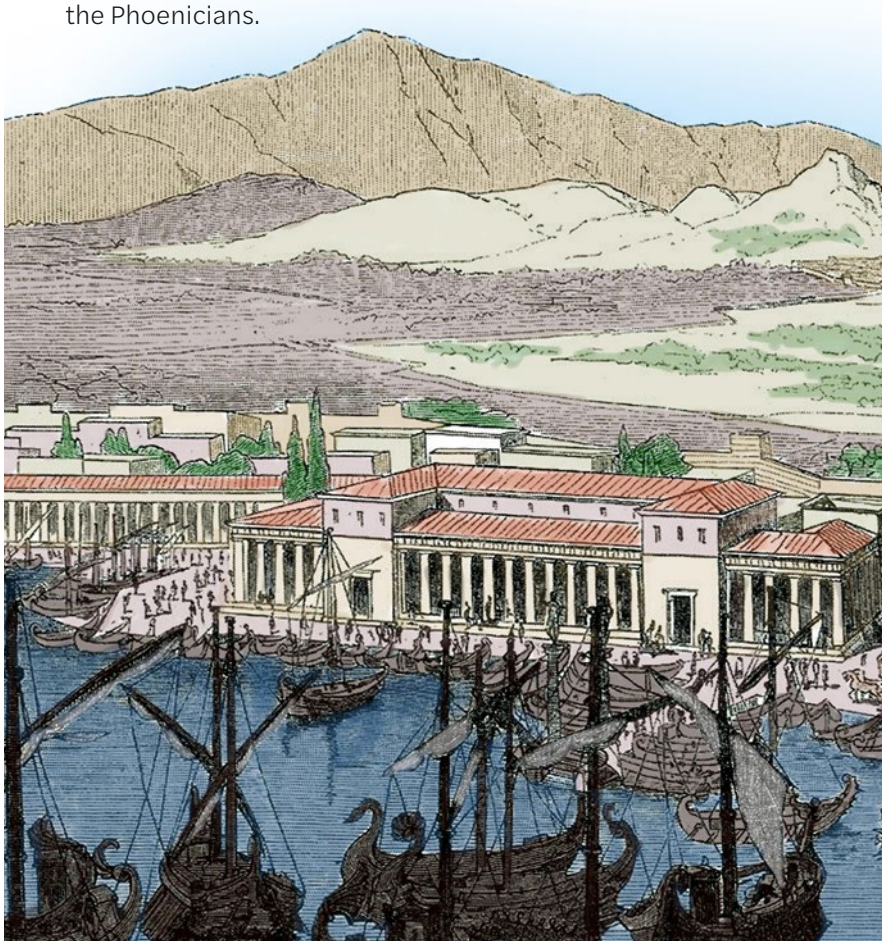
The ancient Greek city-states, hemmed in by mountains and sea, were unable to grow enough food to feed their expanding populations. The city-states raced each other to create colonies in the lands of their trading partners around the Mediterranean Sea and the Black Sea.

The city-state of Megara was one of the first, founding the town of Byzantium (now called Istanbul) in 657 BCE. Other Greek city-states sent their people to north Africa, the coastline of southern Italy, and even as far as Spain and southern France. At this time, Pompeii was a Greek colony, as was Naples, which was originally called Neapolis or 'new city'.

The ancient Athenian philosopher Plato described the Greek settlements along the coastline of the Mediterranean Sea as 'frogs squatting around a pond'. The new settlements were always on the coast, never inland, as if they were tied with an invisible cord to their mother country.

Consequences of trade

An important consequence of trading with people from other societies was the development of the Greek alphabet. The Greeks needed a system of writing so they could keep financial records. Therefore, they adapted the alphabet they had seen when trading with the Phoenicians.

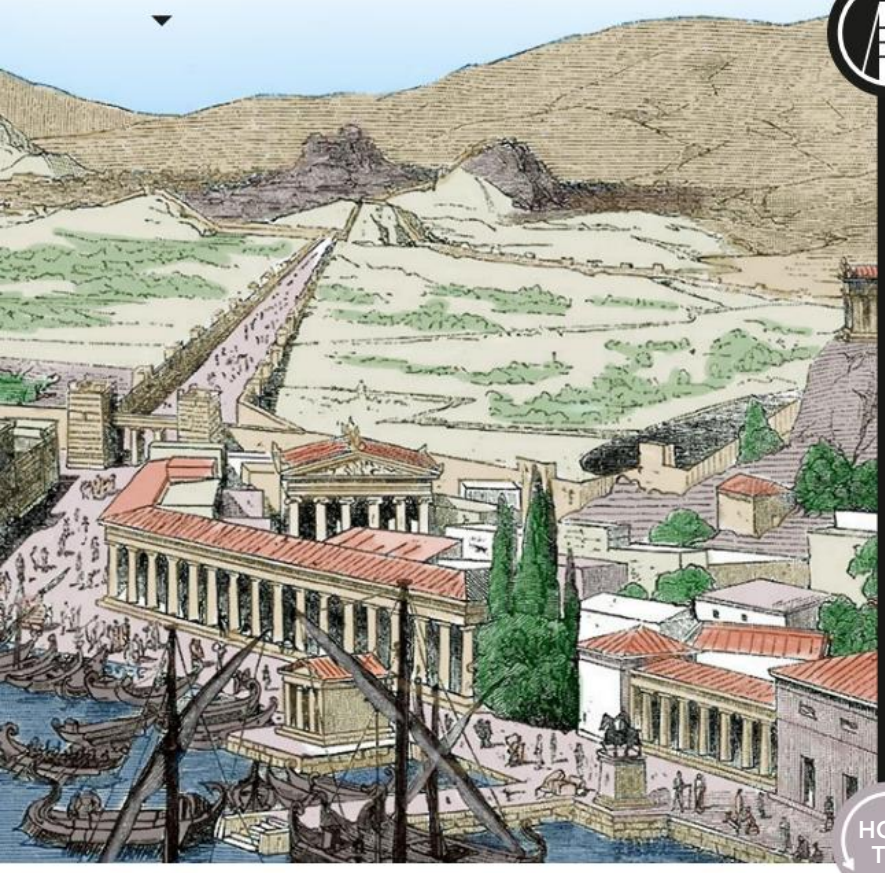


The Mediterranean area before 480 BCE

Source: Matilda Education Australia

Source 1: This map shows ancient Greek settlements around the Mediterranean Sea before 480 BCE. It also shows where objects made in ancient Greece have been found.

Source 2: By around 400 BCE, the port of Piraeus had became the most important trading centre in the Mediterranean area. Goods from all over the world could be found there.



Learning ladder H5.9

Impact and legacies

1. Identify the items exported from ancient Greece.
2. Source 1: Describe the locations where ancient Greek artefacts have been found.
3. Explain how trade led to the establishment of ancient Greek colonies.
4. Source 1: Explain why Plato described the ancient Greek colonies as 'frogs squatting around a pond'.

Causes and consequences

1. Source 2: Identify the cause of Piraeus's development.
2. Describe the cause of food being imported into ancient Greece.
3. Explain how the Greek alphabet developed as a result of trade.
4. Why did ancient Greece become a powerful trading state?

HOW TO

Causes and consequences, page 196

How did the ancient Greeks fight?

The ancient Greek city-states spent a great deal of time fighting one another, particularly during the Peloponnesian War. However, the city-states also sometimes united to ward off foreign enemies, such as the Persians.

Ancient Greek soldiers

Each ancient Greek city-state had its own army. When a war ended, the soldiers returned to their regular jobs. Sparta was the only city-state that had a permanent army with professional soldiers who were always on duty.

Hoplites

The heavily armed ancient Greek foot soldiers were called ***hoplites***. They wore metal helmets, chest plates and leg protectors, and each carried a large shield. Every hoplite was armed with a double-edged sword and a two-metre-long spear that had an iron blade at one end and a spike at the other.

Hoplites used a battle formation called a ***phalanx*** to protect themselves while advancing on enemy troops (Source 1). They stood shoulder to shoulder in rows and overlapped their shields to provide a protective outer barrier to deflect arrows and spears. Those in the front row directed their spears forward to penetrate the enemy and those in the other rows held their spears skyward to deflect incoming missiles.

War with other societies

The Battle of Marathon

The Battle of Marathon took place in 490 BCE on the plain of Marathon, 42 kilometres from Athens. It was a decisive battle in the war between the Greek city-states and Persia (the Greco-Persian Wars: 499–449 BCE).

Source 1: This drawing shows Greek hoplites in a phalanx formation, which is where heavily armed foot soldiers stand close together in a defensive block with their shields overlapping. [*Detail from an Attic Vase* (6th century BCE)]

Source 2: According to legend, Pheidippides died after delivering the news of the Greek victory over the Persians.

The battle was instigated by the Persian king, Darius I, who wanted to punish Athens for supporting a rebellion against the Persian Empire that took place a few years before. Darius sent a large fleet carrying tens of thousands of soldiers to invade Athens.

A much smaller Athenian army marched to Marathon to meet the invading Persians. The Athenians blocked both exits from the plain of Marathon and, after five days, they sprang a surprise attack and defeated the Persian army.

The legend of Pheidippides

The Battle of Marathon is now more famous as the inspiration for the 42-kilometre marathon race, which is an event at the Olympic Games to this day. According to legend, the Athenian messenger Pheidippides ran 42 kilometres from the plain of Marathon to Athens with news of the Persian defeat. After delivering his message, Pheidippides died of exhaustion.

Civil war

The Peloponnesian War

Cooperation among the Greek city-states after the Greco-Persian Wars did not last long and soon they were again fighting one another. During the Peloponnesian War, ancient Greece was divided into two: on one side was Athens and on the other, Sparta. Each city-state led an alliance of city-states and colonies. Nearly every Greek city-state was involved in the Peloponnesian War.

The war began in 431 BCE, when Thebes, an ally of Sparta, attacked Plataea, an ally of Athens. Throughout the war, first Sparta and then Athens went on the offensive.

The Peloponnesian War finally ended when Sparta gained Persian support to force Athens to surrender. The Spartans set up their oligarchy-style government in Athens. This signalled the end of democracy in Athens, at least for a while. The Spartan leader, Lysander, installed an oligarchy known as the Thirty Tyrants to rule over Athens. He also established a number of pro-Spartan governments in ancient Greece, to further cement his own power.

Learning ladder H5.10

Impact and legacies

1. Identify the weapons used by the hoplites.
2. Source 1: Describe the phalanx battle formation.
3. Source 2: Explain how the legend of Pheidippides inspired the marathon event at the Olympic Games.
4. Explain why the Battle of Marathon occurred.

Chronology

1. Identify the year when the Battle of Marathon was fought.
2. Place the following events in chronological order:
   - 431 BCE: Start of the Peloponnesian War
   - 404 BCE: Athens surrenders
   - 414 BCE: Darius II supports the Spartans
   - 421 BCE: Start of the Six Years of Peace
   - 404 BCE: Lysander installs the Thirty Tyrants in Athens
   - 403 BCE: Democracy returns to Athens.
3. Create a timeline using the events in Question 2.
4. Explain how your timeline demonstrates causes and consequences.

HOW TO

Chronology, page 188

Why was the Battle of Thermopylae important?

In 480 BCE, King Xerxes I – the leader of the Persian Empire – set out to conquer Greece with a massive army and navy.

Invasion of the Persians

Although Athens and Sparta often fought each other, they also united to mount a defence against foreign invasions, such as during the Greco-Persian Wars (499–449 BCE).

In 480 BCE, King Xerxes I and his Persian army invaded Greece. Xerxes was the son of Darius I, the Persian king who had been defeated at the Battle of Marathon, and Xerxes wanted revenge. The Persians quickly seized northern Greece and then needed to go through the narrow mountain pass of Thermopylae to reach Athens.

The Greek defence

Led by King Leonidas of Sparta, the allied Greek force of approximately 7000 men marched north to block the Persian army – consisting of around 100 000 soldiers – at the Thermopylae pass.

Initially, the small Greek force managed to block the only road through the Thermopylae pass and imposed heavy casualties on the Persians. However, by the end of the third day, the Greeks were surrounded by the much larger Persian force.

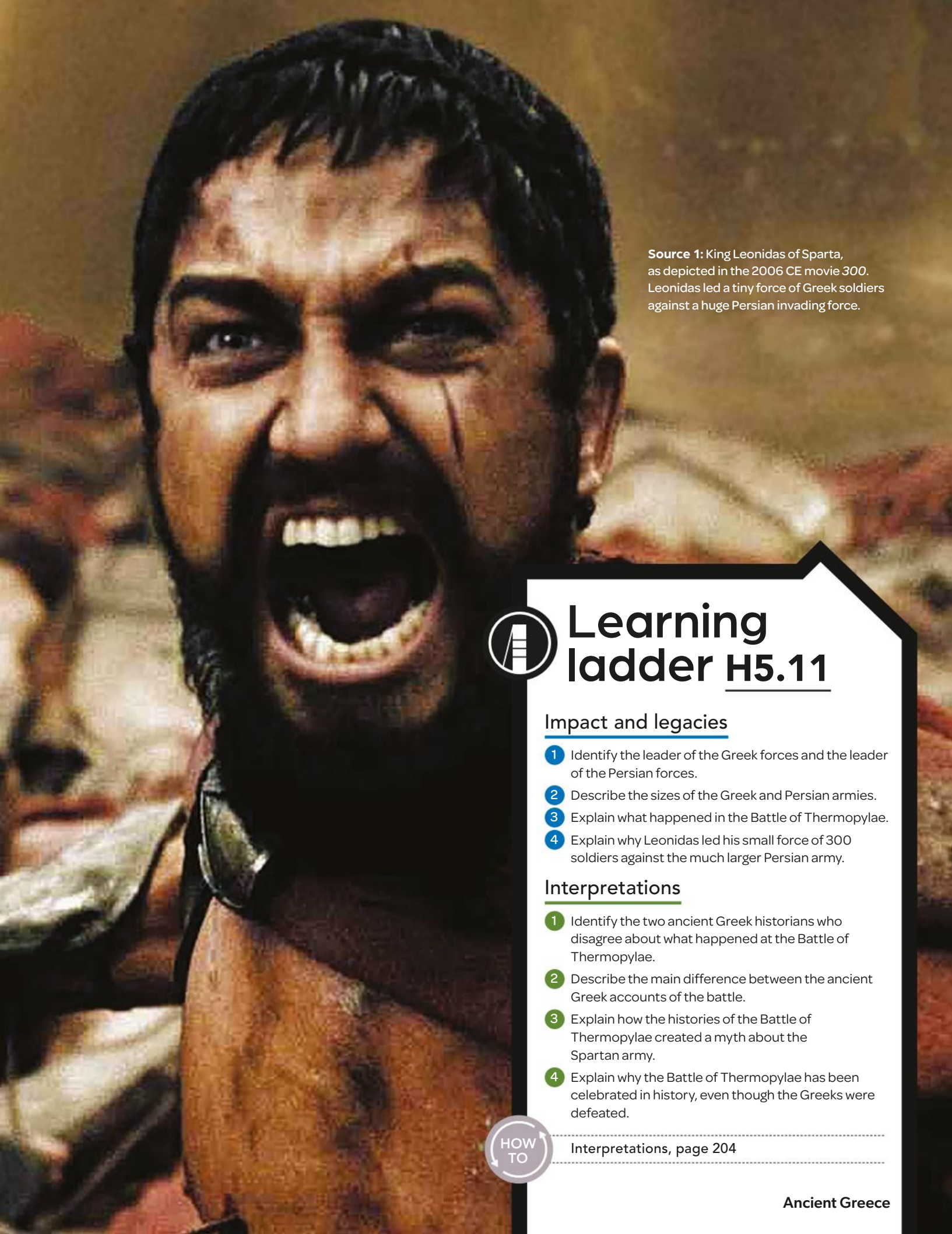
Why did the Greeks lose?

What happened next is unclear. The Greeks could have retreated as there was time to withdraw. However, according to the ancient Greek historian Herodotus, Leonidas bravely sent most of his forces away to spare their lives and remained with a smaller force of 300 men to fight to the death. Herodotus's portrayal of Leonidas presents him as a heroic figure, dying in a courageous last stand.

However, later Greek historians, such as Diodorus, added another incident to the history. They claimed that Leonidas led a valiant attack on the Persian camp the night before the Greeks' last stand. Diodorus stated that Leonidas came close to killing Xerxes and lamented that if he had managed to kill the Persian king, the whole war might have ended differently.

The myth of Thermopylae

The Greek histories of the Battle of Thermopylae also established the idea that Spartans never retreated; they always fought to the death. This was not strictly true; the Spartans knew how to retreat. Nevertheless, the story of Thermopylae has been used to glorify other heroic last stands in history. Although the Greeks were defeated at the Battle of Thermopylae, it marked the beginning of a series of later Greek victories against the Persians.



Source 1: King Leonidas of Sparta, as depicted in the 2006 CE movie *300*. Leonidas led a tiny force of Greek soldiers against a huge Persian invading force.

Learning ladder H5.11

Impact and legacies

1. Identify the leader of the Greek forces and the leader of the Persian forces.
2. Describe the sizes of the Greek and Persian armies.
3. Explain what happened in the Battle of Thermopylae.
4. Explain why Leonidas led his small force of 300 soldiers against the much larger Persian army.

Interpretations

1. Identify the two ancient Greek historians who disagree about what happened at the Battle of Thermopylae.
2. Describe the main difference between the ancient Greek accounts of the battle.
3. Explain how the histories of the Battle of Thermopylae created a myth about the Spartan army.
4. Explain why the Battle of Thermopylae has been celebrated in history, even though the Greeks were defeated.

HOW TO

Interpretations, page 204

H5.12

Key individual

Who was Alexander the Great?

Alexander the Great was a Macedonian king who established the largest empire of the ancient world through a series of rapid conquests across the Middle East and Asia.

Macedonia takes control of Greece

The continual conflict between the Greek city-states left them too weak to fight off advances from the kingdom of Macedonia in the north. By 338 BCE, the Macedonian king, Philip II, had taken control of the weakened Greek city-states and set his eyes on the Persian Empire.

Alexander the Great

Alexander the Great was born in the city of Pella in Macedonia in 356 BCE. He was the son of King Philip II, and from the ages of 13 to 16 he was taught by Aristotle. Alexander became king after his father was assassinated in 336 BCE.

Alexander was a capable but ruthless leader. When the Greek city-state of Thebes staged a revolt against Macedonian rule in 335 BCE, Alexander crushed the rebellion, killed all the men and sold 30 000 women and children into slavery. He then destroyed Thebes by burning it to the ground.

Alexander established the largest **empire** the ancient world had ever seen, and he never lost a battle. Alexander and his loyal army conquered the Persian Empire and Egypt. By 323 BCE, Alexander was head of an enormous empire, established through a military campaign that spanned 11 years and a journey of 34 000 kilometres.

Alexander's love of Greek culture saw him introduce Greek customs, practices and leaders into his conquered lands. The new lands in Alexander's Macedonian Empire soon had Greek temples, as well as public buildings, amphitheatres and houses based on Greek designs. Greek language and Greek coins also became standard across the region, which helped to forge trade networks.

Alexander died in 323 BCE at the age of 32. He had no direct heirs, and his empire was quickly divided by military generals after his death.

Nevertheless, Alexander's empire marked a turning point in the histories of Europe and Asia. It paved the way for the rise of the Roman Empire in the west and for centuries of Byzantine rule in the east.

The Middle East and parts of Asia, c. 334–323 BCE

Source: Peter Hermes Furian

▲ **Source 1:** The empire of the Macedonian king, Alexander the Great

Source 2: This scene from the 2004 CE movie *Alexander the Great* shows Alexander in battle on his horse, Bucephalus. Alexander tamed the enormous stallion when he was just 12 years old and Bucephalus became his battle companion for most of his life.

Learning ladder H5.12

Impact and legacies

1. Source 1: Identify the states that made up Alexander's empire.
2. Describe what had happened by 338 BCE to the ancient Greek city-states.
3. Explain how Alexander became the king of Macedonia.
4. Source 2: Using this source and your knowledge, explain why Alexander was considered a ferocious and capable leader.
5. Was Alexander really 'great'? Explain your reasoning.

Continuity and change

1. Source 1: Identify the cities named after Alexander the Great.
2. Describe how Alexander changed the culture in new areas of his empire.
3. Explain how Alexander changed the course of world history.
4. Is it fair to say that Alexander the Great influenced change but not continuity? Explain your response.

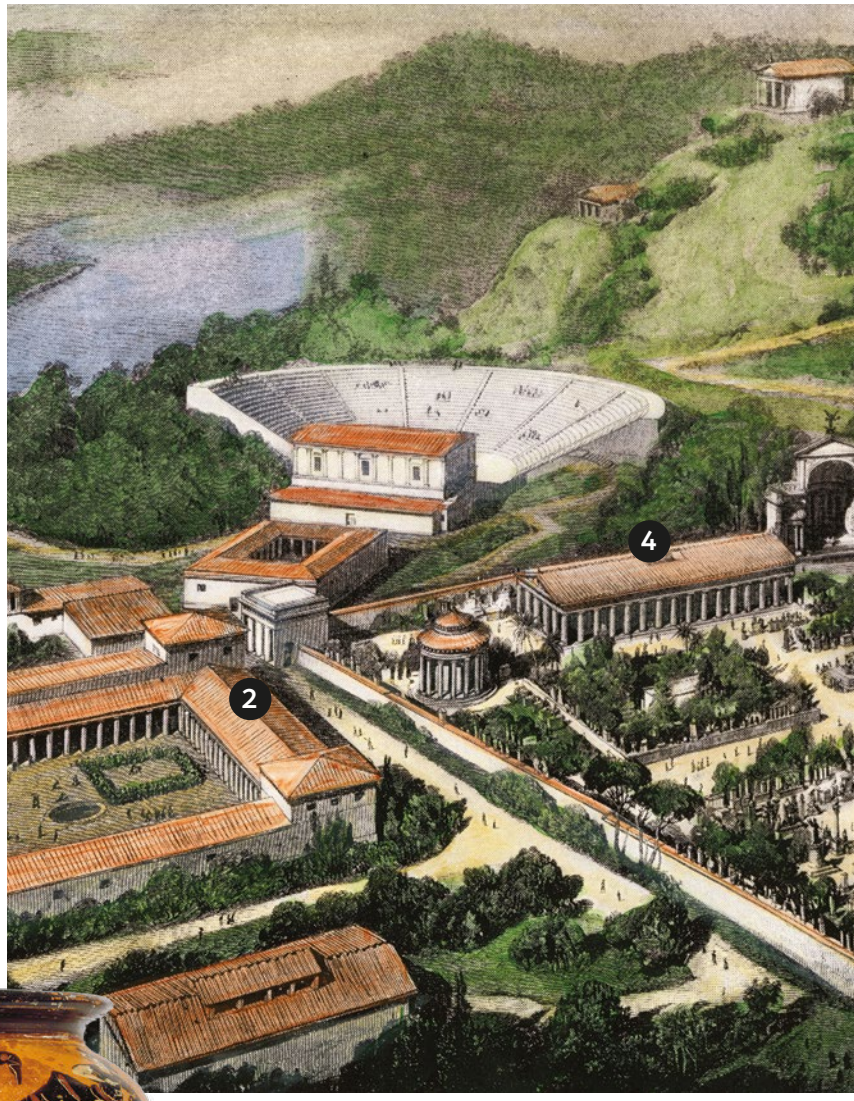
Continuity and change, page 193

HOW TO

Site study

How did the Olympic Games begin?

The ancient Olympic Games were festivals held every four years in honour of Zeus, the king of the gods. Only free-born men were allowed to compete at the games.



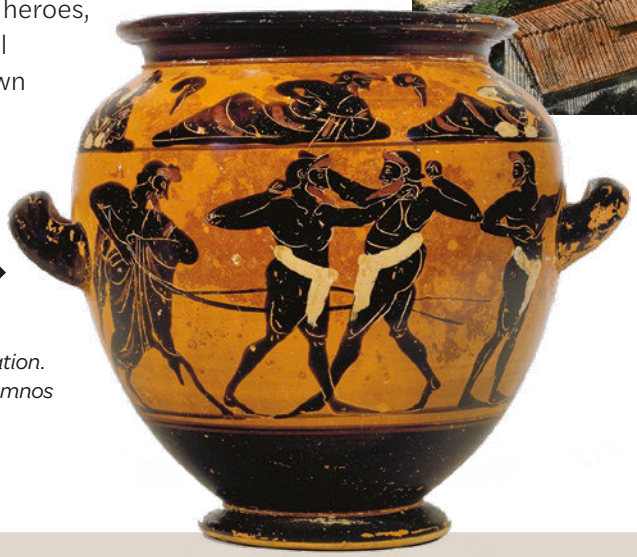
The ancient Olympic Games

The idea for our modern-day Olympic Games came from the ancient Olympic Games. This event was a religious festival held every four years from at least 776 BCE at Olympia (Source 2), in the city-state of Elis. The five-day festival attracted competitors from all the Greek city-states.

Alongside the athletic competitions at Olympia, a separate festival in honour of Hera (the wife of Zeus) was held. At this festival, girls competed in running races. They were also allowed to watch the men's contests at Olympia. Married women were not allowed to attend the Hera festival or the Olympic Games, although they could train horses for events at Olympia.

A truce was declared between warring city-states during each Olympic Games. The city-states were very competitive with each other. Citizens of each city-state hoped that by winning events, they could prove their dominance over other city-states.

The city-states gave many rewards to their athletic heroes, although the only official Olympic prize was a crown of olive leaves.



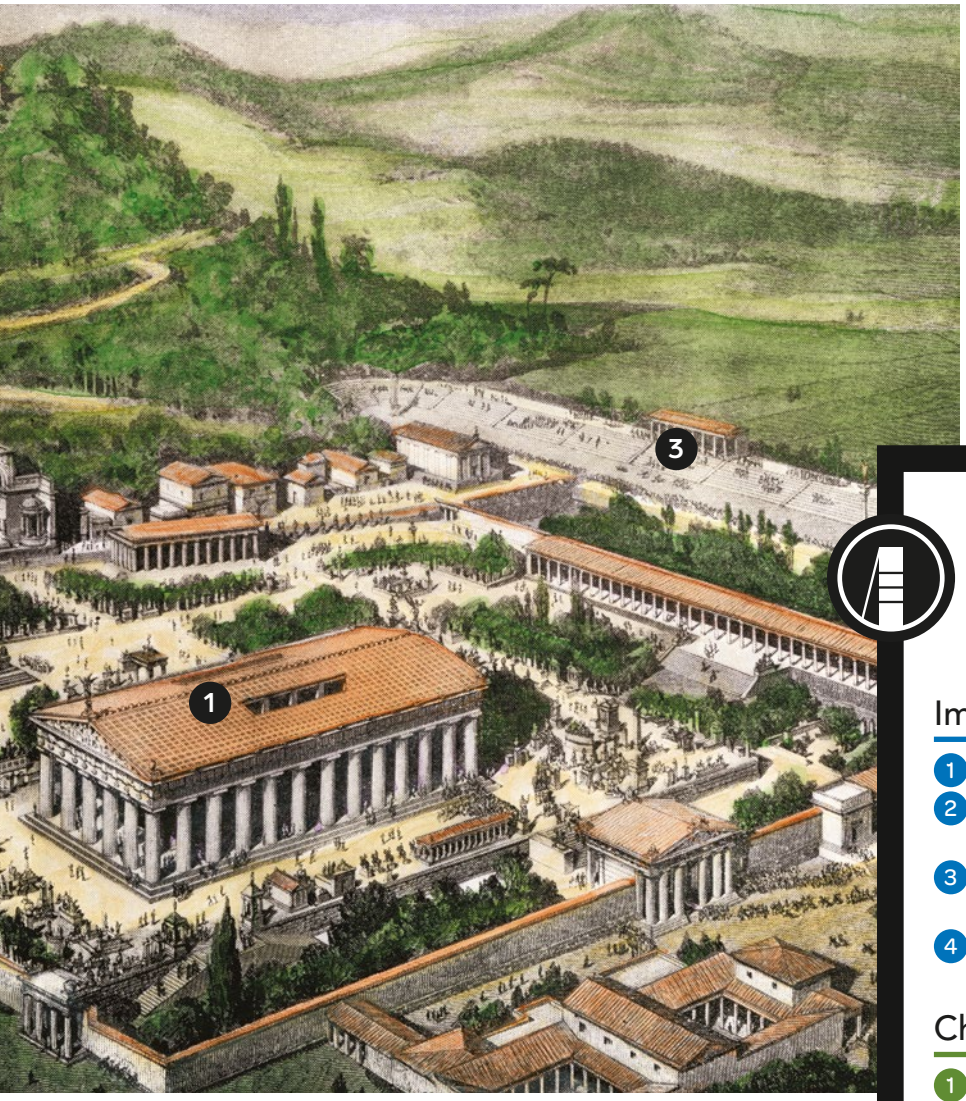
Source 1: This is a *stamnos*, a type of clay pot used to store liquids. It shows two fighters training for the *pankration*. [*Attic Black-figure Pottery Stamnos Depicting an Athletics Scene* (c. 510–500 BCE)]

Olympic events

The main events at the ancient Olympic Games were running and fighting. Running races included a sprint called the *stade*, a long-distance race called the *dolichos* and an event called the *hoplitodromos*, where competitors ran in their hoplite armour.

Source 2: This is what the site of the ancient Olympic Games may have looked like; the ancient games were held in Olympia in Greece.

1. The Temple of Zeus housed a 12-metre statue of Zeus made from gold and ivory. The statue was one of the Seven Wonders of the Ancient World. It was built around 430 BCE and was destroyed in the 5th century CE.
2. The gymnasium was used by athletes to train before the games began.
3. Running races were held at the *stadion*. Athletes competed naked to honour the gods, except for the hoplitodromos where competitors wore hoplite armour.
4. The Temple of Hera, wife of Zeus. As in the modern Olympic Games, the sacred flame used to light the altar was kept burning throughout the Olympic festival. Today, the Olympic flame is lit at Olympia.



Source 3: Stefano Baldini of Italy won the gold medal in the men's marathon at the Olympic Games in Athens in 2004 CE.

Fighting events included wrestling, boxing and the pankration (Source 1), which combined boxing, wrestling and kicking. Crowds found the pankration exciting, with fights sometimes resulting in athletes sustaining severe injuries.

The festival highlights were chariot racing and the pentathlon. The pentathlon included discus throwing, long jump, javelin throwing, running and wrestling. Chariot races had up to 40 chariots racing at high speeds.

Learning ladder H5.13

Impact and legacies

1. Source 1: Identify the sport shown on this pot.
2. Source 2: Describe the site of the ancient Olympic Games.
3. Explain the role of women at the ancient Olympic Games.
4. Explain why the city-states wanted to compete in the ancient Olympic Games.

Chronology

1. Identify the date of the first Olympic Games.
2. List these modern Olympic Games in order, from the earliest to the most recent event:

2004 CE Athens	2020 CE Tokyo
1896 CE Athens	1956 CE Melbourne
2000 CE Sydney	1924 CE Paris.

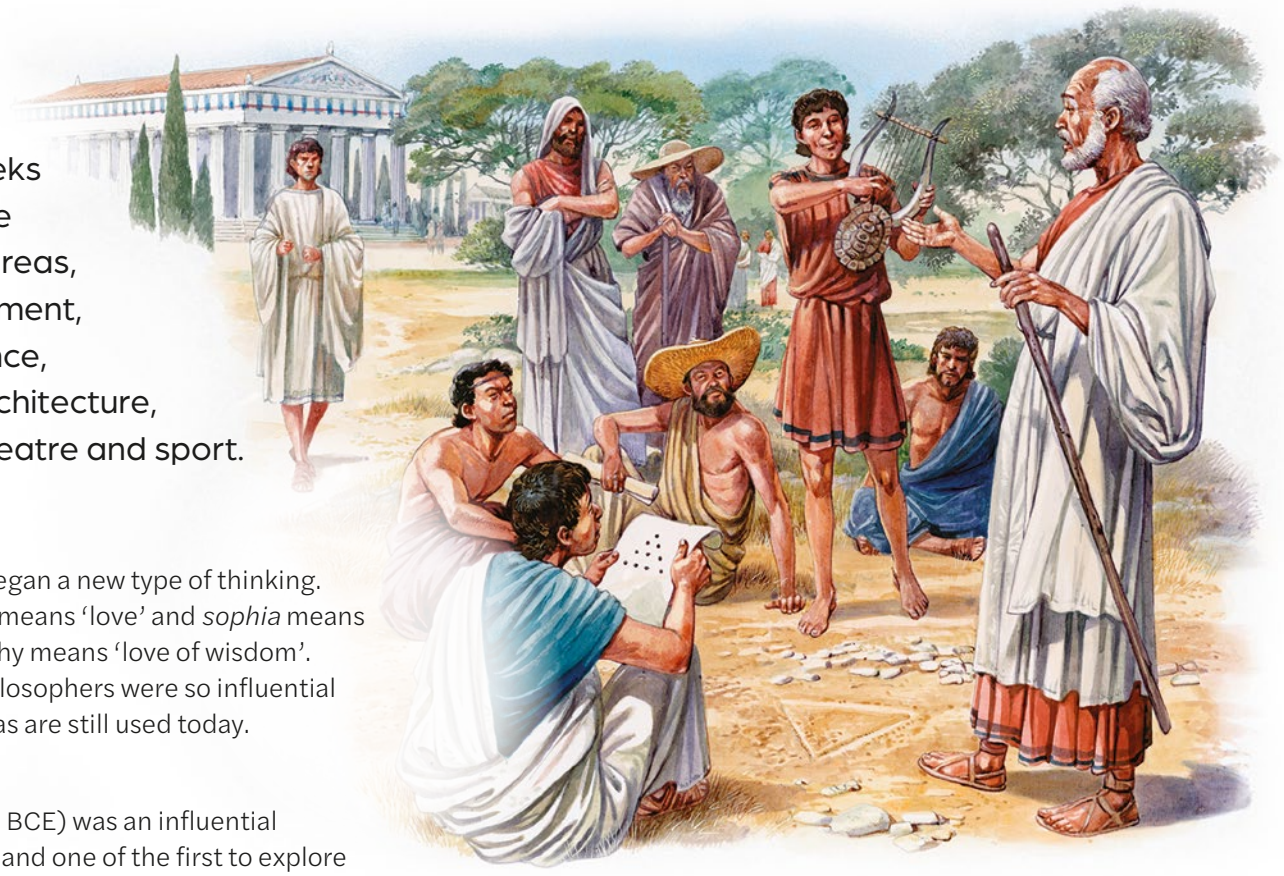
3. Using correct conventions, create a timeline with the events listed in Question 2.
4. Explain how your timeline demonstrates continuity and/or change.

HOW TO

Chronology, page 188

What are the legacies of the ancient Greeks?

The ancient Greeks left an impressive legacy in many areas, including government, philosophy, science, mathematics, architecture, art, language, theatre and sport.



Source 1: Pythagoras lived from about 570 BCE to about 500 BCE. He thought that the entire world could be explained with mathematics. Pythagoras developed an advanced system of geometry that we still use today to find the length of sides of right-angled triangles. It is called the Pythagorean theorem.

Philosophy

Greek philosophers began a new type of thinking. The Greek word *philo* means 'love' and *sophia* means 'wisdom', so philosophy means 'love of wisdom'. The ancient Greek philosophers were so influential that many of their ideas are still used today.

Socrates

Socrates (c. 470–399 BCE) was an influential Athenian philosopher and one of the first to explore the idea of ethics: what is right and wrong. Socrates developed a method of studying issues and problems by asking questions. This became known as the Socratic method.

Socrates also taught that the gods were not to be feared, but were essentially good. This led some to believe that Socrates was undermining the religion of ancient Greece. He was convicted by a jury of corrupting young people with his ideas about the gods, and was sentenced to death by poisoning.

Science and invention

Aristotle

Philosophers such as Aristotle (c. 384–322 BCE) were very interested in science. Aristotle made detailed observations and dissected animals to learn about their anatomy. He also studied astronomy and was the first to discover that the Earth is not a flat disc but a sphere. Aristotle also developed a system of reasoning. For example, he suggested that if all men are mortal, and Socrates is a man, then Socrates must be mortal. He further argued that to be happy, a person must strive to become excellent at all things.

Archimedes

Archimedes (c. 287–212 BCE) was a mathematician and an inventor. While taking a bath, Archimedes worked out that the further down he sank, the higher the water rose. From this observation, he developed Archimedes's principle: a scientific law stating that the amount of water an object pushes aside is equal to its weight.

Archimedes's inventions include the Archimedes' screw, which is a machine that farmers used to extract water from a river or lake (Source 2).

Theatre

Watching plays was a popular form of entertainment in ancient Greece. Plays were performed in open-air, semi-circular theatres. 'Theatre' comes from the Greek word *théatron*, which means 'viewing place'. There were two main types of plays in ancient Greece: tragedies with a moral lesson and comedies about everyday life.

Many elements of ancient Greek theatre are still used in theatre today. Masks and a chorus feature in many modern plays, and the ancient Greek model of 'tragedy', in which a hero makes a series of terrible decisions, is still the basis of tragedies. The ancient Greeks also pioneered satirical plays, in which comedy is used to criticise society. The ongoing significance of ancient Greek drama is demonstrated by modern performances of plays by Euripides, Sophocles, Aristophanes and Menander, which continue to delight audiences.

Architecture

The ancient Greeks developed a unique style of architecture that we can see in temples such as the Parthenon in Athens. Ancient Greek architecture is known for its use of marble, tall columns and intricate detail. This style of architecture is still copied today in major buildings and monuments. For example, the design of the National Library of Australia in Canberra (Source 3) draws from the design of the Parthenon. The original design of the library had the same number of columns as the Parthenon, and its interior has marble stairs and a balcony lined with green marble.

Source 3: The National Library of Australia in Canberra is based on the design of the Parthenon.

Source 2: The Archimedes' screw was used by farmers to transfer water from lakes and rivers into irrigation ditches. Water was pumped by turning the screw inside the cylinder.

Learning ladder H5.14

Impact and legacies

1. Identify the word that means 'love of wisdom'.
2. Describe the types of plays performed in ancient Greece.
3. Explain Aristotle's philosophy of happiness.
4. Source 2: Explain why Archimedes's screw was an important invention in ancient Greece.
5. How did the views of Socrates and Aristotle challenge the traditional beliefs of ancient Greeks?

Significance

1. Identify two ancient Greek philosophers.
2. Source 1: Describe the significant geometry theory developed by Pythagoras.
3. Explain how the National Library of Australia demonstrates the significance of ancient Greek architecture.
4. Why is ancient Greek theatre considered to be significant? Explain your answer.
5. Evaluate the significance of the invention of philosophy.

HOW TO Significance, page 202

How do I conduct a good inquiry?

Now that you've finished the chapter, it's time to conduct your own historical inquiry on ancient Greece. Throughout the chapter you have developed knowledge and understanding of ancient Greece. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own historical inquiry!

A historical inquiry gives you the opportunity to be an active historian: forming questions, interrogating sources and communicating insights about the past on a topic of your choice.

The chapter has covered the origins and legacies of ancient Greece in addition to significant people, events, ideas and beliefs. What would you like to know more about?

- The gods that the ancient Greeks worshipped, H5.4
- The role of women in ancient Greece, H5.6 and H5.7
- The life of Leonidas, H5.11
- The Peloponnesian War, H5.10
- The monuments of ancient Greece, H5.14

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas.

Once you have worked through this process, you are ready to start the historical inquiry. Refer to pages 208–213 of the How-to chapter for a step-by-step guide to this process.

See

What do you see?
Who is involved?
What are the key features?
When and where was this happening?

Think

What do you think about that?
How do you think people were affected at the time?
How is this similar to or different from today?

Wonder

What does it make you wonder?
What did different groups think about this?
Why is this important to know?

Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to expand your knowledge and attempt new skills.
When planning your inquiry, consider how the experiences and perspectives of individuals and groups shaped societies, beliefs and events in the past. Think about how the past has had an impact on the present. Use the How-to chapter to support your planning and research.

Ancient societies
(10 000 BCE – 600 CE)

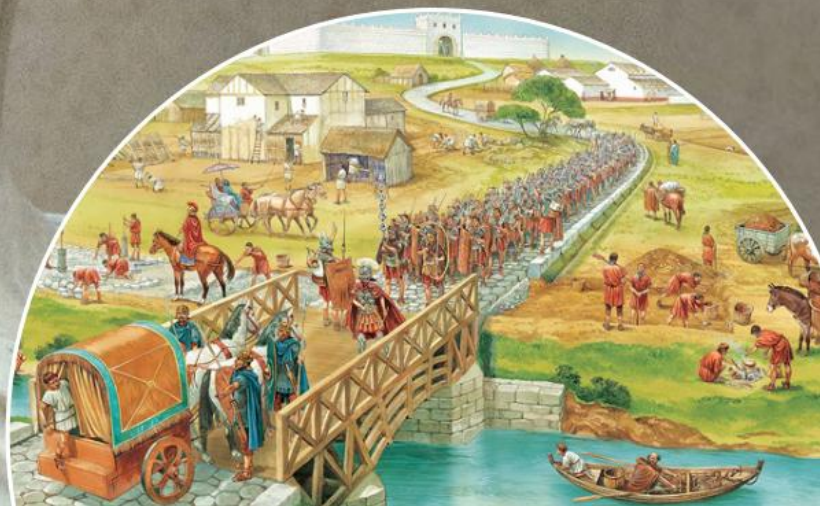
Ancient Rome H6

HOW DID ANCIENT ROME DEVELOP? 150

HOW DID JULIUS CAESAR RISE TO POWER? 166

WHAT HAPPENED AT POMPEII? 176

WHAT ARE THE LEGACIES OF THE ANCIENT ROMANS? 184



H6.0

How can I understand ancient Rome?

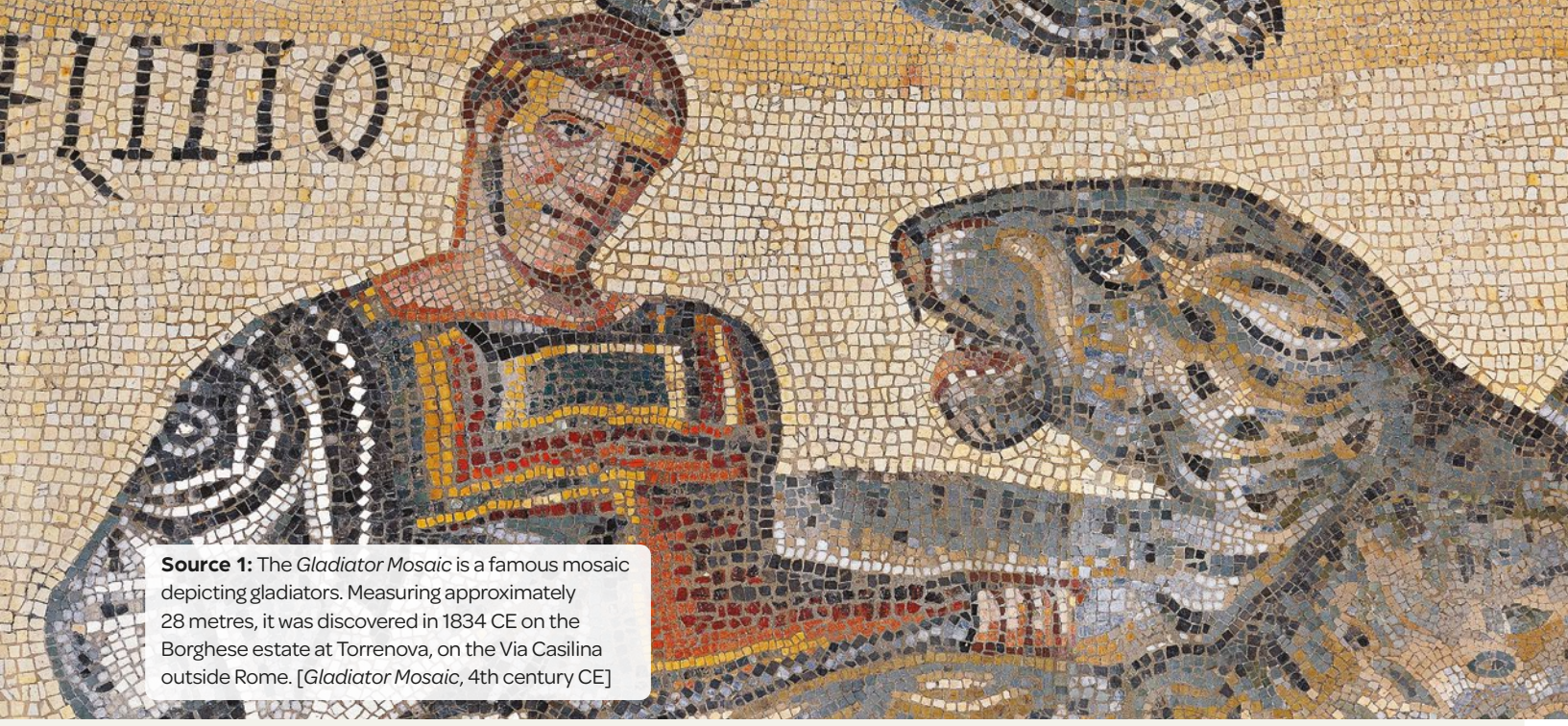
Ancient Roman society lasted for 1200 years and, at its peak, built a huge empire that united Europe. The Romans developed ideas we still use today, such as the balance of power between three branches of government and trial by jury.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Background and origins	Significant people, ideas and events	Impact and legacies	Continuity and change	Causes and consequences
5	I can evaluate the impact of the rise and fall of societies.	I can evaluate how societies were influenced by significant people and ideas.	I can evaluate the legacy of a society.	I can evaluate patterns of continuity and/or change.	I can analyse causes and consequences.
4	I can explain why a society developed.	I can explain why ideas influenced people and events.	I can explain why a society has a legacy.	I can explain patterns of continuity and/or change.	I can explain why something was caused or why it led to certain consequences.
3	I can explain how a society developed.	I can explain how ideas influenced people and events.	I can explain the impact of one society on another.	I can explain continuity and change.	I can explain how something was caused or its consequence.
2	I can describe the origins of societies.	I can describe key people, ideas and events.	I can describe the legacy of a society.	I can describe continuity and change.	I can describe causes and consequences.
1	I can identify the origins of societies.	I can identify key people, ideas and events.	I can identify the legacy of a society.	I can identify continuity and change.	I can identify a cause and a consequence.

Knowledge and understanding



Source 1: The *Gladiator Mosaic* is a famous mosaic depicting gladiators. Measuring approximately 28 metres, it was discovered in 1834 CE on the Borghese estate at Torrenova, on the Via Casilina outside Rome. [*Gladiator Mosaic*, 4th century CE]

Perspectives	Significance	Interpretations	Chronology	Sources	Steps in skills progression
I can evaluate historical perspectives.	I can evaluate historical significance.	I can evaluate the evidence supporting a historical interpretation.	I can explain change or causality from a timeline.	I can evaluate sources to determine their accuracy, usefulness and reliability.	5
I can compare perspectives.	I can explain why something is historically significant.	I can compare historical interpretations.	I can summarise the events on a timeline.	I can explain the historical context of a source.	4
I can explain a perspective.	I can explain something historically significant.	I can explain an interpretation of history.	I can follow timeline conventions.	I can apply historical knowledge to explain sources.	3
I can describe perspectives.	I can describe something historically significant.	I can describe an interpretation of history.	I can place events on a timeline chronologically.	I can describe a source.	2
I can identify the perspective of a person from the past.	I can identify something historically significant.	I can identify a historical debate.	I can read a timeline.	I can identify the origin of a source.	1

Historical concepts and skills

What was ancient Rome?

Ancient Rome grew from a collection of villages to become a vast empire that covered much of modern Europe and northern Africa.

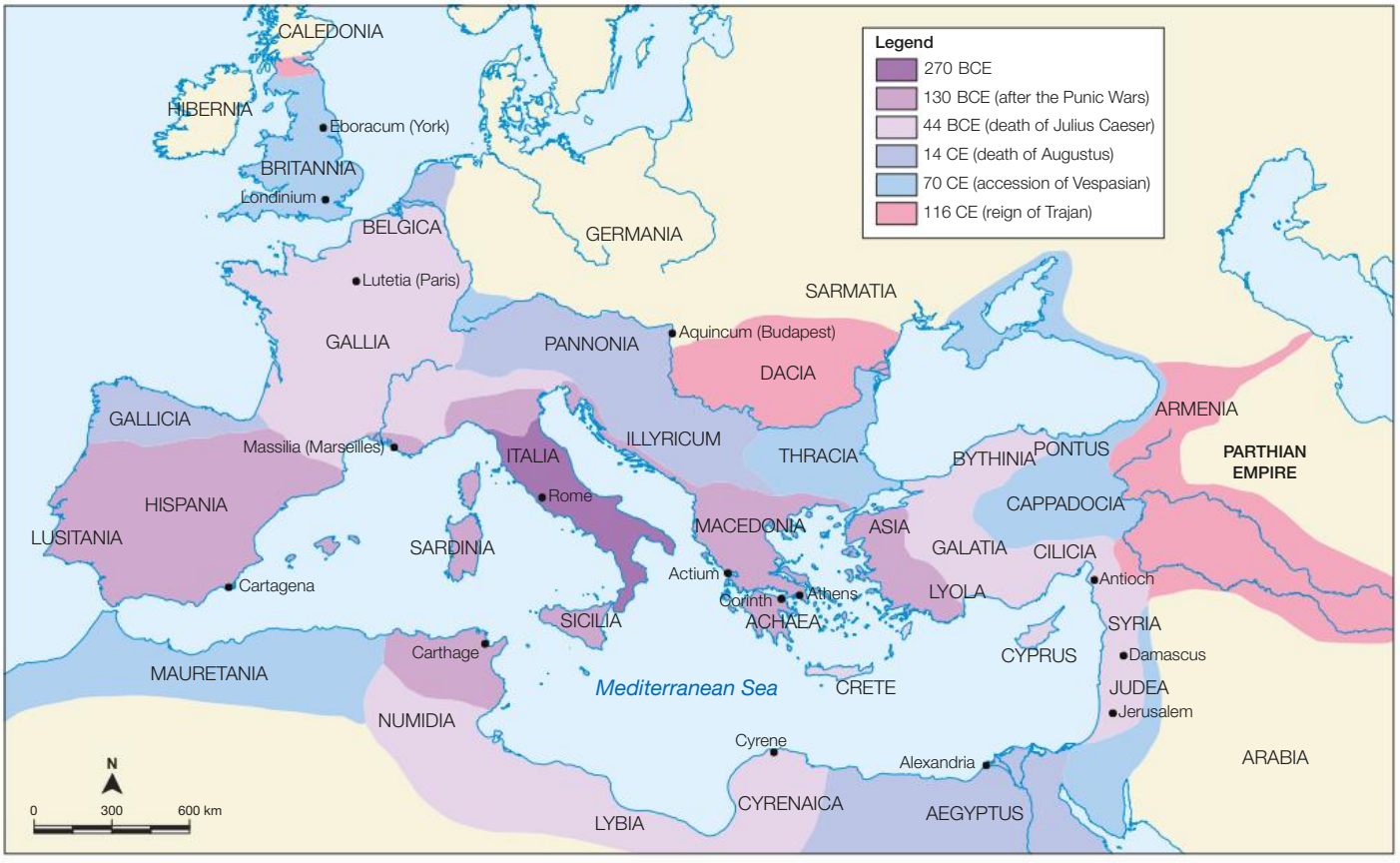
The kingdom of Rome

The kingdom of Rome was situated in Latium, a small region on the west coast of Italy. Little is known about the kingdom as no records from that time survive. Romulus was believed to have been the first king of Rome and was followed by another six kings.

The Roman monarchy lasted from 753 BCE until 509 BCE. The monarchy was overthrown during the reign of the seventh king of Rome, the deeply unpopular King Lucius Tarquinius Superbus. This led to the beginning of the Roman Republic.

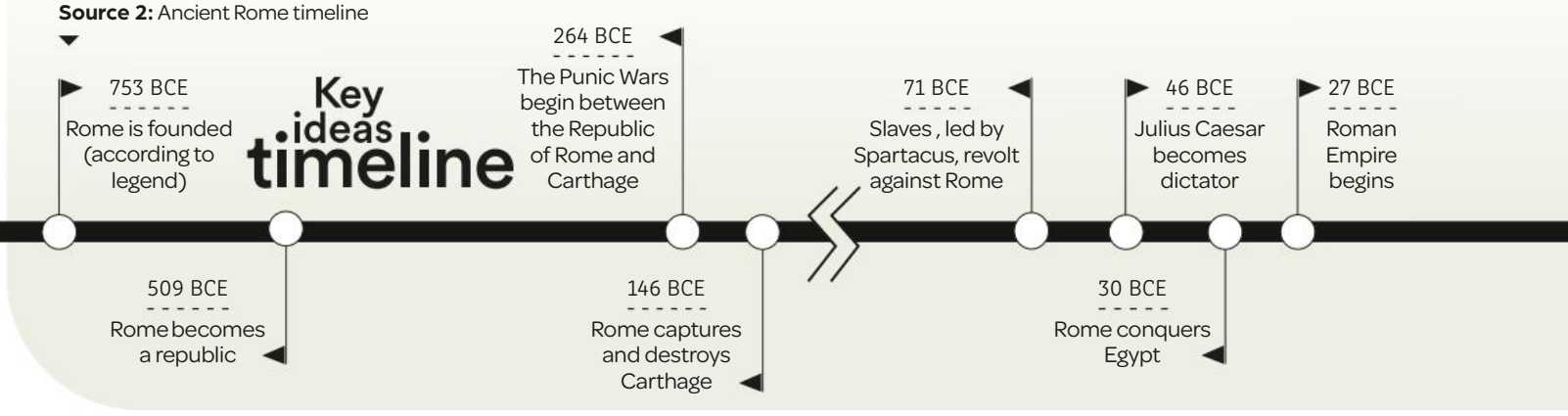
The Roman Empire

Source 1: The growth of the Roman Empire from 270 BCE to 116 CE



Source: Matilda Education Australia

Source 2: Ancient Rome timeline



Source 3: Caesar was a Roman general and statesman during the time of the Roman Republic. In this painting, the leader of the Gauls, Vercingetorix, throws down his weapons as he surrenders to Caesar after the Battle of Alesia in 52 BCE. Led by Caesar, Roman troops conquered much territory, including Gaul (modern-day France). [Lionel-Noël Royer (1899 CE), *Vercingetorix Throws Down his Arms at the Feet of Julius Caesar*]

The Roman Republic

The powers previously held by the king were passed to two elected officials called **consuls**. The citizens of Rome now had a say in how it was run through their elected representatives. Rome expanded greatly through the Roman Republic period, which lasted 482 years and ended in 27 BCE.

The Roman Empire

After a period of instability, Rome changed from being a republic to being an **empire** in 27 BCE. The long reign of Rome's first **emperor**, Augustus, began a golden age of peace and prosperity for Rome that lasted more than 500 years, until 476 CE. Over time, the Roman Empire expanded to become one of the largest empires in world history. At its peak in 117 CE, 70 million people – 20 per cent of the world's population at the time – lived in territories controlled by Rome. The empire covered five million square kilometres and included most of Europe, west Asia, northern Africa, and the islands in the Mediterranean Sea (Source 1).

Learning ladder H6.1

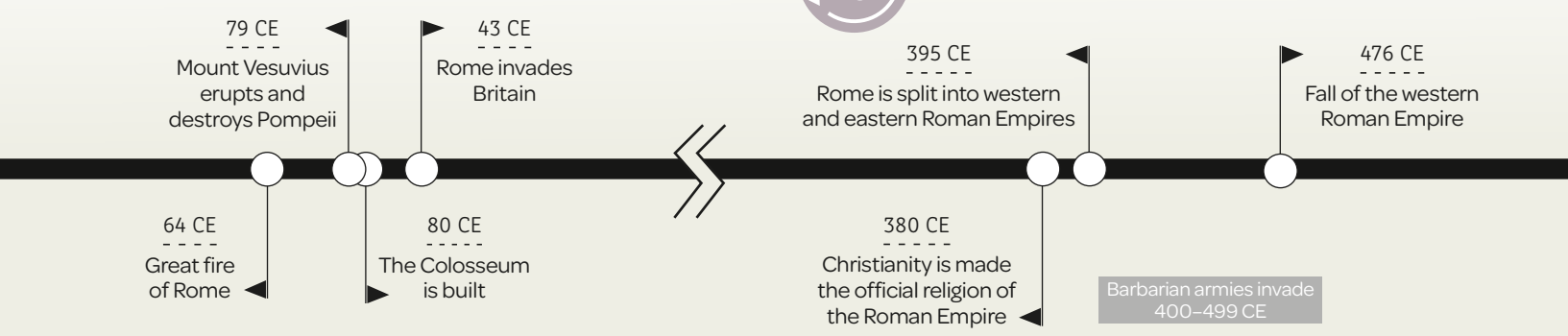
Background and origins

1. Identify the three types of government in ancient Rome.
2. Describe how the monarchy ended in 509 BCE.
3. Explain how the Roman Republic was governed.
4. Explain why ancient Rome changed from a republic to an empire.
5. In a table, list five challenges of running an empire as large as the Roman Empire. Then suggest five ways of dealing with those challenges.

Chronology

1. Source 2: Use the timeline to answer the questions below:
   - **a** How many years were there between the founding of Rome and the fall of the western Roman Empire?
   - **b** For how long was Rome a republic?
   - **c** How long did the Punic Wars last?
2. Place these events in chronological order:
   - 380 CE: Christianity becomes the official religion of Rome
   - 64 CE: Nero begins to persecute Christians in Rome
   - 312 CE: Emperor Constantine becomes a Christian
   - 303 CE: The Great Persecution begins.
3. Using appropriate conventions, create a timeline containing the events in Question 2.
4. Summarise the main events that occurred during the Roman Republic.

HOW TO Chronology, page 188



How did ancient Rome develop?

Ancient Rome's proximity to the Mediterranean Sea enabled the Romans to trade and interact with people from other societies, while the Alps and Apennine Mountains helped protect the city of Rome from invaders.

Ancient Rome

Ancient Rome was a state centered on the city of Rome, which is located on the west side of the Apennine Peninsula in a region known as Latium. The city of Rome was founded around 753 BCE.

Ancient Rome's geography

Ancient Rome had many geographic advantages that helped it become one of the greatest empires in history.

The city of Rome was well protected from the east by the Apennine Mountains, which run along Italy's spine from north to south (Source 1). The Alps to the north slowed attacking armies as they made their way through narrow, snow-covered passes, enabling the ancient Romans to defend their territory.

In addition, the city was built on the banks of the Tiber River, which supplied fresh water and access to the Mediterranean Sea trade routes.

The valleys of the Po River and the Tiber River contained rich volcanic soil that was ideal for agriculture. The produce grown by ancient Romans included wheat, olives and grapes.

The Apennine Peninsula

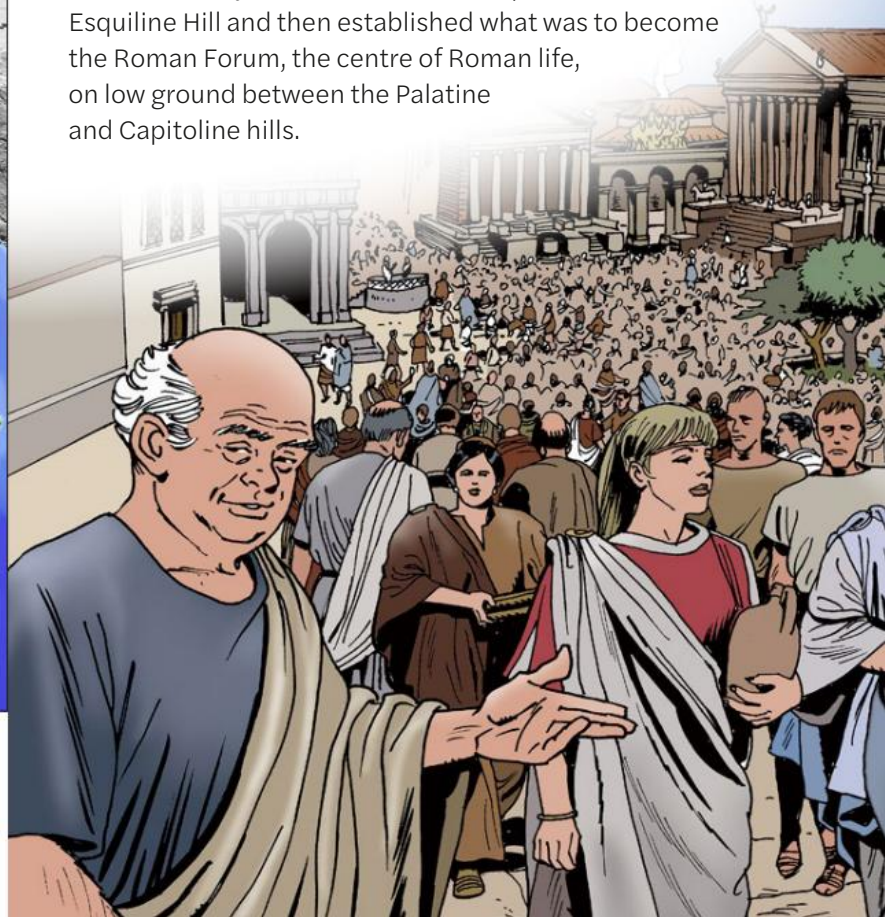
Source: Alamy

Source 1: This map shows the mountainous terrain of the Apennine Peninsula.

Geographic location

The Apennine Peninsula is located close to the Mediterranean Sea, so the ancient Romans had easy access to the key trading routes of the time.

Ancestors of the Romans had developed a settlement on the Palatine Hill (Source 3) in the 9th or 10th century BCE. The settlement spread to the Esquiline Hill and then established what was to become the Roman Forum, the centre of Roman life, on low ground between the Palatine and Capitoline hills.



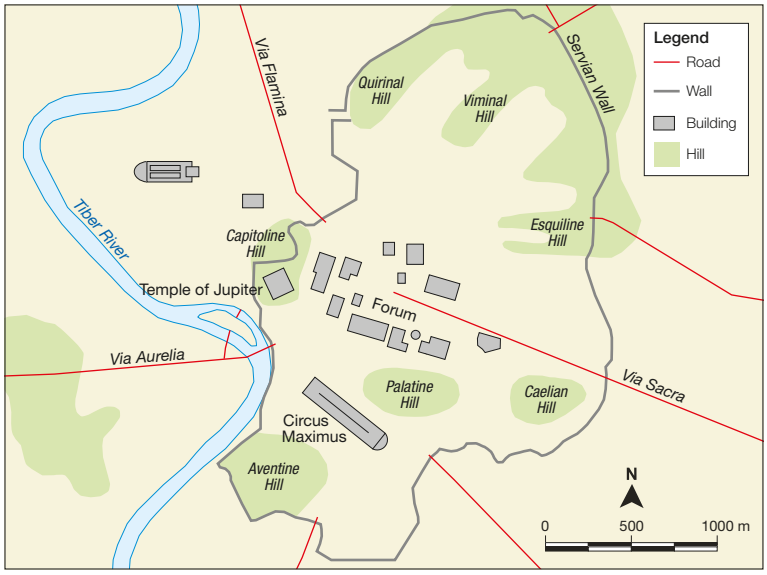
With access to Mediterranean trading routes and natural (mountainous) protection from invasion, Rome had the ideal geographic location to develop as a leading society in the ancient world that could expand into an empire.

The city of Rome

The early city of Rome was largely unplanned. As the city expanded, narrow, winding streets and crowded alleys were added as needed, resulting in a disorganised and confusing layout. In 64 CE, however, a Great Fire destroyed much of the city. The Roman emperor at the time, Emperor Nero, established a new plan for the city. Rubble was cleared away and used to fill marshy swamp land. Wider, straight roads were built, connecting important public spaces such as bathhouses, markets and theatres. Water supplies were also redesigned so that each district had plenty of water.

The new streets were soon full of noise, colour and the smell of cooking, with markets selling clothing, food and wine throughout the day and into the evening.

The layout of the ancient city of Rome



Source: Matilda Education Australia

Source 3: The first settlers built homes on the seven hills of Rome, which could be easily defended. A large wall, called the Servian Wall, was built to protect the city from invaders.

Source 2: Ancient Romans in the city of Rome

Learning ladder H6.2

Background and origins

1. Source 1: Identify three geographical features on the map.
2. Describe the key features of ancient Rome's geography.
3. Explain how the river valleys benefited the city of Rome.
4. Sources 1 and 3: Explain why the Tiber River was important.

Causes and consequences

1. Source 3: Identify the cause of the construction of the Servian Wall.
2. Describe the consequence of Emperor Nero's new designs for the city of Rome.
3. Sources 1 and 3: Explain the consequence of the Apennine mountain range and the Alps on ancient Roman society.
4. Explain why the location of the city of ancient Rome helped it to become prosperous and powerful.

HOW TO

Causes and consequences, page 196

H6.3

What did the ancient Romans believe?

Much of ancient Roman mythology was based on that of ancient Greece. Nevertheless, it connected the Roman people to their own unique place and time.

The ancient Roman creation story

Like the ancient Greeks, the Romans believed that the world began from nothingness, known as Chaos. Gaia, the Earth goddess, emerged from Chaos. She was followed by Uranus, the sky god.

Gaia and Uranus gave birth to the Titans, of whom there were twelve. The Titans included Saturn, Ops, Phoebe and Mnemosyne. Saturn and Ops had six children: Neptune, Pluto, Hestia, Juno, Ceres and Jupiter. Believing that his children planned to overthrow him, Saturn ate the first five of them. The sixth, Jupiter, was hidden by Ops. Once Jupiter was an adult he returned to fight Saturn and defeated him to become king of the gods.

The story of Aeneas

The story of Aeneas is one of the most important in Roman mythology because it links the Romans directly to the gods of ancient Greece.

Aeneas was believed to be the son of the goddess Aphrodite (known as Venus to the Romans). He had been involved in a mythical ancient Greek war called the Trojan War. According to Greek mythology, the Trojan War had broken out because of a dispute between the goddesses Hera, Athena and Aphrodite that had spilled over into the human world, pitting the Greeks against the people of Troy (known as Trojans). Hera, Athena and Poseidon had sided with the Greeks, while Aphrodite, Apollo and Ares had sided with the Trojans.

Aeneas survived the war by escaping from Troy. After many adventures, he travelled to the region of Latium, where he founded ancient Rome.

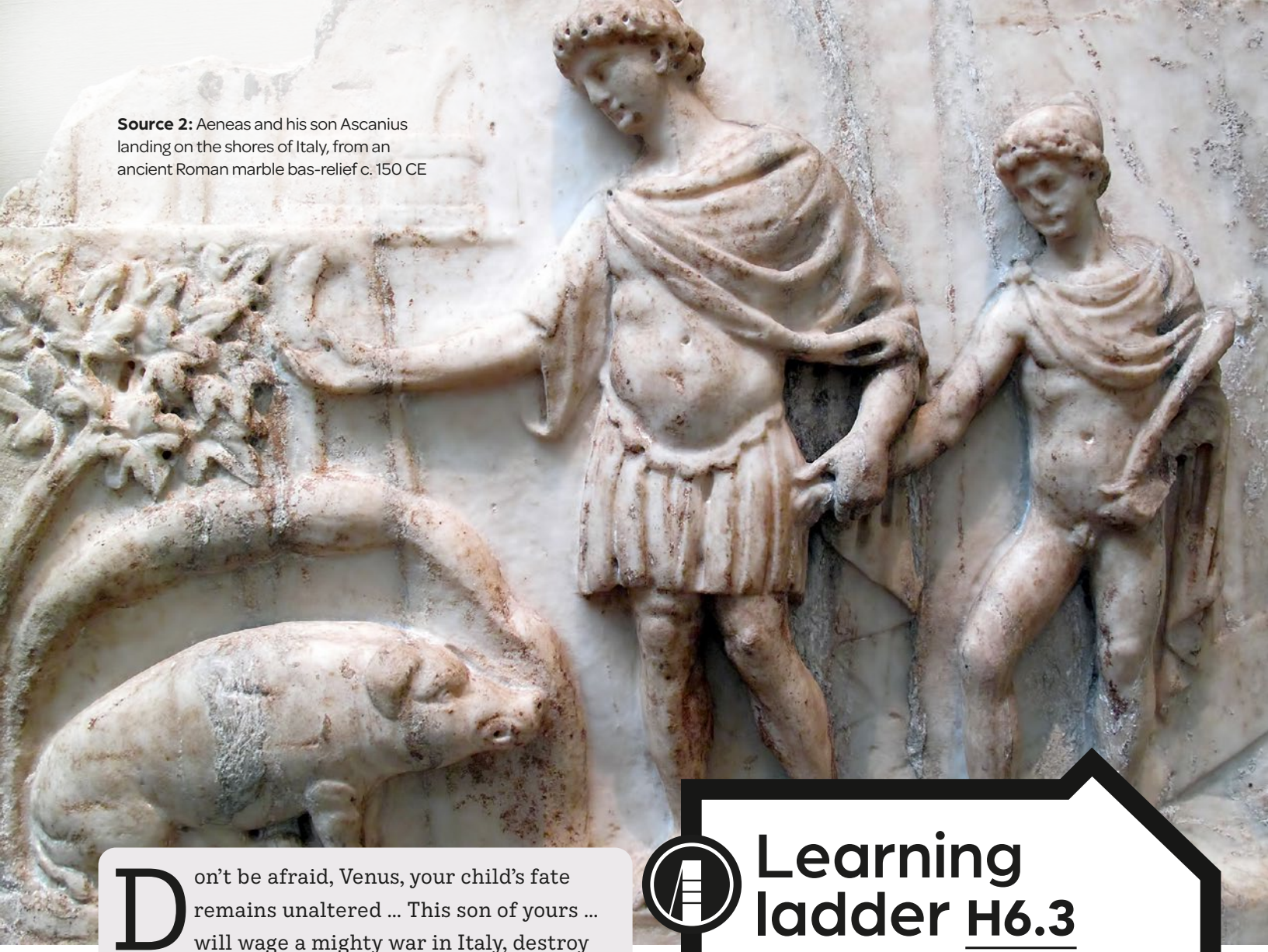
Romulus and Remus

According to Roman mythology, the city of Rome was founded by a man named Romulus. Romulus had been one of twin boys, Romulus and Remus, born to a priestess, Rhea Silvia. Rhea Silvia was the daughter of King Numitor, who was king of the town of Alba Longa and a descendant of Aeneas. The twins' father was Mars, the god of war.

Rhea's uncle Amulius deposed King Numitor. He did not want Romulus or Remus to threaten his claim to the throne, so he ordered that they be drowned in the Tiber River. However, the basket into which they were placed floated down the river and came to rest at the site of the future city of Rome.

Romulus and Remus were discovered by a wolf, who raised them as her own cubs (Source 1). When the boys became men, they decided to build a city on the site where they had been rescued by the wolf. After arriving back in the area of the seven hills, Romulus announced that they should build their city on the Palatine Hill. But Remus preferred the Aventine Hill. They could not agree and decided to seek the gods' approval. Remus saw six birds sent by the gods, but Romulus saw 12. Romulus then killed his brother and became the king of Rome around 753 BCE. The city was named after him.

Source 1: The image of Romulus and Remus being suckled by a wolf has been a symbol of the city of Rome since the 3rd century BCE. [*Capitoline Wolf*, c. 11th century CE, bronze]



Source 2: Aeneas and his son Ascanius landing on the shores of Italy, from an ancient Roman marble bas-relief c. 150 CE

Don't be afraid, Venus, your child's fate remains unaltered ... This son of yours ... will wage a mighty war in Italy, destroy proud peoples, and establish laws, and city walls, for his warriors until a third summer sees his reign in Latium ...

But [then] the boy Ascanius [Aeneas' son], will move his throne from its site at Lavinium, and mighty in power, will build the walls of Alba Longa. Here kings ... will reign for three hundred years, until a royal priestess, heavy with child, shall bear Mars' twins.

Then Romulus will further the race, proud in his nurse the she-wolf's tawny pelt, and found the walls of Mars, and call the people Romans, from his own name.

I've fixed no limits or duration to their possessions: I've given them empire without end.

Source 3: Extracts from Virgil (30–19 BCE), the 'Aeneid'. The 'Aeneid' is an epic poem written by the ancient Roman poet Virgil. In this extract, Jupiter is speaking to Venus.

Learning ladder H6.3

Background and origins

1. Identify the name of the nothingness that existed before the creation of the world.
2. Describe how the world was made, according to Roman mythology.
3. Explain how Jupiter became the king of the gods.
4. Source 3: Explain why the story of Aeneas is important in Roman mythology.

Sources

1. Source 3: Identify the origin of this source.
2. Source 1: Using the source, describe how Romulus and Remus were cared for.
3. Source 3: Explain how this source demonstrates the link between the gods and the Roman people.
4. Source 3: Explain the context of this source – what sort of government did Rome have when it was written? How long after the founding of Rome was it written?

HOW TO Sources, page 191

How was ancient Roman society governed?

The structure of the society of ancient Rome was based on heredity (who your parents were), property, wealth and citizenship.

Citizens

To be a **citizen** in ancient Rome, both your parents had to be citizens. Citizens had much more power than people who were not citizens. In addition, male citizens could vote when they were 25 years old, be elected as magistrates and were protected by the law. Female citizens did not have the right to vote, and their father or husband took responsibility for them in legal matters. However by the 1st century CE, they could own property, write a will and testify in court.

There were four groups of citizens in ancient Rome:

- **Patricians** were members of the land-owning upper class. To be a patrician, both your parents had to be patricians. Patricians held all the highest positions in the republic.
- **Equites** were members of the middle class. They were professionals who worked as tax collectors, bankers, merchants or civil servants. They could also serve as questors or on the assemblies. They owned at least 400 000 **sesterces** worth of land.
- **Plebeians** often worked as farmers and artisans. They made up most of the population. A plebeian could move to the equites class if they were able to buy 400 000 sesterces worth of land.
- **Freedmen** were former slaves and were considered second-class citizens: they were not allowed to vote, but were protected under the law. Their free-born children, however, had full rights as citizens.

Governing the republic

Under the constitution of the Roman republic, there were three branches of government:

- the **magistrates**, who had religious, military and legal powers. Two of the magistrates were consuls who served for one year. The consuls jointly made decisions about whether the republic would go to war, raise taxes or pass laws.
- the **Senate**, a group of 300 patricians that advised the magistrates and the consuls
- the **assemblies**, which elected the magistrates. The Assembly of Centuries, dominated by the wealthiest citizens, elected the most important magistrates, including the consuls and praetors, and decided whether to declare war. The Assembly of Tribes, in which all citizens could vote, elected the minor magistrates, including quaestors and aediles. From 471 BCE there was also another assembly, known as the Plebeian Council, where plebeians could vote on laws that only affected plebeians.

Learning ladder H6.4

Significant people, ideas and events

1. Identify the four groups of citizens in ancient Rome.
2. Describe the equites class.
3. Explain how magistrates were elected to their positions.
4. Source 1: Using the source and your knowledge, explain the difference between the rights of patrician citizens and plebeian citizens.

HOW TO

Continuity and change, page 193

Continuity and change

1. Identify the most exclusive class of Roman citizens (the one with the most continuity).
2. Describe how the rights of plebeians changed in 471 BCE.
3. Explain how a plebeian could change their class.
4. Explain why the children of freedmen had more rights than their parents.
5. Source 1: Using the source and your knowledge, explain what changes could have made ancient Rome a more equal society.

Senator
(also a patrician)

Consul

Senate (300)
The Senate comprised current and past magistrates who served for life. Senators managed foreign policy and controlled the money. They proposed but could not pass laws.

Gave advice

PATRICIANS

Consuls (2)
Managed the Roman army and affairs of government; they could veto each other.

A former consul could become a dictator (in emergencies) for six months.

Praetors (8)
Judges who administered Roman law

A patrician magistrate could become a censor (for 18 months). Censors conducted a census (head count) of Rome every five years.

Aediles (16)
Looked after particular matters of government such as public buildings, food supply and games

Could become the chief priest (*pontifex maximus*) and the governors of provinces

Patricians

Quaestors (20)
Managed financial and administrative matters

PLEBEIANS

Tribunes (10)
Representatives of the plebeians; could call meetings of the Senate

Ordinary people
Townsfolk, farmers, soldiers, craftspeople

Plebeians

Slaves
Slaves were not citizens and had no rights. They were considered to be possessions. Slaves worked on farms, in mines, as gladiators and as secretaries.

Source 1: How ancient Roman society was governed

H6.5

Was ancient Rome a slave society?

Slavery was widely accepted in the ancient world, and few questioned the unjust practice of enslaving another human being.

Who were the slaves?

Between 10 and 20 per cent of the population of ancient Rome were slaves, with most slaves living in the city centres. Slaves came from all walks of life. Many of the people forced into slavery had been captured in war. As the republic and later the empire of Rome expanded its territory, people in the newly captured territories were taken into slavery. Others were born into slavery, as the sons or daughters of slave mothers. Children could also be sold into slavery by their parents if they could not afford to feed them.

Slaves could be bought and sold at slave markets, such as the one near the Temple of Castor at the Forum in the city of Rome. The price of an enslaved person depended on their age, sex and skills. Most slaves cost around 2000 sesterces, but an educated slave could cost up to 8000 sesterces. The majority of Roman households could afford at least one slave. Wealthy patrician families might own thousands of slaves.

Source 1: Marble relief showing two freedmen, Publius Licinius Philonicus and Publius Licinius Demetrius, c. 30 BCE–10 BCE. On the left are the rods and axes used in the ceremony of freeing a slave. On the pediment are the tools of a blacksmith, and on the right the tools of a carpenter. These men may have been skilled craftsmen who purchased their freedom from their slave master, Publius Licinius.

What did enslaved people do?

Slave labour was a key reason why Rome became a powerful, wealthy and influential society. Enslaved people carried out a range of jobs in ancient Rome. Most slaves did menial labour, working in households, in mines, in quarries and on farms. They built monuments and important buildings, roads, sewers and **aqueducts**. Slaves who were educated or had a skill might work as a physician, teacher, accountant or librarian, while a strong, healthy slave could be trained to fight as a **gladiator** for the entertainment of Romans.

Enslaved people were considered the property of their masters and could be bought or sold at any time. They had no rights, were unable to own property and could not legally marry. Their masters were also allowed to mistreat them.

When I was a young man I decided to make sure never to strike any slave of my household with my hand. My father practised this same restraint. Many were the friends he reproved when they had bruised a tendon [of their hand] while striking their slaves in the teeth ... They could have waited a little while, he said, and used a rod or whip to inflict as many blows as they wished...

Source 2: Galen (c. 165 CE), *On Passions and Errors of the Soul*. Galen was a Greek physician and slave owner. Greece was then part of the Roman Empire.

How were slaves freed?

Unlike many other slave-owning societies, Roman slaves could be set free and become citizens. Most slaves were freed after they saved up enough money to buy their freedom. Enslaved people were freed in a special ceremony (called *manumission*) performed by a magistrate. During the ceremony they were given a proper Roman name, which included their former master's surname. As freedmen, they could work for themselves and even own slaves.

Source 4: A modern image of Spartacus, leader of a slave rebellion in 73 CE

Remember that he whom you call your slave came into life the same route as you, basks in the same sky and breathes, lives and dies in the same way as you do ... I don't want to get too involved in the broader issues of the treatment of slaves, to whom we are extremely arrogant, cruel and abusive. This however is the sum of my advice: treat your inferiors as you would want to be treated by your masters.

Source 3: Excerpt from Seneca (c. 60 CE), *Epistles*. Seneca was a Roman playwright and philosopher. He was also a slave owner.

Slave rebellions

Cruel treatment led to major slave rebellions during the republican era. The most famous of these was the rebellion led by Spartacus in 73 BCE. Spartacus was a former gladiator who led 90 000 slaves against the Roman Republic. Despite the slave army achieving a number of victories, the Roman general Crassus led his armies against the slaves and crushed the rebellion. The 6000 surviving slaves were crucified as a warning to other slaves.

Following Spartacus's failed rebellion, the Romans passed harsh laws and punishments to keep slaves under control. For example, if a master was killed by one of his slaves, all the slaves in his household would be tortured and executed by crucifixion. Spartacus's rebellion would be the last slave rebellion in ancient Rome.

Learning ladder H6.5

Significant people, ideas and events

1. Source 4: Identify the slave in this source.
2. Describe the work done by slaves.
3. Source 1: Using the source and your knowledge, explain how slaves were freed.
4. Explain why there were no slave rebellions after Spartacus's revolt.
5. Evaluate the significance of slaves to Rome's power and influence.

Perspectives

1. Sources 2 and 3: Identify whether the perspective of each source is that of a slave or a slave owner.
2. Sources 2 and 3: Describe the perspective of the author of each source.
3. Source 2: Explain why the author of the source might hold this perspective.
4. Sources 2 and 3: Contrast the perspectives of these two sources.
5. Sources 2 and 3: In what way is the perspective of the sources similar?

HOW TO

Perspectives, page 200

What was life like in ancient Rome?

The rights, opportunities and freedoms of the ancient Romans were generally determined by their sex, wealth and age.

Men in ancient Rome

Roman men were the heads of their families. The oldest man in a family was called the **paterfamilias** (father of the family) and was responsible for controlling and maintaining the family's business affairs and property. The paterfamilias had significant power over his children. He could disown his children if they displeased him and could sell his children into slavery. He also decided whom his children would marry.

Women in ancient Rome

Women were under the control of their fathers until they married. Girls could be married from the age of 12, but were usually married at 15. Girls were named after their fathers – the daughter of a man named Marcus Octavius was named Octavia.

Roman wives were expected to remain in the home caring for children. Plebeian women spun wool and wove cloth to make clothes. They had no political power, and could not vote or hold public office. From the 1st century CE, however, women who had given birth to three children were permitted to own property and run their own businesses.

Source 1: Fresco of a husband and wife. The husband holds a roll of papyrus and his wife holds a stylus (pen) and a wax writing tablet, indicating that she was literate. [*Portrait of Terentius Neo* (c. 50 CE), found in the house of Terentius Neo, Pompeii, Italy]

Source 2: A sarcophagus depicting scenes from the life of Marcus Cornelius Statius, a child who had died around the age of seven, c. 150 CE

Children in ancient Rome

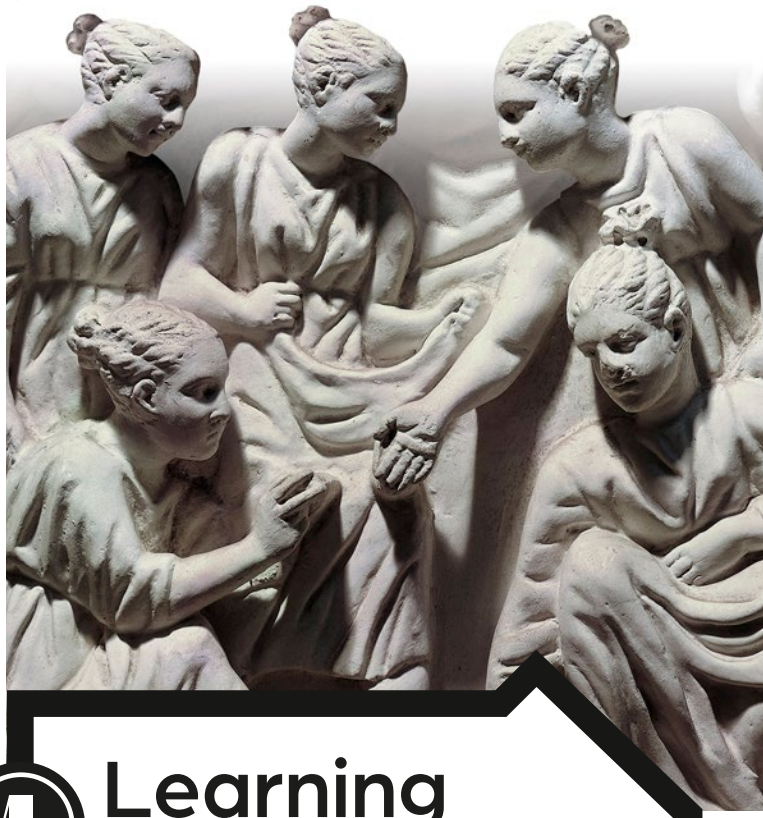
When a child was born, it was put on the floor. If the paterfamilias decided to keep the baby, it was allowed to join the family. If not, the baby was left outside to die or to be collected by a slave master. Even if a baby was saved from this awful fate, child mortality in ancient Rome was very high. Around 50 per cent of children died before reaching the age of 10, mostly in the first five years of life.

Children remained at home with their mothers. At the age of seven, plebeian boys would start to help their father at his work outside the home, while plebeian girls helped their mothers. Patrician and equites boys, meanwhile, would begin their education at age seven. Some of these boys were educated by a private tutor, while others attended school where they learned Latin, Greek, history, mathematics and oratory (public speaking). Patrician and equites girls also began their education at age seven. Private tutors taught them reading, writing and music.

> Why should we pay taxes when we have no part in public office or honours or commands or government in general? ... Because you say this is a time of war? And when have there not been wars? And when have women paid taxes [before now]?

Source 3: An extract from Hortensia's speech at the Forum, given in 42 BCE, to protest against women being charged taxes to fund the civil war in Rome. Hortensia was a patrician woman whose father, Quintus Hortensius, had taught her public speaking. She was able to speak at the Forum because, under Roman law, women were allowed to speak publicly during times of war. As a result of her speech, the number of women required to pay the tax was reduced, while all patricians, equites and wealthy plebeian men were taxed.

Source 4: Girls playing. [Relief sculpture on an unknown child's sarcophagus, c. 250 CE]



Learning ladder H6.6

Significant people, ideas and events

1. Identify the age at which plebeian children started work.
2. Describe the role of the paterfamilias.
3. Source 3: Using your knowledge, explain how Hortensia was named.
4. Explain the difference between how wealthy Roman boys and girls were educated.
5. Evaluate whether a person's sex or their wealth was more important in determining the opportunities they had in life.

Sources

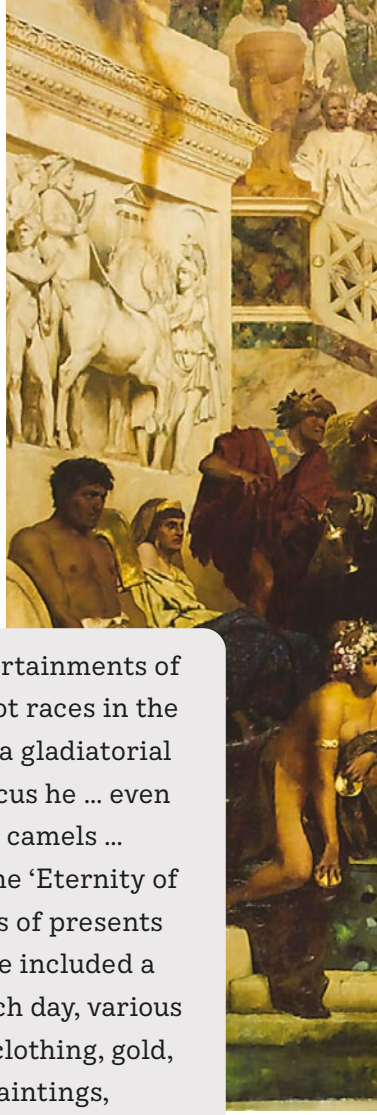
1. Source 1: Identify the origin of the source.
2. Source 4: Describe what the source shows.
3. Source 2: Explain how the source demonstrates the life of a patrician boy.
4. Source 3: Explain why Hortensia was opposed to women paying taxes.
5. Source 3: Evaluate the significance of Hortensia's speech.

HOW TO Sources, page 191

H6.7

Who ruled the Roman Empire?

The emperors of ancient Rome were supreme rulers. They were often chosen by the Senate, but they ruled like kings. Some were brave soldiers and good leaders who were celebrated for their achievements. Others abused their power and were despised for their cruelty.



The Roman Empire had many emperors; three notable rulers are Augustus, Nero and Marcus Aurelius.

Augustus

In 27 BCE, Caesar's adopted son, Octavian (63 BCE–14 CE), became the first emperor of Rome. He was given the name Augustus, meaning 'the revered one'. During his 40-year reign, Augustus used Rome's military might to enlarge the empire to include Egypt and Spain.

Augustus embarked on a program of road-building, and developed trade with new partners such as India. He expanded the Roman system of censuses and taxation to help integrate newly conquered lands into the Roman Empire. Augustus founded the Roman postal service and introduced firefighters (called *vigiles*).

Augustus laid the foundations for a long period of peace: the western Roman empire lasted until 476 CE and the eastern Roman empire lasted until 1453 CE. Augustus renamed a month after himself (August), just as Julius Caesar had done with the month of July.

He [Nero] gave many entertainments of different kinds: … chariot races in the Circus, stage-plays, and a gladiatorial show … For the games in the Circus he … even matched chariots drawn by four camels … At the plays which he gave for the 'Eternity of the Empire' … every day all kinds of presents were thrown to the people; these included a thousand birds of every kind each day, various kinds of food, tickets for grain, clothing, gold, silver, precious stones, pearls, paintings, slaves, beasts of burden, and even trained wild animals; finally, ships, blocks of houses, and farms.

Source 1: This text was written by Suetonius, who was an ancient Roman historian. [Suetonius (121 CE), *The Lives of the Caesars*, Loeb Classical Library, translated by JC Rolfe, 1914 CE]

Nero

Nero (37–69 CE) – the fifth emperor of Rome – was a cruel tyrant who abused his power. He became emperor in 54 CE when he was 17 years old. He had his influential mother (Julia Agrippina) killed, along with his first wife, Octavia. To fund his excessive parties and public spectacles, Nero raised money through taxes and by confiscating property.

In 64 CE, a great fire almost destroyed Rome. Some Romans believed that Nero had started the fire so that he could rebuild the city to his taste. Nero blamed the Christians for the fire and in revenge, he ordered some Christians to be fed to lions and had others painted with tar and set alight.

Source 2: Nero was the emperor of Rome from 54 to 68 CE. Historians believe his mother had Emperor Claudius killed to give Nero the throne. Nero continued on this murderous path when in power, ordering the death of his mother, his first wife, and anyone who stood in his way. He was responsible for persecuting and slaughtering Christians. [Pieter Fransz de Grebber (c. 1625–1630 CE), *Roman emperor*, oil on canvas]

Source 3: This painting depicts Christians about to be burned alive during Nero's reign as emperor. Nero blamed the great fire of Rome on the Christians and, for revenge, burned them as torches to light his gardens. [Henryk Siemiradzki (1876 CE), *Nero's torches*, oil on canvas, National Museum, Kraków, Poland]

In 65 CE, the Senate unsuccessfully plotted to remove Nero from power. In 68 CE, Nero's personal guard abandoned him and he was forced to flee Rome. Nero was so humiliated that he committed suicide.

Marcus Aurelius

Marcus Aurelius (121–180 CE) became emperor of Rome in 161 CE, when he was 40 years old; he ruled for 19 years. He was one of the most respected Roman emperors. Aurelius consistently placed the needs of the people before his own desires and passed laws that benefitted all classes of Romans. He increased the size of the army and gave more rights to women and slaves.

Marcus Aurelius' reign was marred by a famine that ravaged Rome after the Tiber River flooded, and an outbreak of plague that spread through the empire, killing thousands of people.

Learning ladder H6.7

Significant people, ideas and events

1. Identify three famous Roman emperors.
2. Describe the actions taken by Augustus as emperor.
3. Source 1: Using this source and your knowledge, explain how Nero abused his power.
4. Explain why Emperor Augustus and Emperor Marcus Aurelius are highly regarded by historians.

Chronology

1. List these events in chronological order:
   - 180 CE: Marcus Aurelius dies
   - 162 CE: The Tiber River floods Rome
   - 161 CE: Marcus Aurelius becomes emperor of Rome
   - c. 170 CE: Marcus Aurelius writes his famous book, *Meditations*
   - 166 CE: War with the Germanic tribes begins.
2. Create a timeline of the events in Question 1.
3. Use the text to construct a timeline for Emperor Nero's reign from 54 to 68 CE.
4. What do the events on the timeline you created in Question 3 reveal about Nero's character as the emperor of Rome?

HOW TO

Chronology, page 188

H6.8

What was the religion of ancient Rome?

For most of the ancient Roman period, the Romans worshipped gods that they had adopted from ancient Greece. By the 4th century, however, Rome had adopted Christianity as its official religion.

Source 1: Some of the gods and goddesses worshipped by the ancient Romans

The gods and goddesses worshipped by the ancient Romans

Like the ancient Greeks, the ancient Romans believed that nearly everything was controlled by the gods or goddesses. Every god and goddess had at least one job to do, such as watching over the crops, or helping soldiers in battle

The influence of the ancient Roman gods and goddesses can still be seen today. Most of the planets in our solar system are named after these supreme beings: Mercury, Venus, Mars, Jupiter, Saturn, Neptune, and the dwarf planet Pluto.

Worshipping the gods

Religion was a central part of everyday life for every member of ancient Roman society, from slaves to the emperor. There were hundreds of gods, and a lot of work went into making sure they all remained happy. Everyone prayed at least once a day and every home had a shrine dedicated to the gods and goddesses that were important to that family. Small statues of the deities were placed on the shrine.

Each town had a temple dedicated to a specific god or goddess. People would visit different temples, depending on what they were praying for. For example, people wanting help in their love life would visit a temple dedicated to Venus, the goddess of love.

The will of the gods

The ancient Romans believed that the gods spoke to them through animals, especially birds. Augurs were special priests who interpreted the flight of birds to determine the wishes of the gods.

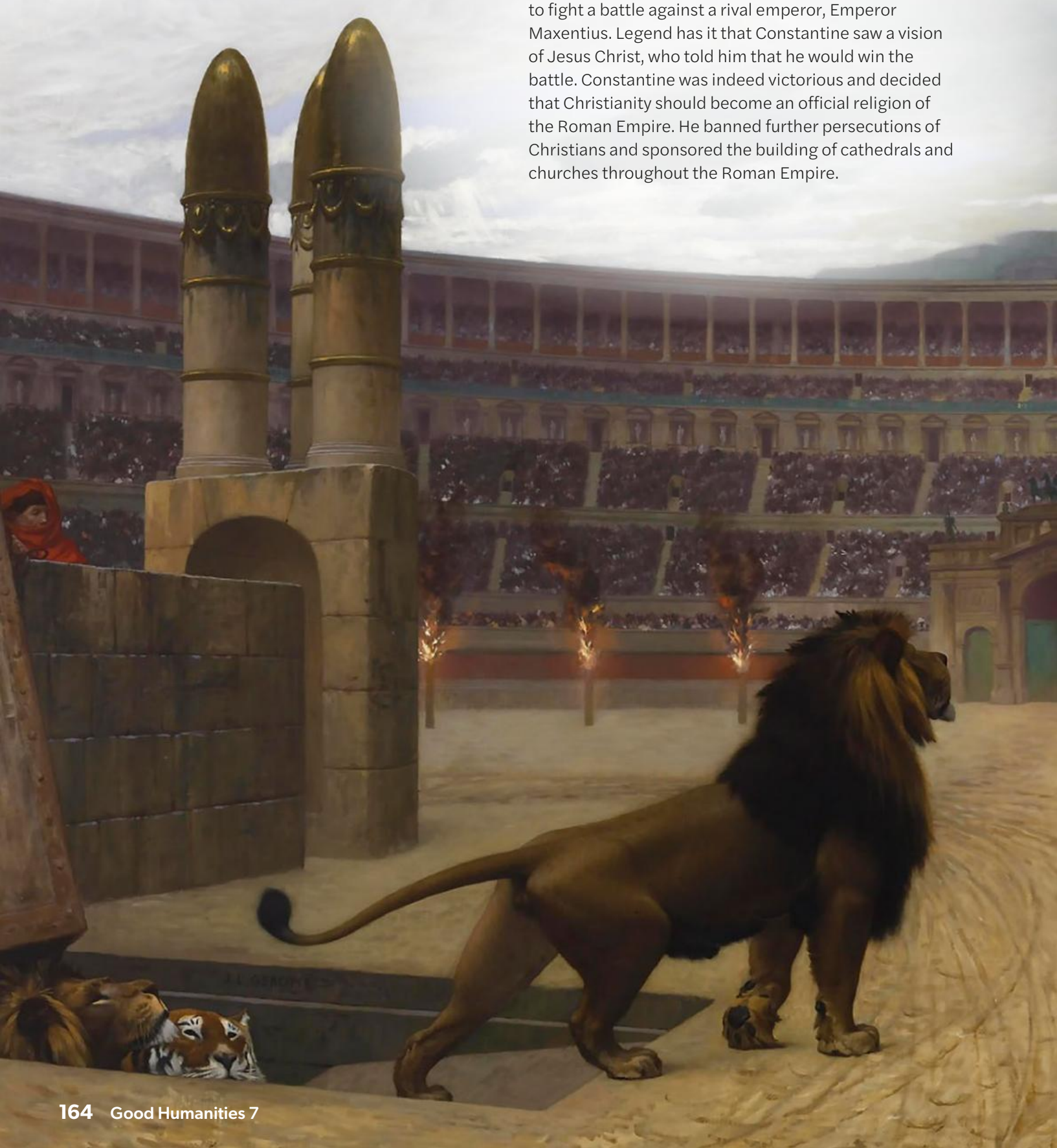
Roman military leaders also took chickens with them on campaigns to help them decide when to attack the enemy. On the day of battle, the chickens were offered grain. If they ate the grain, it was a sign that the Romans would be victorious. If the chickens refused to eat the grain, it meant that the gods did not want the Romans to fight that day.

Christianity

Christianity was born during the days of the ancient Roman empire. At that time, the emperors had assumed a godlike status and insisted that everyone in the empire pay homage to them.

Christians, however, refused to worship the emperor, arguing that there was only one God. Even when threatened with terrible punishments and death, they would not obey.

Then, in 312 CE, Emperor Constantine was due to fight a battle against a rival emperor, Emperor Maxentius. Legend has it that Constantine saw a vision of Jesus Christ, who told him that he would win the battle. Constantine was indeed victorious and decided that Christianity should become an official religion of the Roman Empire. He banned further persecutions of Christians and sponsored the building of cathedrals and churches throughout the Roman Empire.



Learning ladder H6.8

Significant people, ideas and events

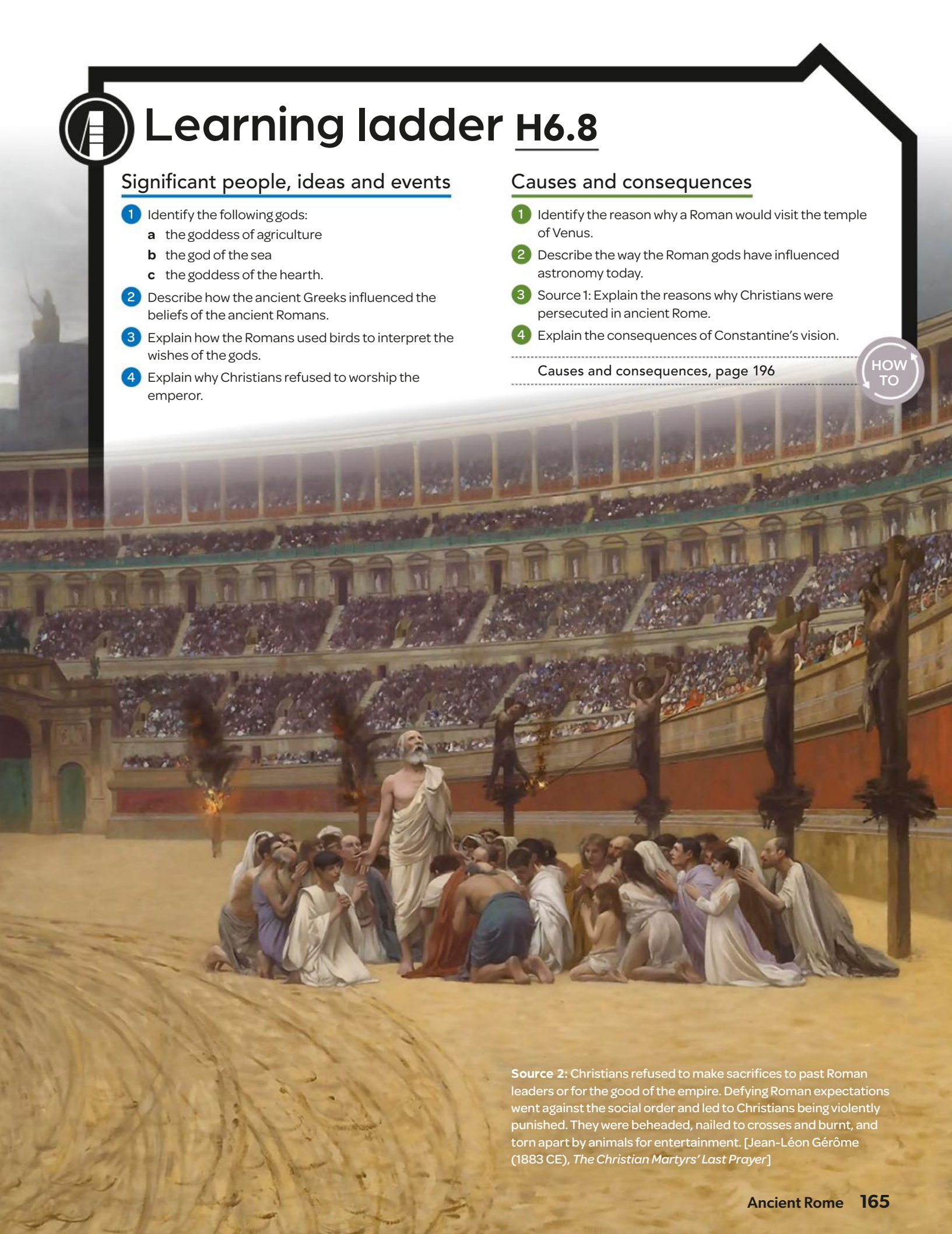
1. Identify the following gods:
   - **a** the goddess of agriculture
   - **b** the god of the sea
   - **c** the goddess of the hearth.
2. Describe how the ancient Greeks influenced the beliefs of the ancient Romans.
3. Explain how the Romans used birds to interpret the wishes of the gods.
4. Explain why Christians refused to worship the emperor.

Causes and consequences

1. Identify the reason why a Roman would visit the temple of Venus.
2. Describe the way the Roman gods have influenced astronomy today.
3. Source 1: Explain the reasons why Christians were persecuted in ancient Rome.
4. Explain the consequences of Constantine's vision.

Causes and consequences, page 196

HOW TO



Source 2: Christians refused to make sacrifices to past Roman leaders or for the good of the empire. Defying Roman expectations went against the social order and led to Christians being violently punished. They were beheaded, nailed to crosses and burnt, and torn apart by animals for entertainment. [Jean-Léon Gérôme (1883 CE), *The Christian Martyrs' Last Prayer*]

H6.9

Key individual

How did Julius Caesar rise to power?

Julius Caesar was a powerful politician and military commander. With the support of the people and the army, Caesar swept to power in 46 BCE and laid the foundations for the Roman Empire.

The early years

Julius Caesar was born in Rome into a wealthy patrician family around 100 BCE. He received a good education and followed his father into a career in politics. When his father died, Caesar became the head of his family, aged just 16. In 84 BCE he married Cornelia, the daughter of the powerful patrician Lucius Cornelius Cinna.

Caesar and his family fled Rome soon after Sulla, a general, returned to the city, initiated **civil war** and took over Rome as a dictator. After leaving Rome, Caesar joined the army, where he showed he was a very capable soldier.

Caesar's rise to the top

Caesar returned to Rome after the death of Sulla in 78 BCE. He quickly gained popularity and power through his excellent leadership and successful military campaigns. Caesar's political career advanced quickly. In 69 BCE, he was elected a ***quaestor*** (financial officer); in 63 BCE he became *pontifex maximus* (chief priest); and then he was chosen to be a *praetor* (assistant to the consuls) for the year 62 BCE. In 61–60 BCE, Caesar was the governor of the province of Spain.

Caesar returned to Rome from Spain in 60 BCE. He made a deal with two key politicians, Pompey and Crassus, whose wealth and influence enabled Caesar to be elected consul in 59 BCE. Caesar also became governor of the Roman province of Cisalpine Gaul (located in southern France).

As governor and military commander of Cisalpine Gaul, Caesar seized new lands in Gaul (France) and extended Roman territory. He was a brilliant military strategist and very popular with his men.

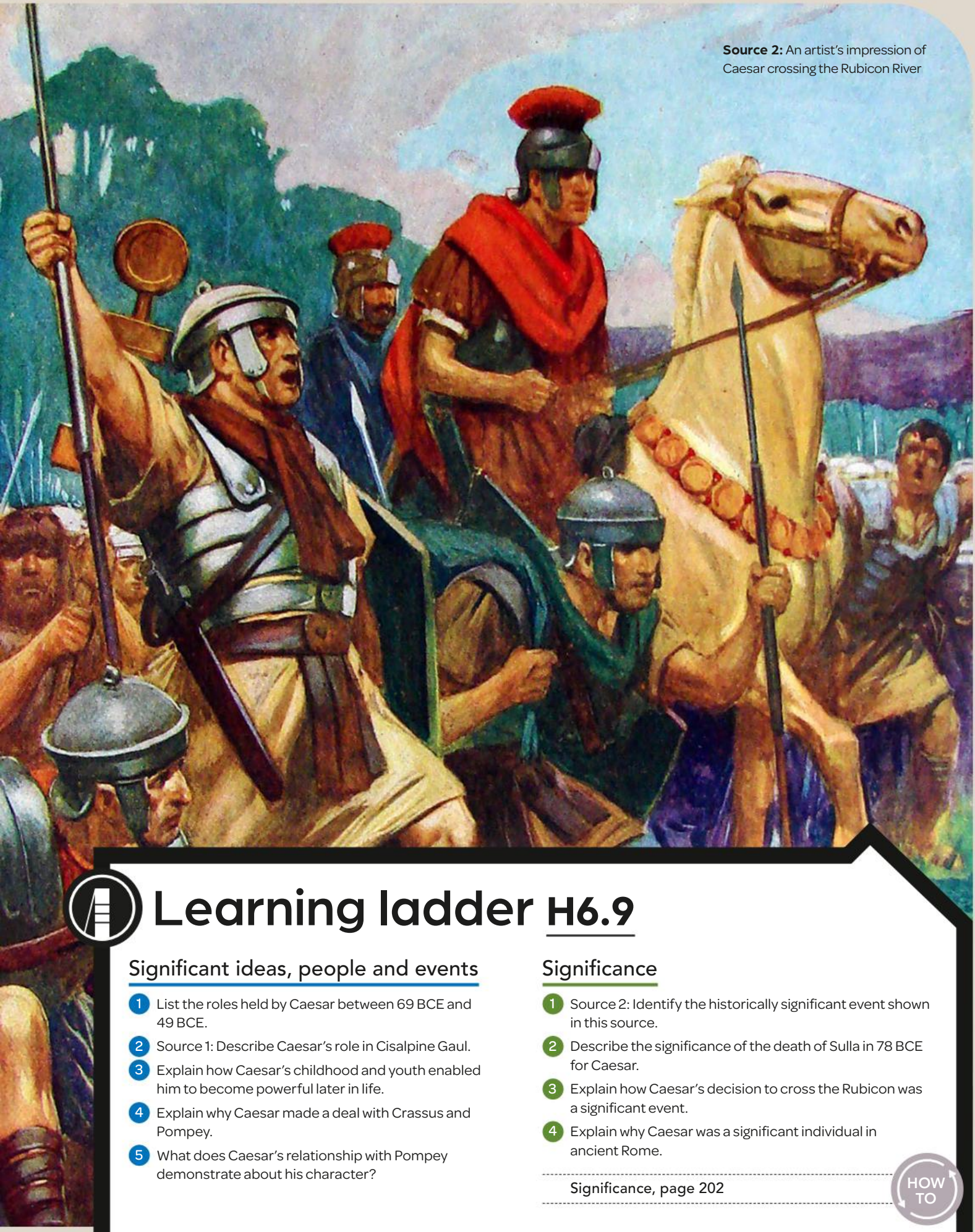
However, back in Rome, Pompey – who was now the leader of the Senate – was worried. Caesar had embarked on his campaigns in Gaul without consulting the Senate. In 49 BCE, the Senate ordered Caesar to give up his governorship of Gaul.

Instead, Caesar decided to disobey the Senate. He ordered his troops to cross the Rubicon River and proceed into Rome.

It was illegal to bring armies across the Rubicon River. This was seen as an act of war. But Caesar had chosen his path. Indeed, the phrase 'to cross the Rubicon' means to pass a point of no return.

In the civil war that followed, Caesar won control of Rome. He was became dictator in 49 BCE.

Source 1: Scene from the Roman Triumphal Arch in Orange, France. It was built c. 20 BCE, following the Romans' conquest of the Gauls.



Source 2: An artist's impression of Caesar crossing the Rubicon River

Learning ladder H6.9

Significant ideas, people and events

1. List the roles held by Caesar between 69 BCE and 49 BCE.
2. Source 1: Describe Caesar's role in Cisalpine Gaul.
3. Explain how Caesar's childhood and youth enabled him to become powerful later in life.
4. Explain why Caesar made a deal with Crassus and Pompey.
5. What does Caesar's relationship with Pompey demonstrate about his character?

Significance

1. Source 2: Identify the historically significant event shown in this source.
2. Describe the significance of the death of Sulla in 78 BCE for Caesar.
3. Explain how Caesar's decision to cross the Rubicon was a significant event.
4. Explain why Caesar was a significant individual in ancient Rome.

Significance, page 202

HOW TO

Why was Caesar assassinated?

Julius Caesar was stabbed to death by 29 senators on 15 March 44 BCE. Why did the senators hate Caesar so much?

Caesar's reforms

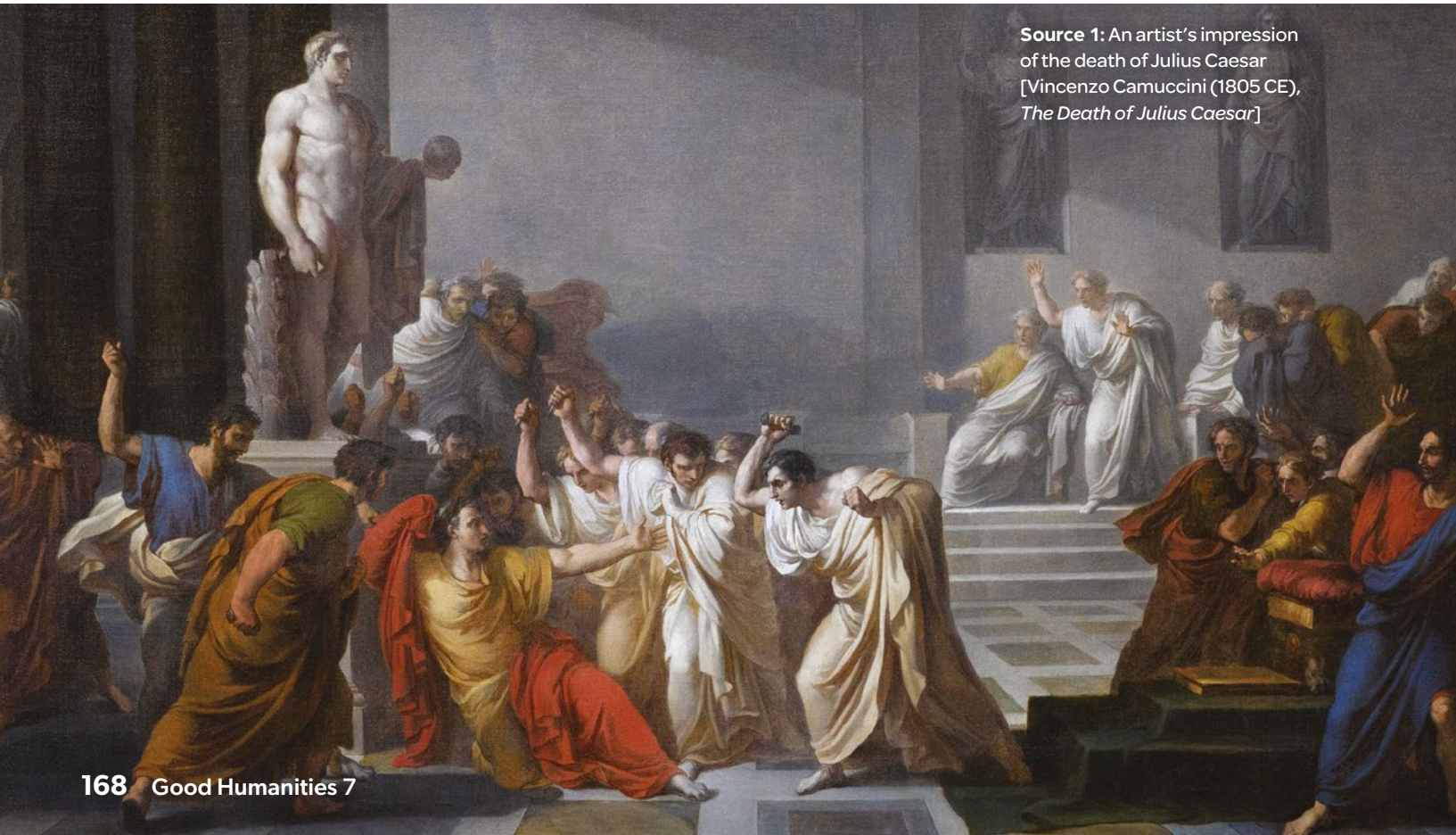
Caesar's victory had secured his rule of Rome, but years of civil war had left the republic in disarray. Many people had died or lost their businesses and homes, and poverty was widespread. So Caesar decided to make a series of reforms.

He gave land to soldiers who had fought for him during the war and also to some of the poorest plebeians in Rome. This led to an increase in food being grown and ensured that soldiers and plebeians supported Caesar. He also embarked on a huge public works program to rebuild and improve the city. This provided work for poor plebeians and freedmen. Furthermore, Caesar increased the number of senators from 600 to 900 and expanded the number of jobs in the civil service. This was welcomed by the patricians and equites, who now had more opportunities to pursue political careers.

Caesar becomes dictator for life

Caesar used his position as dictator to ensure he was elected consul. Usually, a dictator was appointed by the consuls in a time of crisis. It was a temporary position intended to last no longer than six months. But in 48 BCE, after Caesar won a great victory at the Battle of Pharsalus, the Senate declared him dictator for a year. Then, in 46 BCE, the Senate decided to make him dictator for 10 years. But before this time was up, the Senate declared him 'dictator in perpetuum' (dictator for life) in 44 BCE.

In addition, the Senate heaped further honours on Caesar. He was declared 'sacrosanct' (which made his body holy); he was allowed to wear a laurel crown on religious occasions; and coins were stamped with his face on them. Caesar appeared to be more like a king than a leader of the republic.



Source 1: An artist's impression of the death of Julius Caesar [Vincenzo Camuccini (1805 CE), *The Death of Julius Caesar*]

Caesar's assassination

In early 44 BCE, a group of senators decided to **assassinate** Caesar. The leaders of the conspiracy included Gaius Cassius Longinus and Marcus Junius Brutus, both long-time enemies of Caesar who had fought against him in the civil war, and Decimus Brutus, a member of Caesar's inner circle. On 15 March, the conspirators called a meeting with Caesar at the Theatre of Pompey. When Caesar arrived, the senators approached him, pretending to greet him. But then they began to stab him! Caesar died aged 56.

Source 2: Coin minted in 43 BCE. It shows Julius Caesar's portrait and the words 'CAESAR DICT PERP PONT MAX' (Caesar, dictator forever and chief priest) on the obverse side. The image of a living person had never been featured on Roman coins before. The obverse side was usually reserved for images of gods or former kings.

Why did the senators decide to kill Caesar?

Historians are divided over why the senators assassinated Caesar. After all, the Senate had only just voted him dictator for life. Some historians think that the conspirators believed Caesar would abolish the republic and declare himself king. Other historians argue that the conspirators were just jealous of Caesar's power and wanted to rule themselves.

> [Caesar] abused his power and was justly cut off ... [He] obtained excessive honours, such as the consulship every year, the dictatorship for life, and the censorship, but also the title of emperor and the surname of 'Father of his Country', besides having his statue amongst the kings ... [Furthermore], he said, 'The republic is nothing but a name, without substance or reality ... Men ought to ... look upon what I say as a law'.

Source 3: Excerpt from Gaius Suetonius Tranquillus (c. 121 CE), *The Lives of the Twelve Caesars*. Suetonius was an ancient Roman historian.

> At first a few men started the conspiracy, but afterwards many took part, more than are remembered to have taken part in any earlier plot against a commander ... Among those who had the most influence were: Decimus Brutus, a particular friend of Caesar, Gaius Cassius, and Marcus Brutus ... There were various reasons which affected each and all of them and impelled them to lay hands on the man. Some of them had hopes of becoming leaders themselves in his place if he were put out of the way; others were angered over what had happened to them in the war, embittered over the loss of their relatives, property or offices of state.

Source 4: Nicholas of Damascus (c. 14 CE), *Life of Augustus*. Nicholas of Damascus was a Greek historian who was born in Damascus, which was then part of the Roman Empire.

Learning ladder H6.10

Significant people, ideas and events

1. Source 2: Identify the individual shown in the source.
2. Source 1: Describe the assassination of Julius Caesar.
3. Explain how Caesar tried to rebuild Rome after the civil war.
4. Source 2: Explain what this source demonstrates about Caesar's power.
5. Evaluate Caesar's leadership during his period as dictator.

Interpretations

1. Identify what it is about Caesar's death that is debated by historians.
2. Source 4: Describe the reasons given for Caesar's assassination in this source.
3. Sources 2 and 3: Explain how Source 2 could be used as evidence to support Source 3's interpretation of Caesar's death.
4. Sources 3 and 4: Compare the reasons for Caesar's assassination.

HOW TO Interpretations, page 204

Site study

What was the Colosseum?

The Colosseum was built during the time of the Roman Empire to entertain the ancient Romans and to gain their support for the emperors who hosted the events.

The building

The Colosseum is a massive free-standing stone stadium located east of the Palatine Hill in the city of Rome. Work began on the immense structure sometime between 70 CE and 72 CE.

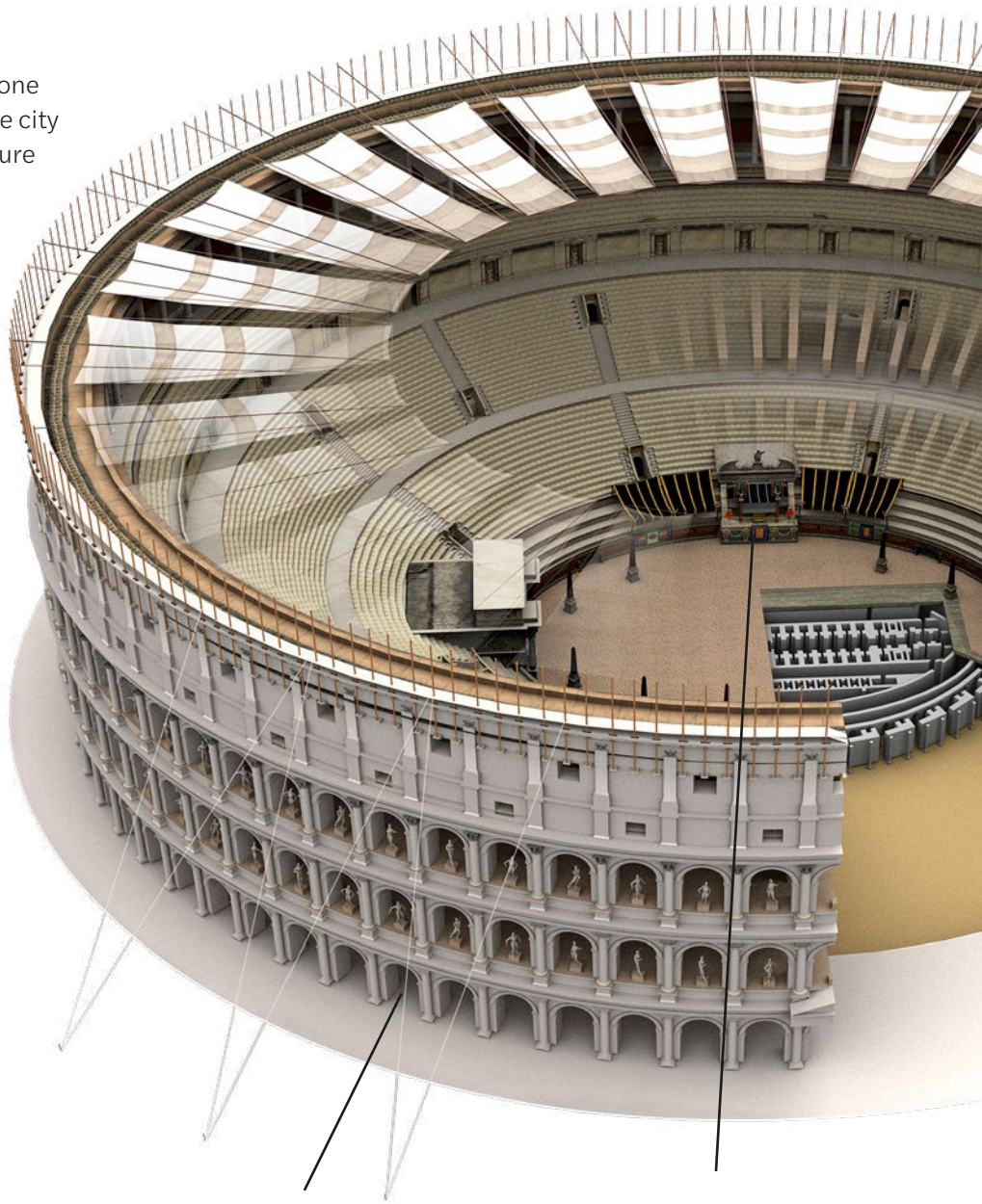
It had been commissioned by Emperor Vespasian. When the Colosseum was finally finished in 80 CE, it was opened by Vespasian's son Titus with 100 days of games for the Roman people to enjoy.

Much of the original stadium has fallen into disrepair, caused by weathering, natural disasters, theft of stone blocks and vandalism.

The events

The Colosseum hosted bloody battles between gladiators, and between gladiators and wild animals. Many gladiators were slaves or criminals, but some fighters volunteered because they wanted fame and fortune. Some emperors even showed off their own combat skills in the arena to gain the support of the people.

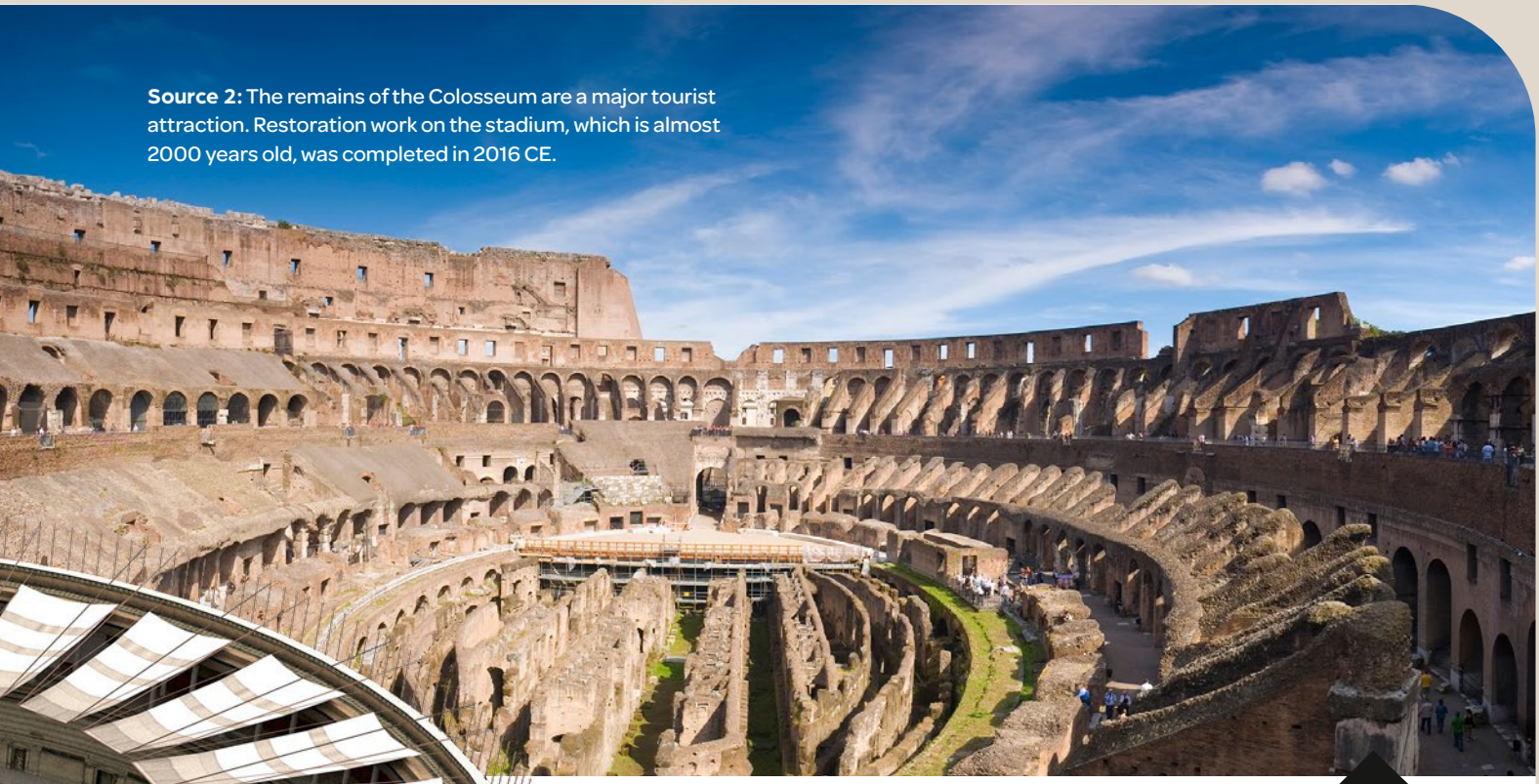
The arena was often elaborately decorated. Sometimes, it was made to look like a natural landscape, where the gladiators hunted animals. Other times, the arena was flooded and mock sea battles were held. Crocodiles were released to grab those who fell overboard.



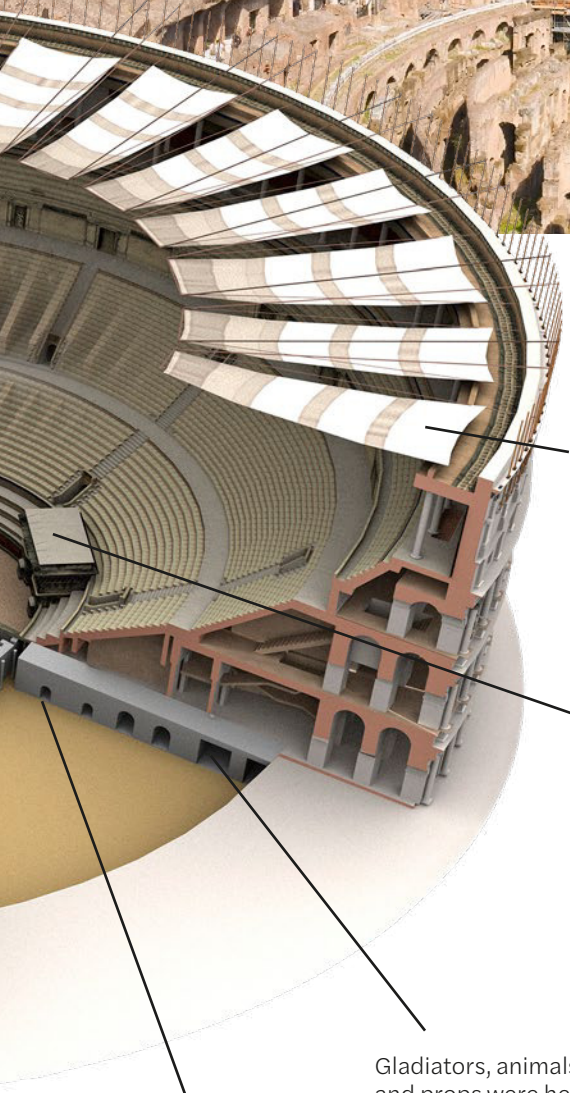
Source 1: This cutaway illustration shows how spectators accessed the Colosseum via 80 entrances. Gladiators, soldiers and animals were housed in rooms, cells and corridors beneath the arena.

There were 76 public entrances for plebeians, and four entrances for patricians, senators and the emperor. The Colosseum could accommodate 50 000 spectators.

The emperor had his own private box. Other important people sat in the lowest tier closest to the arena. Women, poor men and slaves sat or stood in the top tier.



Source 2: The remains of the Colosseum are a major tourist attraction. Restoration work on the stadium, which is almost 2000 years old, was completed in 2016 CE.



Learning ladder H6.11

Significant people, ideas and events

1. Identify the emperor who began building the Colosseum.
2. Describe the events that were held at the Colosseum.
3. Source 1: Explain how animals were brought into the arena.
4. Explain why there were separate entrances and seats in the Colosseum for different classes of Romans.
5. Source 1: Why do you think it was important for the emperor to be seen during events at the Colosseum?

Significance

1. Source 2: Identify a reason why this site is considered historically significant today.
2. Sources 1 and 2: Describe the differences between the two sources.
3. Source 1: Explain how the Colosseum was a significant venue in ancient Rome.
4. Source 2: Explain why the Colosseum is a significant site today.
5. Source 2: Discuss whether the Colosseum should be a tourist site or a protected archaeological site.

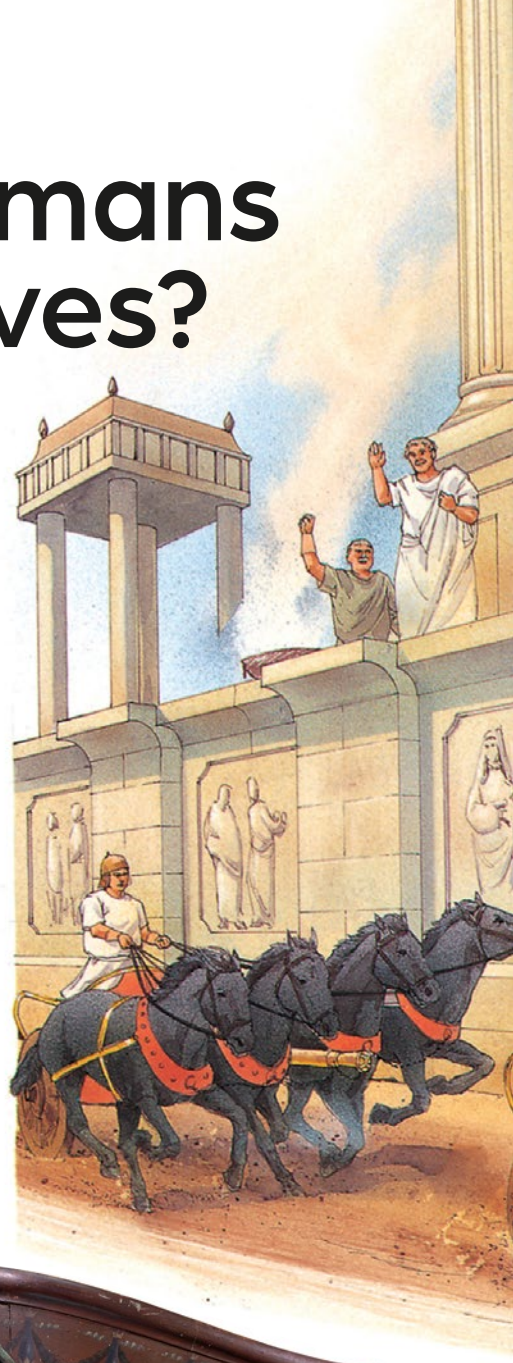
HOW TO

Significance, page 202

H6.12

How did ancient Romans entertain themselves?

Life was tough for ordinary Romans. To prevent the people from rebelling, members of the ruling class provided entertainment and free grain. Large arenas hosted chariot races and bloody battles between gladiators.



Public entertainment

The amount of free entertainment provided by the patricians varied depending on the era, but at the end of the 1st century BCE, there was free entertainment for nearly half the year. The free entertainment had one purpose: to make sure the plebeians did not become restless and rebel against the patricians. Entertainment also improved the popularity of the rulers who hosted the events.

The ancient Roman writer Juvenal (c. 100 CE) said that Romans were kept happy and peaceful by two things: *panem et circenses* (bread and circuses). Juvenal was referring to the provision of free wheat to the plebeians as well as to the chariot races that were held on special racetracks called circuses.

> The public has long since cast off its cares [about government]; the people [who] once bestowed commands, consulships, legions and all else, now meddles no more and longs eagerly for just two things: Bread and Circuses!
>
> **Source 1:** Juvenal (c. 100 CE), *The Sattires of Juvenal*

Chariot races

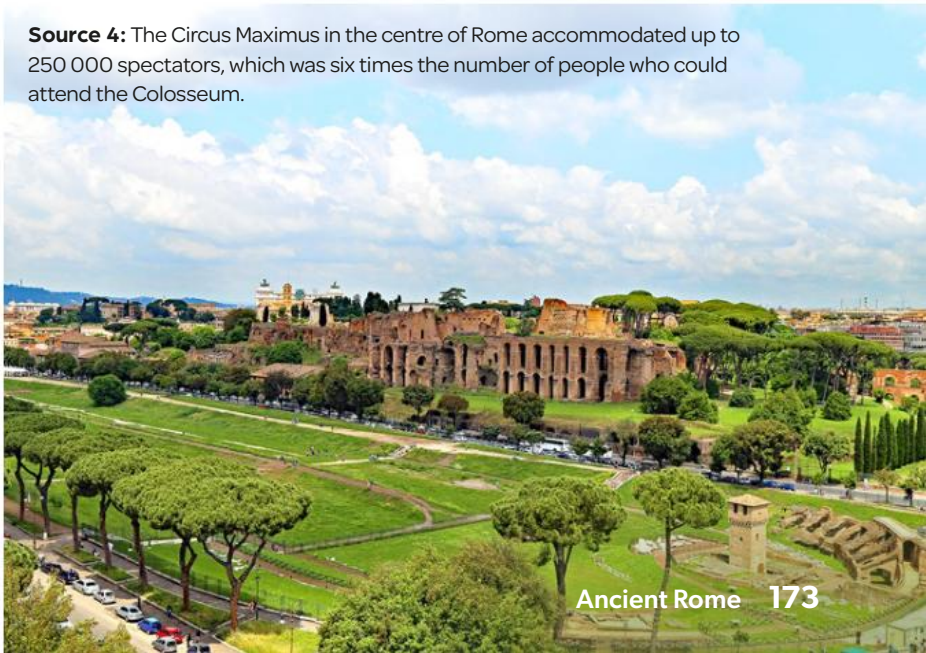
There was a special arena in Rome for chariot races. It was called the Circus Maximus and it could seat around 250 000 people. The Circus Maximus was the largest race track in Rome. It was a long rectangular shape with rounded corners. Down the middle of the circus was a long, thin barrier called the *spina*. At each end of the *spina* was a rounded turning post called the *meta*.

Source 2: Chariot racing at the Circus Maximus was a very popular form of entertainment in ancient Rome. This is a reconstruction of a Roman chariot (using original metallic parts) made in c. 2003 CE.

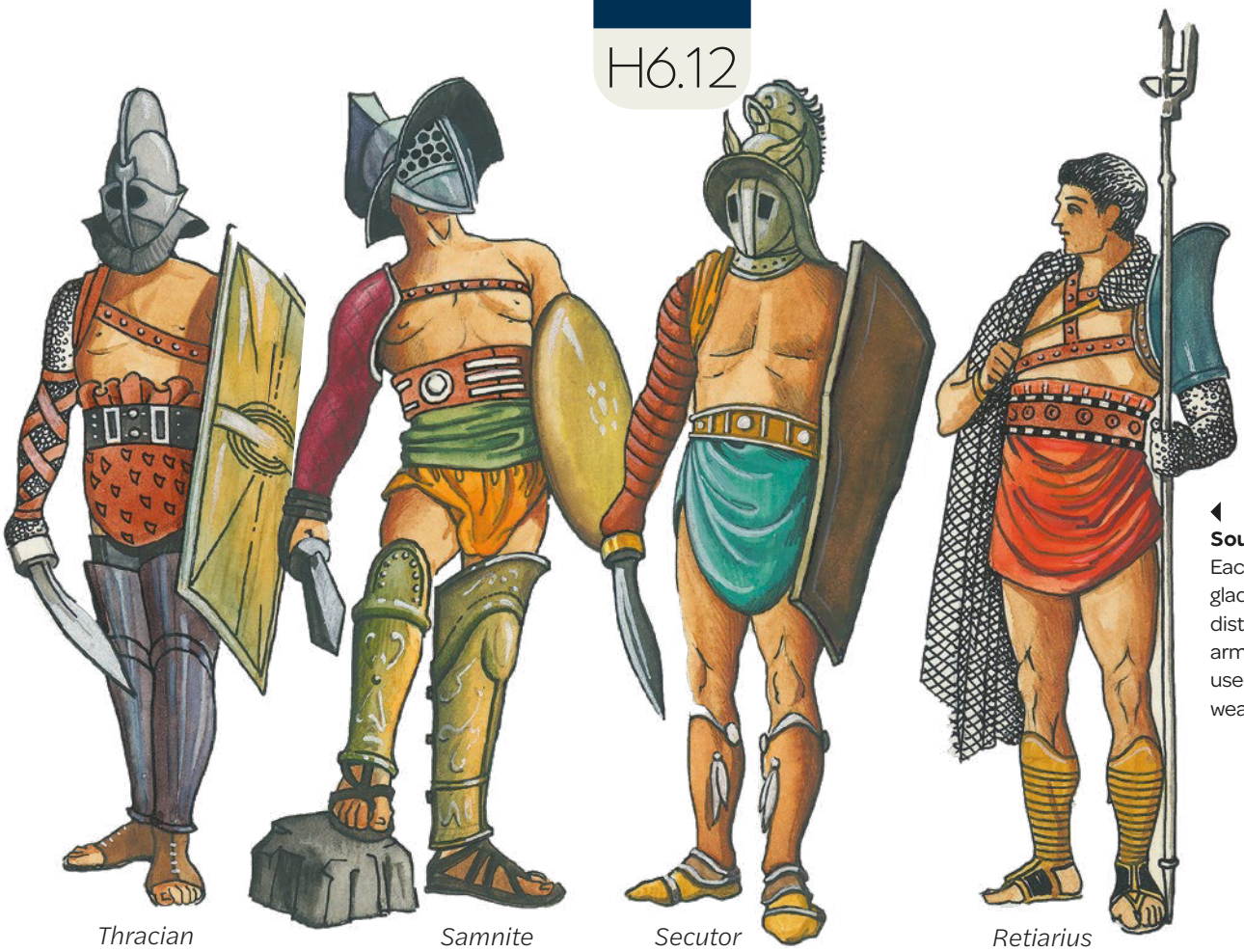
Source 3: Most chariot drivers were slaves. With few rules, races could be decided by dirty tactics such as breaking wheels and ramming chariots. Chariots often crashed making the tight turn at the *meta*. Chariot drivers did not generally live long, as many were injured or killed in competition. The winners could become famous.

Each chariot was drawn by four horses and had one driver. Up to 12 chariots competed in each race. One race consisted of seven laps of the track. Trumpets sounded to start a race. There were few rules, and the chariots hurtled around the track at high speed. Drivers could ram other chariots, and many crashes occurred. Death and injury were common in chariot races but that was part of the entertainment.

Families arrived early to get the best positions around the track. At the circus, men and women could sit together. Marble front-row seats were reserved for senators and the emperor had his own imperial box.



Source 4: The Circus Maximus in the centre of Rome accommodated up to 250 000 spectators, which was six times the number of people who could attend the Colosseum.



Source 5: Each type of gladiator wore distinctive armour and used different weapons.

Gladiators

A very popular form of public entertainment in ancient Rome was watching gladiators fight to the death in huge arenas such as the Colosseum. Gladiators were first introduced to Rome in 264 BCE. They were generally slaves, criminals or prisoners.

Tens of thousands of Romans went to the Colosseum to watch gladiators fight and kill each other. The emperor is said to have decided whether a gladiator would live or die by signalling with a thumb up or thumb down, although this is disputed by many historians. Successful gladiators were admired like sporting stars today and, if they were lucky, they were granted their freedom.

Types of gladiators

To add interest to fights, there were many different types of gladiators:

- An ***andabata*** wore a helmet without eyeholes. They charged blindly at each other for the crowd's amusement.
- A ***bestiarius*** fought beasts using a spear and a knife. These gladiators fought many exotic, imported animals such as lions and tigers.
- A ***murmillo*** wore a helmet and armguards, and carried a short sword and shield. *Murmillos* often fought *thracians*.

- A ***retiarius*** wore only an armguard for protection and carried a trident (a spear with three prongs), a dagger, and a net to catch their opponent's weapon.
- A ***samnite*** wore a high-crested helmet and used a short sword and an oblong shield. Their right arm and left leg were protected with leather strapping, and a greave (leg armour) was worn on the left leg.
- A ***secutor*** used the same armour and weapons as a *murmillo*. A *secutor's* helmet had only two small eyeholes to prevent a *retiarius'* trident from piercing their face.
- A ***thracian*** used a shield and a curved sword known as a *sica*.

Spartacus

Spartacus served in the Roman army before he was captured and sold into slavery. He attended a gladiatorial training school near Capua (in modern-day southern Italy), where he trained as a *murmillo* gladiator and survived several gladiatorial contests.

In 73 BCE, Spartacus escaped to Mount Vesuvius where, over the next two years, about 90 000 other runaway slaves joined him. As one of the leaders of the slave army, Spartacus defeated several Roman legions. He died on the battlefield in 71 BCE. Spartacus' followers who survived the final battle were crucified, and their bodies were displayed as a warning to anyone who wanted to challenge the Roman Empire.

Source 6: The title of this painting (*Pollice verso*) refers to the Latin term for the thumbs up or thumbs down hand gesture that was used to decide the fate of a fallen gladiator. In this painting, the gesture is given by the spectators to the victorious *murmillo* who has just defeated a *retiarius* at the Colosseum. We assume today that thumbs up meant the fallen gladiator lived and thumbs down meant he died. However, thumbs down may have meant 'swords down', which meant the losing gladiator would live. The exact meanings of the gestures in this context are unknown. [Jean-Léon Gérôme (1872 CE), *Pollice verso*, oil on canvas, 149.2 × 96.5 cm, Phoenix Art Museum, Phoenix, United States]

Learning ladder H6.12

Significant people, ideas and events

1. Source 2: What was this object used for? Where could you have seen this activity in ancient Rome?
2. Why was so much free public entertainment provided for the ancient Romans?
3. Which people became gladiators?
4. Identify the brutal features of Roman sport. Are there any similarities between ancient Roman and modern-day sport?
5. Source 1: Analyse what Juvenal was referring to when he suggested that Romans cared for just two things: bread and circuses. How had this changed over time?

Sources

1. Source 6: Is this a primary or secondary source? How do you know?
2. Source 5: Describe the differences between the armour and weapons used by each type of gladiator.
3. Sources 3 and 4: Using these sources and your knowledge of chariot racing, describe the shape and features of the Circus Maximus.
4. Read this account of Spartacus, written by the ancient Roman historian Appian (95–165 CE):
   '[Spartacus] took refuge on Mount Vesuvius, where he allowed many runaway domestic slaves and some free farm hands to join him … he plundered the nearby areas, and because he divided the spoils in equal shares his numbers quickly swelled.'
   a Who joined Spartacus' army?
   b Why was Spartacus so successful in attracting recruits?
5. Source 6: Why is the *murmillo* looking to the crowd? How are the spectators responding? What does the signal from the crowd mean? Why is there confusion over what the signal meant?

HOW TO Sources, page 191

H6.13

What happened at Pompeii?

In just 24 hours, the thriving Roman city of Pompeii disappeared under volcanic ash spewed from Mount Vesuvius. Nearly 1700 years later, archaeologists uncovered the ancient city, which had been frozen in time.

Where is Pompeii?

Pompeii is located on the west coast of the Apennine Peninsula, around 23 kilometres south-east of modern-day Naples. The city is only 9 kilometres from the volcano, Mount Vesuvius.

Ancient Pompeii

Pompeii was a resort town that attracted ancient Rome's wealthiest citizens. Grand homes lined the city's paved streets. People enjoyed going to cafes, taverns and bathhouses, and watching performances in the local arena. Mount Vesuvius had not erupted in living memory, so people did not see it as a threat.

What happened to Pompeii?

On 24 August in 79 CE, Mount Vesuvius erupted and spewed ash and rock into the air. Following the initial blast came a blisteringly hot avalanche of ash, rock and gas (called a pyroclastic flow) travelling at more than 100 kilometres per hour. This pyroclastic flow destroyed everying in its path. The volanic debris poured down on Pompeii, destroying buildings and killing people. Pompeii was destroyed and was left covered in a thick, 3-metre blanket of ash.

Discovering an ancient city

In 1748 CE, explorers looking for ancient artefacts discovered what was left of the city of Pompeii. The volcanic ash that had buried Pompeii preserved the city almost exactly as it had been nearly 1700 years earlier.

Source 1: Pierre-Henri de Valenciennes (1813 CE), *Eruption of Vesuvius*, oil on canvas

The buildings were still intact and everyday objects littered the streets. Archaeologists even uncovered loaves of bread and jars of preserved fruit. Skeletons of the people lay where they had fallen. Pompeii had been frozen in time, which has allowed us to learn a lot about everyday life in ancient times.

The ancient Roman author Pliny the Younger (c. 61–113 CE) watched Mount Vesuvius erupt from across the bay. He wrote an account of what he saw in a letter to the Roman historian and politician, Cornelius Tacitus:

Ashes were already falling on the ships, hotter and thicker the nearer they approached; and even pumice and other stones, black and scorched, and cracked by the fire. There had been a sudden retreat by the sea, and the debris from the mountain made the shore unapproachable ... Meanwhile, from many points of Mount Vesuvius, vast sheets of flame and tall columns of fire were blazing, the flashes and brightness of which were heightened by the darkness of the night ... for the walls nodded under the repeated and tremendous shocks, and seems, as though dislodged from their foundations, to be swaying to and fro, first in one direction and then in another. On the other hand, in the open air, there was the fall of the pumice stones (though they were light and burnt out) to be apprehended.

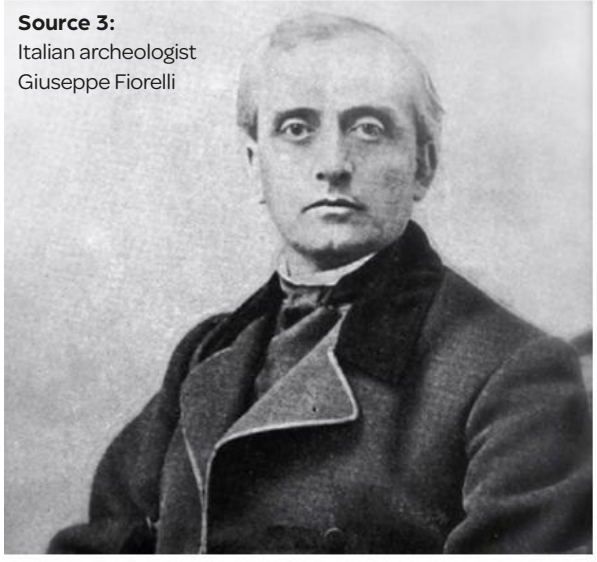
Source 2: Letter from Pliny the Younger to Tacitus (79 CE) [Extract included in Schneer (1907 CE), *The History of Vesuvius from AD 79 to AD 1907*].

What was the eruption of Vesuvius like for the people of Pompeii?

Many people had time to flee; those who remained in Pompeii and the nearby town of Herculaneum were killed. By the end of the eruption, 1500 people in these two towns had died.

We have a glimpse of the final moments of the people in Pompeii thanks to the work of the Italian archaeologist Giuseppe Fiorelli, who directed excavations at Pompeii in the 19th century.

Fiorelli realised that the spaces he found in the hardened ash at Pompeii were the cavities left by the bodies of the victims, which had decomposed over time and left a space. He developed the use of plaster casts to recreate the shapes of bodies, both human and animal (Sources 5 and 6).

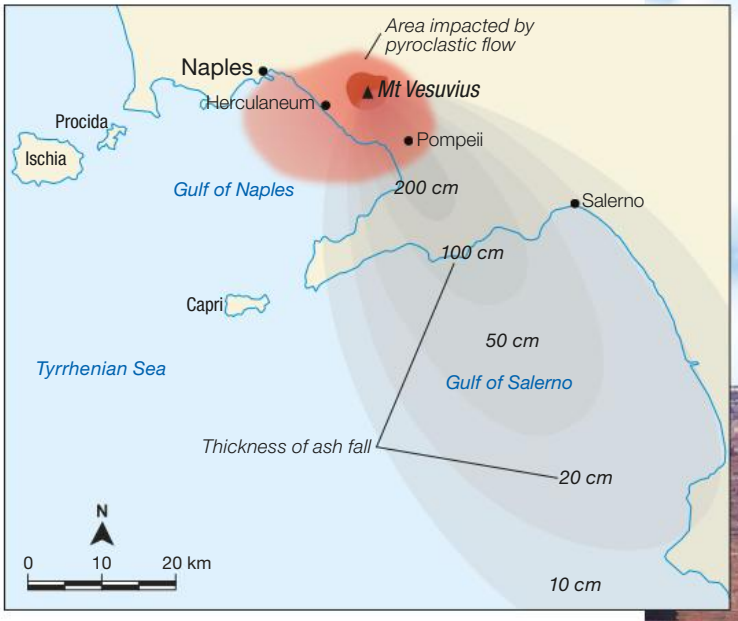


Source 3: Italian archeologist Giuseppe Fiorelli

When a cavity was discovered at the excavation site, plaster of Paris was poured in the space and left to harden. The hardened ash around the plaster was then carefully removed, revealing a plaster replica of that person or animal at the moment of their death.

Source 5: This plaster cast of a dog was made by pumping plaster of Paris into a cavity in the hardened ash at Pompeii.

The areas of the west coast of the Apennine Peninsula affected by the eruption of Mount Vesuvius



Source 4: A large area was impacted by the pyroclastic flow and the ash fall from the eruption of Mount Vesuvius in 79 CE.

Source: Matilda Education Australia

Source 6: These plaster casts of Pompeii victims show them as they were in their final moments.

Source 7: The ancient town of Pompeii sits in the shadow of nearby Mount Vesuvius. A thick layer of ash preserved the town for nearly 1700 years. Today, the site is one of Italy's major tourist attractions.

Learning ladder H6.13

Significant people, ideas and events

1. Source 4: Describe the direction of the pyroclastic flow and the ash fall from Mount Vesuvius. Hint: They are not the same!
2. Source 2 (page 177): Using quotes from the source, show how Pliny the Younger describes the eruption of Mount Vesuvius in 79 CE.
3. What impact did the eruption of Mount Vesuvius have on the residents of Pompeii?
4. What have historians learnt about everyday life in ancient Roman times from the ruins of Pompeii?
5. Could the leaders of Pompeii have protected their people from volcanic eruptions? What do you think they learned from the eruption and its impact?

Sources

1. Source 6: When was this source created? How was it made?
2. Sources 1 and 2 (pages 176–7): List the words from the primary source (Source 2) that may have helped Pierre-Henri de Valenciennes create the secondary source (Source 1).
3. Source 7: What evidence suggests that Pompeii was a wealthy and prosperous town?
4. Source 2 (page 177): Why is Pliny the Younger's account of the eruption of Mount Vesuvius useful to historians?
5. Source 6: Based on the information in this section, is it more likely that these people were wealthy or poor? Provide evidence to support your answer.

Sources, page 191

HOW TO

H6.14

Who did the ancient Romans trade with?

As the Roman Empire grew, it needed more food for its population and more metals to make coins and provide weapons for its army. To meet these needs, the Romans set up a vast trading network across the ancient world.

The ancient Romans traded a variety of goods with people who lived inside and outside the Roman Empire (Source 2). Through trade, the Romans came into contact with people from many different societies.

Ancient Rome's growing population required an increasing amount of food. Food products – grain, olive oil, wine, salt, fish, meat – were traded in huge quantities. For example, in the 1st century BCE, Rome imported grain from Egypt and northern Africa.

The growing empire also needed metals, such as gold, silver and copper, to make coins and weapons. Gold and silver were imported from Spain and Greece, and copper was shipped from Spain and Cyprus.

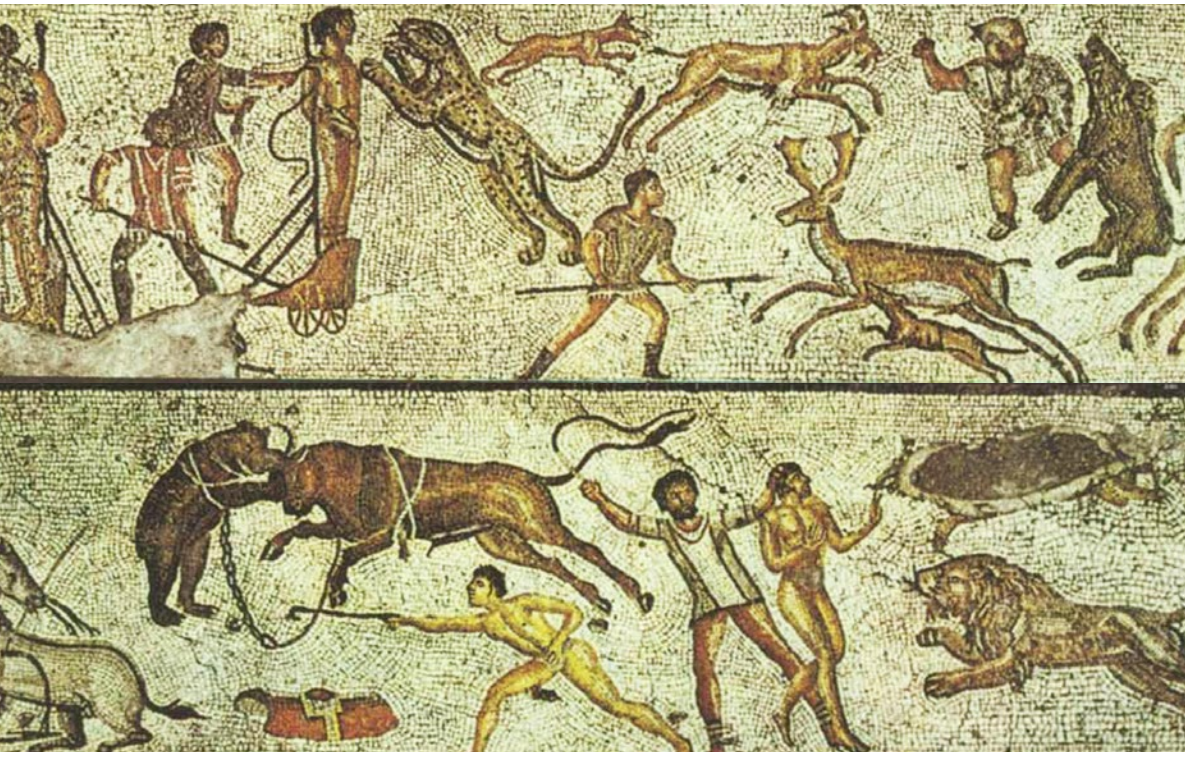
Marble was a popular material in ancient Rome and it adorned private homes and public buildings, including temples. This coveted stone was imported from Greece and northern Africa.

Exotic goods

At its height, in the 2nd century CE, the Roman Empire included parts of northern Africa , Western Europe and the Middle East. Goods from these areas were traded all over the empire, including exotic animals and slaves. Elephants, tigers, bears and lions became features in gladiatorial battles, while slaves became the gladiators. Elephants were also used by the Roman army to carry soldiers and to charge and trample opposing soldiers.

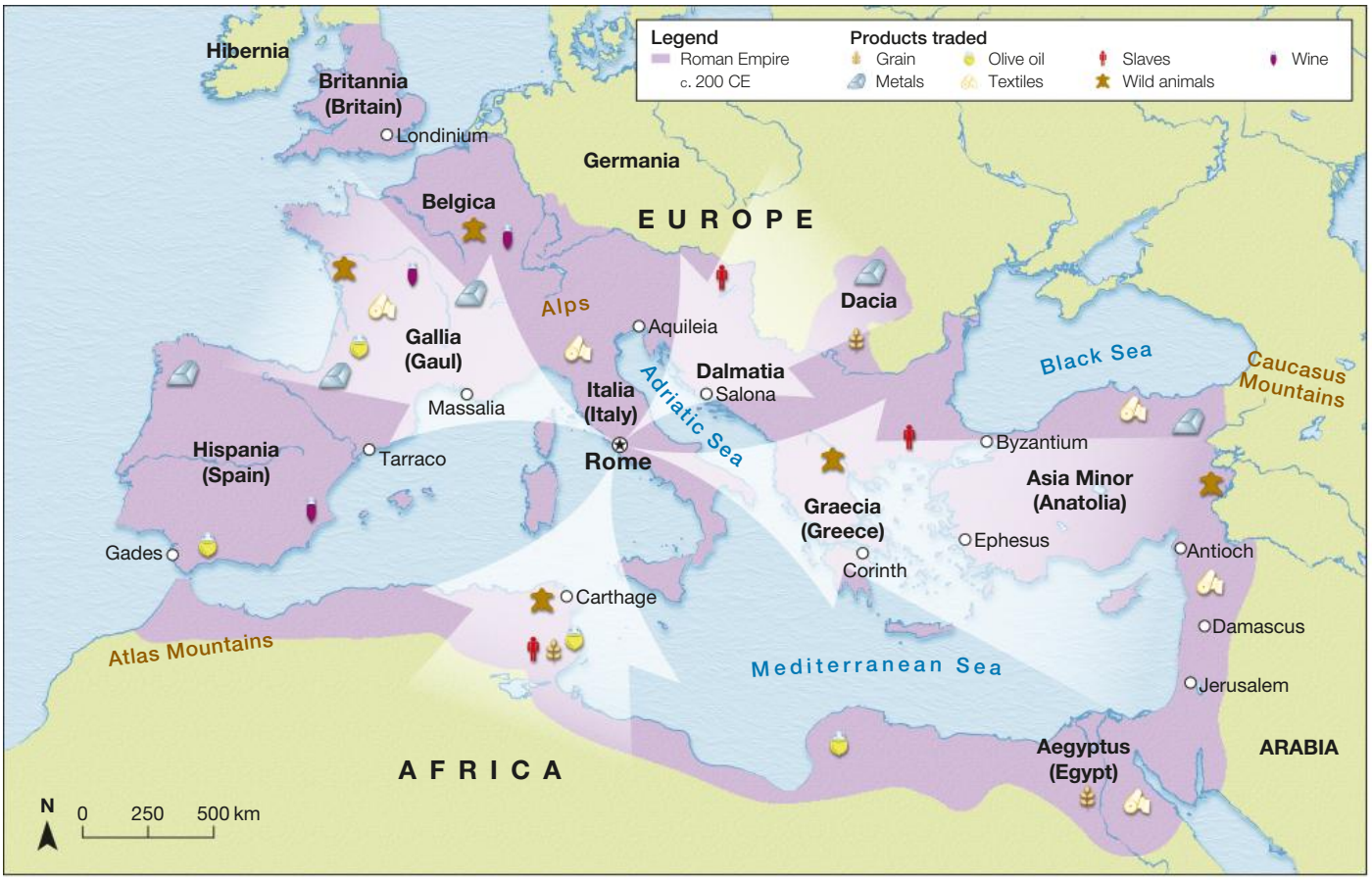
The most sought after import was silk from China, which was traded along the Silk Road. Chinese people were known as the Seres or 'silk people'. Ancient Romans did not know how silk was made and assumed it grew on trees.

Pepper and other spices from India were also highly valued exotic products, along with peacocks, jewels and textiles.



Source 1: Thousands of exotic wild animals, such as elephants, lions, bears, panthers and leopards, were imported to the city of Rome so these animals could fight gladiators in the Colosseum. [Panel from the *Zlitern Mosaic*, (c. 150 CE), Libya]

The Roman Empire



Source: Matilda Education Australia

▲ **Source 2:** There was a vast network of trade routes across the Roman Empire, aided by Rome's control of the Mediterranean Sea.

All nations in the west and south being subdued, and all to the north between the Rhine and Danube, as well as all to the east between the Cyrus and Euphrates [Rivers], the other countries, which had not fallen under the authority of Rome, reverenced a people who had conquered so many nations. The Scythians and Sarmatians [Central Asians] sent ambassadors to us, desiring our friendship. The Seres, too, and the Indians who live under the very Sun, coming with jewels and pearls, and bringing also elephants among their presents, thought they proved their respect to [Emperor] Augustus by nothing so much as the length of their journey, which they had taken four years to complete.

Source 3: Excerpt written by Publius Annius Florus, a Roman historian [Publius Annius Florus (c. 130 CE), *The Epitome of the Histories of Titus Livy*]

Learning ladder H6.14

Impacts and legacies

1. Source 1: Identify three exotic animals in this source.
2. Source 2: Describe where the Romans got their exotic animals from.
3. Explain how trade took place between Rome and China.
4. Source 2: Explain why the Romans were able to conduct trade over such vast distances.

Causes and consequences

1. Why did Rome need to import food?
2. Describe what happened to trade as the Roman Empire stretched into new regions.
3. Source 2: Explain the consequences of the empire's expansion on the slave trade.
4. Source 3: Explain why people outside the empire travelled to Rome bearing gifts.

HOW TO

Causes and consequences, page 196

H6.15

How did the ancient Romans fight?

Disciplined training and clever military tactics enabled the Roman army to conquer a vast amount of territory throughout the ancient world.

The importance of the military

Military power, brutality and violence were hallmarks of Roman society. Roman leaders were admired more for their military conquests than for their wise rule. If a Roman general won a battle, he received a triumph, and all the people of Rome would turn out to watch and applaud him. Great stone arches were erected to celebrate victories all over the empire.

Violence and cruelty were encouraged and Roman armies wreaked terror wherever they went. It was not enough for the Romans to subdue their enemies. They made sure that enemy forces suffered immensely and that no one – man, woman, child or even animal – was spared.

Source 1: Legionaries in battle. The reserves wait at the back while the cavalry attacks from the side.

1. Leaders wore tall plumes on their helmets to show their rank, and so their soldiers could see them.
2. Upper-body armour protected soldiers' chests. Leather belts held their sword and dagger. The short sword was used in close battle for stabbing the enemy.
3. About 120 cavalry soldiers were part of a **legion**. They were often landowners who were wealthy enough to own a horse. Cavalry soldiers held a long spear for thrusting and carried smaller javelins for throwing.
4. The signifer held the **century's standard** or *signum* as they marched into battle. The role of signifer was a dangerous job; he had no weapon and only a small shield known as a buckler to defend himself.

Source 2: Soldiers stood side by side and overlapped their shields, forming a protective barrier. This is called the *testudo* formation: testudo is the Latin word for 'tortoise'.

When Scipio [a Roman general] thought that a sufficient number of troops had entered he sent most of them, as is the Roman custom, against the inhabitants of the city with orders to kill all they encountered and to spare no one, and not to start pillaging until the signal was given. They do this, I think, to inspire terror, so that when towns are taken by the Romans one may often see not only the corpses of human beings, but dogs cut in half, and the dismembered limbs of other animals ...

Source 3: Polybius (c. 146 BCE), *Histories 10.15*. Polybius was a Greek historian and an eyewitness to the destruction of Carthage, a city in North Africa conquered by the Romans during the Punic Wars.

The Roman army

The Roman army was a disciplined organisation and Roman soldiers (called **legionaries**) used innovative weaponry and tactics. The army allowed Rome to build and defend a huge empire.

In the early days of the Roman Republic, only landowners could join the army. Those landowners who were wealthy enough to own a horse became part of the **cavalry**.

As the Roman Republic grew, a permanent and professional army was needed. In about 406 BCE, Roman soldiers began to be paid, with the cost of their food and equipment taken from their wages. Around 107 BCE, the requirement that men had to own land to join the army was removed, and thousands of young men aged 17 to 22 enlisted.

The Roman army was one of the most disciplined and well-organised of all time. Soldiers were put through harsh training regimes and were severely punished for refusing to obey orders.

When they were not fighting or training, Roman soldiers built military camps, walls, roads and aqueducts. Camps were always laid out the same way so that soldiers could find their way around.

Soldiers were given incentives to remain loyal to their leaders. They could often keep the plunder from battles and were given land when they retired from the army.

Learning ladder H6.15

Impact and legacies

1. Source 2: Identify the tactic shown in the source.
2. Source 1: Describe how the Roman army fought battles.
3. Explain how the Roman army had changed by 107 BCE.
4. Explain why the Roman army was so formidable.

Sources

1. Source 3: Identify the origin of the source.
2. Source 1: Describe the role of the signifier.
3. Source 3: Explain how the Romans destroyed the city of Carthage.
4. Source 3: Using the source and your knowledge, explain why the Romans destroyed the city of Carthage.
5. Evaluate the importance of violence in Roman society.

HOW TO

Sources, page 191

What are the legacies of the ancient Romans?

The ancient Romans left an impressive legacy in many areas, including languages, writing, government, law, engineering and architecture.

Language and writing

The language of ancient Rome, Latin, forms the basis of the French, Italian and Spanish languages spoken today. The English language also borrows many Latin words, with about 30 per cent of our words having Latin roots, such as *aqua* (water), *aud* (to hear) and *bene* (good).

The English alphabet is based on the Latin alphabet and our months are based on the Julian calendar implemented by Julius Caesar in 45 BCE. July is named after Julius Caesar and August is named after the first emperor of Rome, Augustus. The planets in our solar system are named after ancient Roman gods.

Master builders

The ancient Romans revolutionised the construction of buildings and roads with the invention of concrete, which they made by mixing volcanic dust with lime and water.

Architects and engineers have learnt a great deal from the engineering and construction methods of the ancient Romans. Their buildings were so sturdy that many are still in use today. The ancient Romans were also the first to extensively use domes and arches.

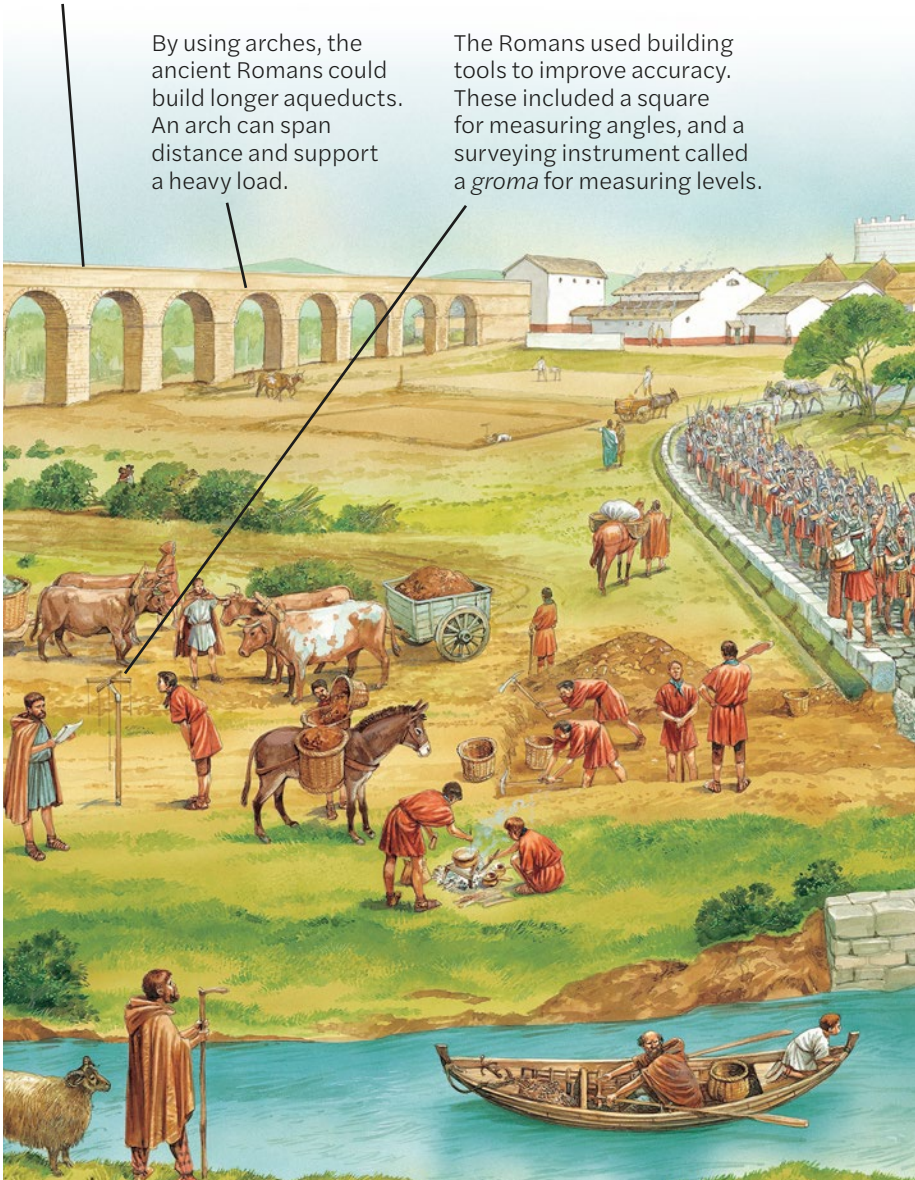
Water supply

The ancient Romans built reservoirs to store water required for daily needs and public baths. Water from rivers was pumped into settling ponds, where any dirt would settle, before being pumped into the reservoirs. Pure mountain water was directed to the reservoirs via aqueducts that could run for up to 100 kilometres.

The ancient Romans used pipes to connect the reservoirs to public baths, fountains and toilets, and to the homes of the wealthy. The advanced plumbing systems of the ancient Romans also carried away wastewater and sewage.

Public baths were very popular in ancient Rome; people went to the baths to wash and socialise. The water was heated by large fires tended by slaves in a boiler room. Hot air was fed under the floors through a series of tunnels to heat the pools.

Source 1: Roads and bridges were vital technology in ancient Rome.



Source 2: The ancient Romans developed different ways of using arches, and eventually invented the dome. Domes became a feature of many public buildings. The most spectacular Roman dome is that of the Pantheon, a temple rebuilt around 120 CE. The dome has a 43-metre diameter; it is still the second-largest dome in the world.

The road network stretched all over the Roman empire. The roads in ancient Rome were usually long and straight. They had a base of crushed rock that was covered in gravel or concrete. Sometimes stone slabs were placed on top. Many roadways built by the ancient Romans are still in use today.

Learning ladder H6.16

Impacts and legacies

1. What does the Latin word aqua mean? List three English words that use *aqua* as the root word.
2. Describe how ancient Rome has influenced writing.
3. Source 1: Explain how roads were constructed in ancient Rome.
4. Explain why the ancient Romans constructed aqueducts.

Significance

1. List three reasons why ancient Rome is historically significant.
2. Describe the significance of the ancient Romans' invention of concrete.
3. Sources 1 and 2: Explain how the use of arches was a significant achievement.
4. Explain why ancient Roman road building was significant to the growth of the empire.
5. Evaluate the legacies of the Roman Empire.

HOW TO

Significance, page 202

How do I conduct a good inquiry?

Now that you've finished the chapter, it's time to conduct your own historical inquiry on ancient Rome. Throughout the chapter you have developed knowledge and understanding of ancient Rome. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own historical inquiry!

A historical inquiry gives you the opportunity to be an active historian: forming questions, interrogating sources and communicating insights about the past on a topic of your choice.

The chapter has covered the origins and legacies of ancient Rome in addition to significant people, events, ideas and beliefs. What would you like to know more about?

- The city of Rome, page 150
- The Punic Wars, page 182
- The gladiators, page 174
- The spread of Christianity in ancient Rome, page 162
- The role of women in ancient Rome, page 158

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas.

Once you have worked through this process, you are ready to start the historical inquiry. Refer to pages 208–213 of the How-to chapter for a step-by-step guide to this process.

See

What do you see?
Who is involved?
What are the key features?
When and where was this happening?

Think

What do you think about that?
How do you think people were affected at the time?
How is this similar to or different from today?

Wonder

What does it make you wonder?
What did different groups think about this?
Why is this important to know?

Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to expand your knowledge and attempt new skills.
When planning your inquiry, consider how the experiences and perspectives of individuals and groups shaped societies, beliefs and events in the past. Think about how the past has had an impact on the present. Use the How-to chapter to support your planning and research.

History How-to

H7

Historians use particular skills to analyse and understand societies of the past. Historical skills are based on interpreting sources of evidence from the past, promoting inquiry and encouraging investigation.

How to develop history skills

The skills described in this How-to are important skills that historians use to understand the past. There are five levels of difficulty for each skill. Each skill is described and a model provided that demonstrates how to master the skill at each level. Learning skills at the lowest level of difficulty will help you to master the skills at the highest level.

Chronology

Chronology is the arrangement of events into the order in which they happened. Historians put events in order, from the oldest or earliest event to the most recent event.

Here are some key terms relating to chronology:

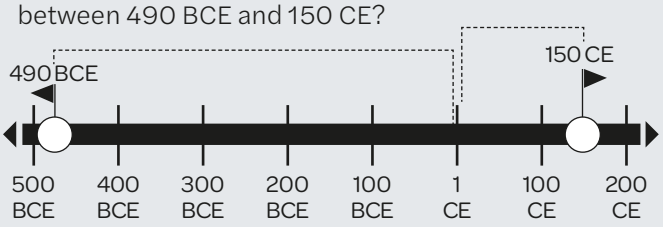
- **ancient:** relating to the time between c. 3000 BCE and c. 500 CE
- **Anno Domini (AD):** a Latin term meaning 'in the year of our Lord'; modern historians do not use this term but many other people do
- **Before Christ (BC):** the years before the birth of Jesus Christ; modern historians do not use this term but many other people do
- **BCE (Before Common Era):** the years before the common era (BC)
- **CE (Common Era):** the years after the common era (AD)
- **century:** 100 years
- **decade:** 10 years
- **era:** a distinct period with significant historical characteristics
- **medieval:** the 5th to 15th centuries CE
- **millennium:** 1000 years
- **modern:** the years from c. 1789 CE to the present
- **prehistoric:** the time before written records.

1 I can read a timeline

Timelines list key events and the years those events happened in the order they occurred. A one-off event is shown as a vertical line. A period of time is shown as a horizontal line, with the ends of the line showing the start and end of the period.

When answering questions about chronology, include part of the question in your answer. For example, if a question asks, 'When was the city of Rome founded?' you should answer with, 'The city of Rome was founded in 753 BCE', rather than just '753 BCE'.

For example, how many years were there between 490 BCE and 150 CE?

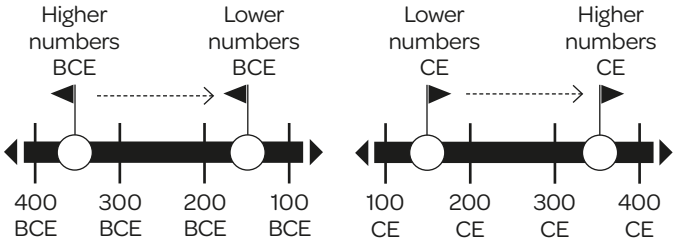


The difference in years between 490 BCE and 150 CE is:

490 + 150 = 640 years

2 I can place events on a timeline chronologically

Placing events on a timeline involves putting them in chronological order, from the earliest event to the most recent event. The order goes like this:



Source 1: The Arch of Titus was constructed in 81 CE, during the Roman Empire.

Source 2: This source is an artist's impression of a battle at Syracuse [*Peloponnesian War: The Naval Battle in the Harbor of Syracuse* (19th century CE), wood engraving, Granger Historical Picture Archive]

It is similar to positive and negative numbers used in mathematics. A period of time that lasts 10 years in BCE starts with a higher number and goes *down*. A period of time that lasted 10 years in CE starts with a lower number and goes *up*.

For example:

700–690 BCE: an event taking 10 years

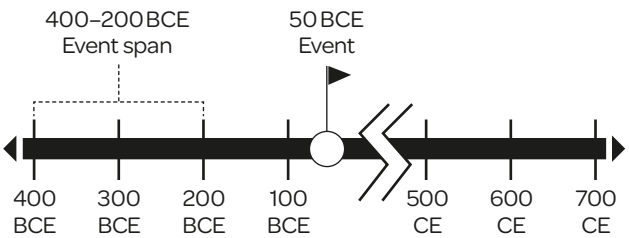
700–710 CE: an event taking 10 years

3 I can follow timeline conventions

Follow these steps to make a timeline:

1. Select events to include on your timeline.
2. Put the events in chronological order: from the earliest event to the latest event.
3. Work out the earliest and latest dates you want to include on your timeline.
4. Pick a span of years that your timeline will cover; this span should include the earliest and most recent dates.
5. Choose the unit of time you want to use: years, decades or centuries.
6. Work out how many segments your timeline needs.
7. Draw a straight line and divide it into segments. Figure out the size of each segment based on how much space you have on your sheet of paper.
8. Number the segments into the units you selected in Step 5.
9. Add the events to your timeline.

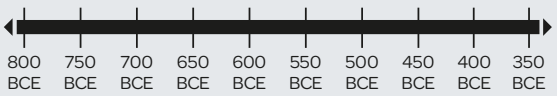
If an event goes over many years, add it as a span rather than a line. If there is a large gap between the events on your timeline, add a zigzag line to show there has been a jump in time. For example:



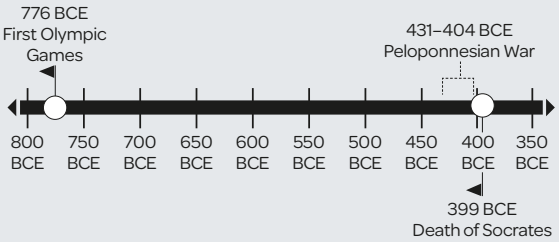
Example of creating a timeline

1. Select events to include on your timeline.
   First Olympic Games (776 BCE); Death of Socrates (399 BCE); Peloponnesian War (431–404 BCE)
2. Put the events in chronological order.
   First Olympic Games (776 BCE); Peloponnesian War (431–404 BCE); Death of Socrates (399 BCE)
3. Work out the earliest and latest dates you want to include on your timeline.
   776 BCE is the earliest date and 399 BCE is the latest
4. Pick a span of years that your timeline will cover; this span should include the earliest and most recent dates.
   800 BCE–350 BCE (450 years)
5. Choose the unit of time you want to use: years, decades or centuries.
   Segments of 50 years
6. Work out how many segments your timeline needs.
   Nine blocks of 50 years
7. Draw a straight line and divide it into segments. Figure out the size of each segment based on how much space you have on your sheet of paper.

   I am using an A4 exercise book. I have about 20 cm to draw in. Nine blocks at 2 cm per block gives me 18 cm.
8. Number the segments into the units you selected in Step 5.



9. Add the events to your timeline.



4 I can summarise the events on a timeline

Summarising information from a timeline involves condensing the key events into a brief, focused overview. This requires looking critically at the timeline to determine which points are most important and how they fit together. To summarise effectively, follow these steps:

- **Identify the most significant events:** Not all events on a timeline are of equal importance. Focus on the events that represent major **turning points** or milestones in history. These are often the moments that led to significant change or shaped future developments.
- **Look for patterns or connections:** Summarising is not just about listing events. Instead, try to understand how the events relate to one another. Are they part of a broader trend, such as the rise of empires? Grouping related events can help you find patterns and connections between events.
- **Determine the overall theme or progression:** Timelines often illustrate change over time. In your summary, aim to describe this progression, whether it's a series of conflicts, the spread of ideas or periods of stability followed by upheaval. Think about what story the timeline is telling and convey this in your summary.

5 I can explain change or causality from a timeline

Explaining change or causality using a timeline means understanding how events are connected and how one event leads to another. To do this, follow these steps:

- **Find important events:** Look for key events on the timeline that caused big changes or had lasting consequences. Focus on events that seemed to trigger shifts in areas such as politics, society or the economy.
- **Understand how events are connected:** To explain causality, think about how one event might lead to another. For example, a war could result in a change of government, or a new invention could change the way people live. Finding these connections helps you to understand why things changed.
- **Identify the type of change:** Consider how the change happened. Was it a sudden, major change or did it happen slowly over time? Changes in history can be quick, like revolutions, or gradual, like technological developments.
- **Look for multiple causes:** Changes in history often have more than one cause. For example, a revolution could be caused by a mix of economic problems, political issues and social unrest. Explaining change means thinking about all these reasons, not just one.
- **Compare with later times:**To better explain the change, you can compare the events on the timeline to a later period, such as today, to show how the changes continued to shape history.

Source 3: This is an artist's recreation of the Great Sphinx and the Great Pyramid of Giza as they might have appeared when they were built during the 4th dynasty of ancient Egypt. The Great Pyramid of Giza is the last of Seven Wonders of the Ancient World still standing, representing continuity from ancient times to the present day.

Sources

Detectives use clues to solve mysteries. Historians use sources to understand the past. This involves looking at evidence and asking, 'How do we know what we know about the past?' A good source analysis interprets and explains the meaning of the source.

First, you need to ask good questions of a source. These questions include:

- Who created it?
- When was it created?
- What was the author's or creator's purpose? Why was it made?
- What is the historical **context** of the source?

The more sources you use, the better your understanding of the past will be.

This is a vase or jug and its purpose was probably practical, but could also have been decorative or to commemorate an event. It was probably made by a skilled artisan.

This type of headdress is similar to images I have seen of ancient Spartan warriors, so this vase could date from the 6th century BCE. It was probably made in ancient Greece or in one of the ancient Greek Empire's territories.

The vase shows men holding spears and shields and wearing helmets. They look like they are warriors engaged in battle.

▲ **Source 4:** How to describe a source

1 I can identify the origin of a source

Sometimes, if you're looking at a photo of a source in a text, there may be a caption that provides information about the origin of a source (Source 2). This caption tells you who made the source, the name of the source and when it was made. Sometimes we don't know the creator of the source. In this case we state that the source was made by an 'unknown creator'.

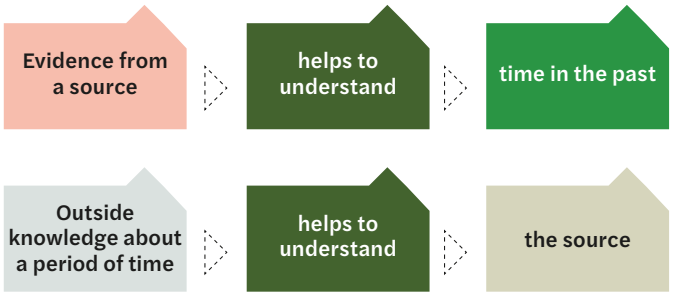
2 I can describe a source

Describing a source is when you describe its features. This involves more than listing facts about the source. Describing a visual source might involve relating what is in the image. Describing a written source might involve summarising the main things that the text states. For example:

Type of source	Source description
Visual source	This vase is very decorative. It features warriors who are engaged in a battle. They are wearing helmets and holding shields and spears. The helmet is similar to those worn by Spartan warriors.
Written source	The *Book of the Dead* was an ancient Egyptian book used to guide a dead person in the afterlife. It contained spells to help a dead person pass a series of tests, including weighing their heart, to reach the afterlife. This shows that the ancient Egyptians believed that their conduct on Earth determined their fate after death.

3 I can apply historical knowledge to explain sources

Sources can tell us a lot about a period of time in history. You can also use your knowledge of a period to explain a source. These are two different skills. They both help us to understand, but they should not be confused.



The more you know about the past, the better you will be at explaining sources. So, having lots of knowledge about the past is important for this skill.

What is in a source?	Outside knowledge that might help to understand it
Rock painting of people	Knowing how kinship systems work in First Nations cultures
Vase with fine detail	Knowing how craft technology allowed fine detail to be produced
Mummified corpse	Knowing why ancient Egyptians mummified bodies
Helmet	Knowing how common warfare was in ancient Greece
Engraved stone writing	Knowing who was the Roman emperor at the time, and what kind of ruler he was

4 I can explain the historical context of a source

Explaining the historical context of a source involves identifying and describing the important factors of the period in which a source was made. To help you think of important factors, use the acronym SHEEPT.

SHEEPT factor	Example from ancient India	How this might influence a source from the time
Social: how people lived, traditions, customs …	The caste system	A source could show bias against a caste
Historical: past events that influenced what was happening in that period of time …	The Maurya Empire	A source might compare the current empire with earlier, successful empires
Economic: how the economy influenced people's lives …	Trade, both local and with other regions	A source might reflect new ideas picked up from trading partners
Environmental: the impact of weather, climate, natural disasters and resources such as water …	The importance of the Ganges River to agriculture	A source might mention the importance of agriculture to the success of a society
Political: how people were governed, who had power, what the laws were …	Emperor Ashoka's focus on morality and ethics	A source might reflect the political views of the time
Technological: the influence of tools and machines; for example, wheels and computers …	Advanced urban planning and architecture	Technology from the past may itself be a historical source

5 I can evaluate sources to determine their accuracy, usefulness and reliability

The more sources you evaluate, the better your understanding of the past will be. Evaluating primary and secondary sources helps you judge how accurate, useful and reliable they are for understanding history.

Here is an example of an evaluation of sources. Pottery in ancient Greece often had inscriptions carved into it. The Greek myths explained the creation of the world and the big questions of life to ancient Greeks.

Category	Ancient Greek pottery	Greek myths
Accuracy	More accurate: provides dates, events and names	Less accurate: includes a mix of historical events and folklore
Usefulness	Useful for specific facts	Useful for understanding culture and values
Reliability	Highly reliable but pottery has a limited perspective	Less reliable because myths combine fact and fiction

To evaluate **accuracy**, check if the source provides specific, verifiable details, such as dates, names or events, and whether it aligns with other known historical facts.

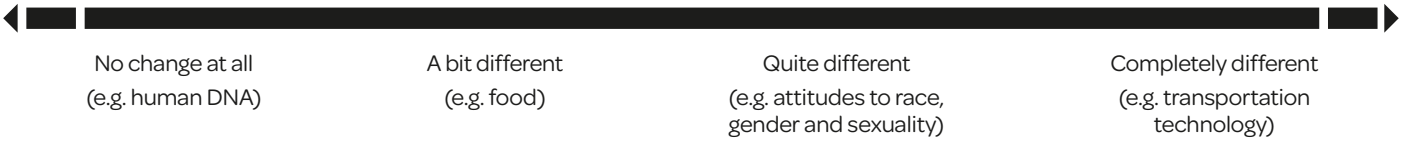
For **usefulness**, a source should help you understand history and be easy to find. For high school students, useful sources should be easy to understand and directly related to class topics. They should be available in accessible places, such as textbooks or online resources.

When evaluating **reliability**, think about who created the source, their purpose and how objective or biased they might have been. Reliable sources are trustworthy and less likely to mix fact with myth or exaggeration.

Continuity and change

On our quest to understand history, we need to grasp both continuity and change. **Continuity** refers to things that have stayed the same over time. Change refers to things that have altered over time.

Continuity and change can exist at the same time: some things stay the same, while others change. Change can be fast or slow, happen gradually or in a burst.



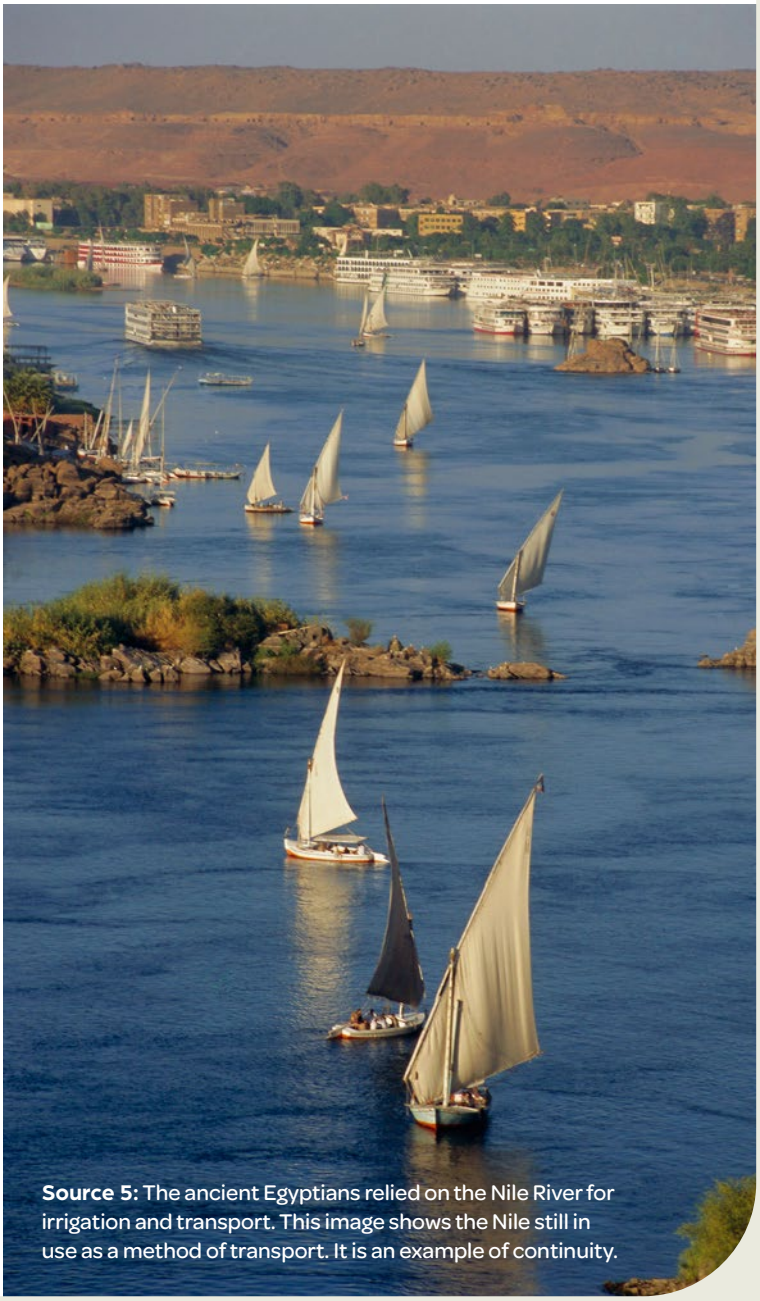
1 I can identify continuity and change

Identifying continuity and change involves seeing what has remained the same and what has changed. The easiest kind of continuity or change to notice is from a historical period to the present, because we know a lot about the present. This table shows examples of continuity and change from historical societies to the present.

Historical society	Continuity	Change
Ancient China	Importance of family (the elderly and children are still highly valued)	Political structure (was under imperial rule, is now a communist state)
First Nations Peoples	Histories are still passed down through oral storytelling	Technology (true for most societies)
Ancient Egypt	Egypt still relies on the Nile River for both agriculture and transport	Language (hieroglyphics) replaced by Arabic

To help you identify continuity and change, ask:

1. Did it exist in the past and did it remain throughout the period, or does it still exist now? If yes, that is continuity. You can say: 'This situation remained and shows continuity.'
2. Did it exist in the past but changed during the period, or does not exist now? If yes, that is change. You can say: 'This situation represents a change.'



Source 5: The ancient Egyptians relied on the Nile River for irrigation and transport. This image shows the Nile still in use as a method of transport. It is an example of continuity.

2 I can describe continuity and change

Describing continuity and change involves identifying in detail what has remained the same and what has changed, or both.

Society	Earlier time	Later time	Continuity between these times	Change between these times
Ancient Australia	65 000 BCE: A small number of First Nations peoples lived in the north.	100 CE: First Nations peoples had spread across the entire continent.	People lived in tribal groups.	People were spread across the whole of Australia.
Ancient Egypt	6000 BCE: Early settlers lived along the Nile River.	1450 BCE: The ancient Egyptian society was at its peak.	People relied on the Nile River for irrigation.	Powerful rulers controlled many people.

3 I can explain continuity and change

When you explain *how*, you are saying what happened to make the change, or what happened to ensure something stayed the same. Let us consider how the system of government changed in ancient Rome and how it remained the same in ancient China.

Explaining how change occurred	In 27 BCE, after the death of the powerful ruler Julius Caesar, and a period of political instability, Rome changed from being a republic governed by a senate, assemblies and magistrates to being an empire governed by an emperor.
Explaining how continuity occurred	After Emperor Qin unified the warring states in 221 BCE, China remained a single country governed by one emperor until the 20th century.

Source 6: Qin Shi Huangdi was China's first emperor. He established a system of government that would stay the same for over 2000 years.

Source 7: In about 1650 BCE, the Hyksos people migrated to Egypt. They brought with them the horse-drawn chariot and composite bow. The ancient Egyptians adopted these innovations, which allowed them to be more effective in battle. This was a change that benefited the Egyptians.

4 I can explain patterns of continuity and /or change

Explaining patterns of continuity and change requires you to find a trend or pattern of something that has stayed the same or has changed over time. Many patterns of continuity and change are similar across different societies and time periods.

Common examples of **patterns of continuity** include:

- close family bonds
- the importance of food
- the influence of religion
- trade.

Common examples of **patterns of change** include:

- the improvement in technology
- the increase in population
- the spread of new ideas
- the development of new political systems.

Here are some patterns of continuity and change from Indian history:

Aspect of society	Pattern of continuity	Pattern of change
Art and culture	Importance and influence of religion	Broader range of themes
Social structure	Clear hierarchy	More interaction between social classes
Trade	Central point for international trade	Technological advancements

Source 8: The Hindu festival of Holi has been celebrated in India since the 4th century CE.

5 I can evaluate patterns of continuity and/or change

To evaluate patterns of continuity and/or change in history, you need to make a judgement about whether the change or continuity was positive or negative using evidence and logical reasoning.

Follow these steps to evaluate patterns of change:

- **Identify the change:** What changed over time?
- **Examine the consequences:** Were the impacts positive or negative?
- **Assess the advantages and disadvantages:** What improved? What challenges arose?
- **Consider the broader context:** How does this change fit within the larger historical picture?
- **Make a value judgement:** Based on the evidence, decide whether the change was overall positive or negative. Remember that value judgements are not always 'right' or 'wrong' but depend on how well the evidence supports your judgement.

Here's an example of evaluating the change to iron weapons in ancient India:

Step	Example: Shift to iron weapons in warfare
Identify the change	Transition from bronze to iron weapons in warfare
Examine the consequences	Improved military strength and allowed the expansion of kingdoms
Assess the advantages and disadvantages	**Advantages:** Stronger armies and more territorial control **Disadvantages:** Increased warfare and societal instability
Consider the broader context	Similar changes were happening in other ancient civilisations, leading to regional power shifts
Make a value judgment	Overall this change was positive for technological advancement, but it also contributed to increased conflict

Causes and consequences

Causes and consequences are all around us. For instance, when you water plants, they grow taller and healthier. In this case, watering is the cause, and the consequence is the plants' growth. Similarly, when you press a button, the television turns on.

The cause is pressing the button, and the consequence is the television turning on. Understanding causes and consequences will help you to make sense of how actions lead to specific outcomes. It is essential to understanding many aspects of our world.

Source 9: One cause of the perception of Rome's power and authority was the majestic buildings of the Roman Forum, which were built as symbols of Rome's wealth and supremacy.

To understand causes and consequences, you need to identify which events are linked and understand why they are connected. When things are linked by causes and consequence they have a *causal link*. This means that one thing *caused* the other.

Most things that happen have multiple causes and consequences, some of which are more important than others.

Two main types of causes are:

- **historical actors**: the individuals or groups involved – for example, Alexander the Great, Julius Caesar, Qin Shi Huangdi, the First Triumvirate
- **historical conditions**: the social, political, economic, cultural and environmental factors – for example, mass unemployment, drought, world religions and bad harvests.

However, just because one event occurred after another, this does not always mean that the first event caused the second event; for example, when a rooster crows in the morning, we do not think it makes the sun rise.

You also need to be able to provide a logical reason about why something caused a consequence. Events in history are not inevitable. When we study causes and consequences, it can seem like things were always going to work out in a certain way. Yet, change a few conditions and things could have happened differently. If Alexander the Great had fallen off his horse as a boy and died, would Greek society have spread so far and been so significant? It is easy, with hindsight, to think our causes-and-consequences explanations are perfect, so we need to be cautious when making claims about causes and consequences.

1 I can identify a cause and a consequence

Recognising a cause and its consequence means correctly choosing from a list of possibilities. Consider the outbreak of the Peloponnesian War (431 BCE). The Peloponnesian War was a war fought between the ancient Greek city-states of Athens and Sparta. Which of the following options is most likely to be the cause of the Peloponnesian War?

A Rome conquered Greece in 31 BCE.

B Athens and Sparta both wanted to control all of Greece.

C The Persians had better technology than the Greeks.

D Sparta is in Greece.

E Athens was founded before Sparta.

The only option that is linked to the Peloponnesian War is B. Option A refers to a time after the war, so it can't be the cause. Option C refers to Persians, not Greeks, so it is not relevant. Options D and E tell us facts that would not necessarily lead to conflict.

For events to be causally linked:

- one event must come before the other
- you must be able to provide a logical reason for why one event caused the other
- if possible, you should have evidence that one event caused the other.

2 I can describe causes and consequences

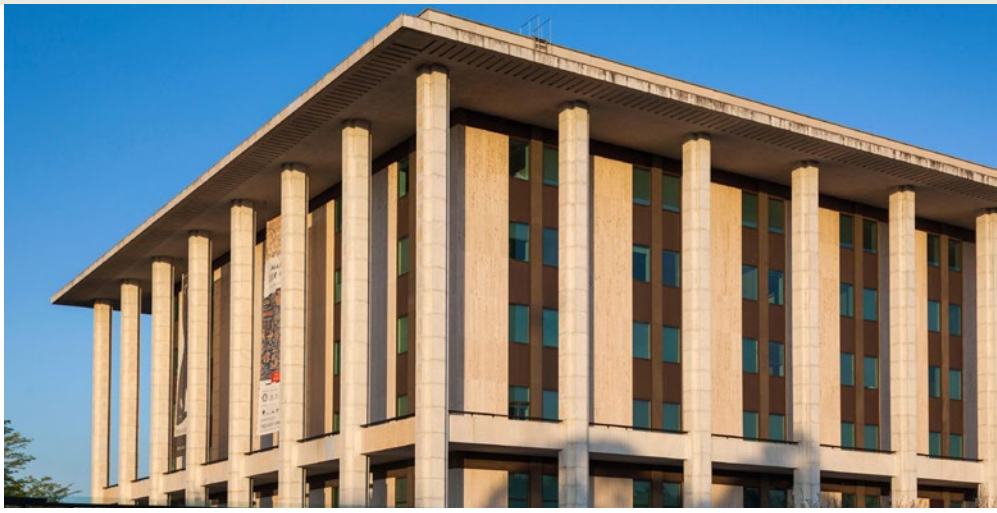
Describing a cause and its consequences requires you to give detailed information. Describing involves more than identifying. For this step in the skill, you could describe the cause or the consequence or both. For example:

Description of the cause	Description of the short-term consquence	Description of the long-term consquence
European colonists subjected First Nations Peoples to unethical experiments and stole their remains in an effort to dehumanise them and justify the colonisation of First Nations people's land.	As a result of the dehumanisation process, First Nations Peoples were often met with violence and their land was forcibly taken.	The dehumanisation of First Nations Peoples perpetuated false assumptions and misinformation about First Nations Peoples, histories and cultures.

Source 10: On 11 July 2011 CE, the paperbark bundles containing First Nations people's remains were returned to their ancestral home in Gunbalanya in the Northern Territory. In 1948 CE, these remains were stolen from graves by an Australian and US expedition and taken to the Smithsonian Institute in the United States.

3 I can explain how something was caused or its consequence

'Explaining how' involves writing about the process by which something was caused or its consequences. This type of explanation is about the steps, the sequence or the process.



Source 11: The design of the National Library of Australia is based on the architecture of the 1st-century CE structure, the Parthenon in Athens.

Cause	Consequence	Explaining how the cause led to the consequence
About 180000 years ago, east Africa became overpopulated.	People migrated to the Middle East, India, Asia and Australia.	There were not enough resources in east Africa after a while. Hunting and gathering requires a lot of land so, as the population grew, there was not enough land. To avoid starvation, people were forced to find new land elsewhere. They moved north to the Middle East, then east to India, Asia and Australia.
Alexander the Great conquered the known world and spread Greek culture.	Greek culture – such as building styles, dress, religion and language – spread to the Middle East and west Asia.	Alexander the Great was a general who conquered Greece, Egypt, Persia and parts of India. He loved Greek culture. As he conquered territory, his soldiers moved into the new lands. The invaders mixed with the local people. Over time, they began to share the way they did things. This led to the existing culture being mixed with Greek culture. It created a new type of culture, known as 'Hellenistic' culture. People from areas conquered by Alexander begun to live differently, with new clothing styles, architecture and religious rituals, and language also changed.

The Middle East and parts of Asia, c. 334–323 BCE

▲ **Source 12:** The empire of the Macedonian king, Alexander the Great

Source: Peter Hermes Furian

4 I can explain why something was caused or why it led to certain consequences

Explaining how focuses on the sequence of events – describing what happened and how one event led to another. Explaining *why* goes deeper by identifying the reasons an event occurred or identifying why it had a range of consequences. You need to look at the intentions or circumstances that caused people or societies to act, or the circumstances that ensured a cause produced certain consequences. Typical motivations for change in history include:

- **political power:** wanting to gain or maintain control
- **economic gain:** wanting wealth, trade opportunities or resources
- **social equality:** pursuing justice, human rights or societal reform
- **religious beliefs:** wanting to spread or reform a particular belief system
- **technological advancement:** needing to innovate to solve problems or gain advantages
- **military security:** needing to defend existing lands or conquer new lands for protection.

Cause (motivation)	Consequence
Political power in ancient Egypt: Pharaohs sought to consolidate power.	The pharaohs ordered the construction of the pyramids and temples, which reinforced their divine authority and their control over Egyptian society.
Economic gain in ancient China: The emperors during the Han dynasty needed to control trade routes and resources.	The emperors supported the expansion of the Silk Road, which led to increased wealth, trade with other societies and cultural exchange across Asia and Europe.

5 I can analyse causes and consequences

'Analysing' means breaking down something into its separate parts. If you can identify the different parts, and explain how together they make up the whole, you are analysing. If you can explain the rules or theories that show how these parts are organised, you are analysing.

The first step is being able to break down something into its parts. For example, what caused Egypt to fall to the Roman Empire? We can break down the cause into three parts:

Cause 1: Rome had superior military forces.

Cause 2: Rome needed Egypt's food resources.

Cause 3: At the time, there was civil unrest in Egypt.

Breaking down the cause is the first part of the analysis. Now we can explain how these combined causes led to Rome conquering Egypt:

Rome needed Egypt's food resources and had a more powerful army. Because Rome needed something (food) and had the ability get it (the army), it was always likely that Rome would conquer Egypt and make Egypt part of the Roman Empire.

Here, we have linked Cause 1 and Cause 2 together. Next, you need to decide how strong the causal link is.

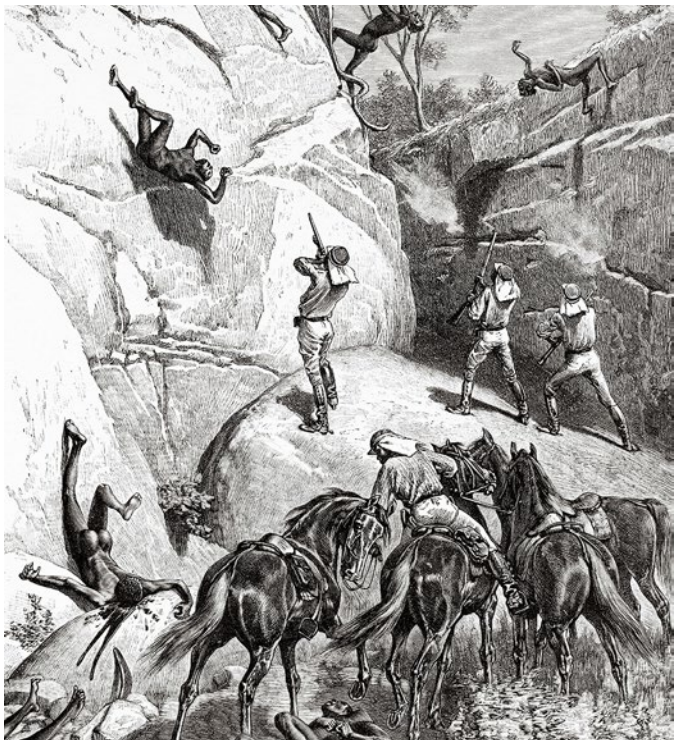
Less — **More**

Small causal link
Gradual, minor, almost no part, short-lived, partly, partial, to some extent, small extent

Large causal link
Radical, powerfully, significant, important, to a great extent, considerable, main, crucial

Once you have decided how strong the causal link is, here are some words you can use to describe it:

- If something had a minor consequence, you could say: The lives of First Nations Peoples were only affected to a small extent by the introduction of dingos.
- If something had a major consequence, you could say: The lives of First Nations Peoples were significantly affected by European colonisation.



▲ **Source 13:** There was a large causal link between hardships faced by First Nations Peoples in Australia and the arrival of colonisers in 1788 CE. This illustration from the 19th century CE shows policemen on horseback shooting First Nations people. [This illustration by Carl Lumholtz appeared in *Le Tour du Monde* in 1889 CE.]

Perspectives

Perspectives are different ways of looking at the world or different points of view. A person's perspective is influenced by their culture, social class, wealth, where they live and their gender. It is important for historians to understand the perspectives of people who lived in the past. This helps us to avoid 'presentism', which is when we mistakenly see the past from our own modern point of view, which can be very different from the perspectives of the people who lived at the time.

1 I can identify the perspective of a person from the past

To identify the perspective of a person who lived in a particular period in the past, imagine what that person might have thought. Try putting yourself in their shoes.

Here are some examples of the points of view of people from the past:

Example	Perspective they might have
Chinese emperor	'I have an obligation to my people to rule them wisely.'
Egyptian farmer	'The Nile River is very important to my harvests.'
Roman soldier	'I believe living in the Roman Empire is better than living outside it.'

2 I can describe perspectives

'Describing' is when you explain something in detail. Describing a perspective from the past is when you learn about a person's views and then use key details to paint a vivid picture of life from their perspective. For example, you watch a documentary about the life of an Egyptian pharaoh (ruler). You can then describe their perspective by writing, 'The pharaoh believed they were a living god. They showed this belief through their grand monuments, rituals and the way they presented themselves to their people as all-powerful and divine'.

3 I can explain a perspective

'Explaining a perspective' is when you say why a person from the past had a certain point of view. People in the past often held very different views to those held by people today. For example, people in many ancient and medieval societies believed:

- they had a right to invade other regions and take their resources
- their religion was superior to other people's religions
- royalty and nobles were more important than peasants.

In addition, like today, there were different perspectives on individuals and events:

- Some people were seen as heroes by one group and as villains by another.
- Battles could be seen as important victories by the conquerors or as shattering defeats by the victims.

Source 14: An artist's impression of a Roman legionary. The ancient Roman army, which was one of the most disciplined and well-organised armies of the ancient period, was essential to Rome's ability to grow its empire.

Perspective	Historical context	Explanation
Ancient Roman perspective	As ancient Rome expanded its hold on various territories over time, having an empire was considered a necessity for the Roman people.	For the ancient Romans, using military might to expand their territory was a necessity. Not only did military conquests bring glory to ancient Rome but also the territories acquired provided much-needed resources.
Indian perspective	In ancient India, society was structured by the caste system. Brahmans considered themselves to be members of the highest caste. This is because, traditionally, Brahmans were priests and scholars, so they were closest to the creator god, Brahma.	The Brahmans' perspective was influenced by their religious education, which taught them that their duties were essential for upholding cosmic order. Brahmans saw their role as integral in maintaining social harmony and ensuring the spiritual wellbeing of society.

4 I can compare perspectives

'Comparing' is when you look at two things and identify what is the same and what is different. A good comparison makes an overall statement about how similar or different the two things are. For example:

Example	Similarities	Differences	Overall comparison statement
• Ancient Spartans • Ancient Athenians	• Language • Religion	• Athenians valued art. • Spartans valued the military.	While ancient Athenians and Spartans shared a language and religion, they had different views on art and the military.
Ancient Chinese: • farmer • wealthy landowner	• Depended on agriculture • Respected authority	• Landowner had power and wealth • Farmer disliked the inequality of the social system	Ancient Chinese farmers and landowners had very different levels of wealth and power, despite both relying on agriculture.

5 I can evaluate historical perspectives

To evaluate historical perspectives, you need to understand the social and cultural settings that influenced people's beliefs and actions.

Evaluating historical perspectives involves thinking about why people made the choices they did. By looking at different viewpoints, you can gain a deeper understanding of historical events and actions.

Here are some steps you could follow to evaluate a perspective:

1. **Understand the historical context:** Identify the social and cultural settings that influenced people's beliefs and actions during the period you are studying.
2. **Examine evidence:** Use primary sources from the period, such as artefacts or written historical records, to gather information about people's perspectives.
3. **Consider multiple viewpoints:** Explore the differences between the perspectives held by different groups of people (e.g. from different social classes). Use your understanding of these differences to form a more complete understanding of the historical situation.

Here is an example from ancient Egyptian history:

Perspective: The pharaoh was seen as a living god who maintained cosmic order in ancient Egypt.

Egyptians believed in *ma'at*, which was the cosmic balance in the world and the heavens. They believed it was the pharaoh's role to maintain ma'at because he was the divine ruler.

Inscriptions, temple reliefs and monumental structures, such as pyramids, depict the pharaoh's divine role in ensuring order. While the elite members of ancient Egyptian society promoted this belief, common people may have been focused more on daily survival than the pharaoh's divine status. They may have been more concerned about whether the pharaoh was providing enough food to eat than whether he was maintaining the balance between the world and the heavens.

Significance

How do we decide which events or time periods in the past are important? Not all events, people or developments hold the same weight. By understanding historical significance, you can prioritise information and make sense of the huge amount of historical evidence.

1 I can identify something historically significant

'Significant' means important – something worth noting. So 'identifying something historically significant' means deciding whether an event, person or development is important.

To identify if something is significant, ask yourself: Was it important back then? Were people deeply affected? Did it affect a lot of people for a long time? Is it still relevant to modern times? If you answer 'yes' to these questions, the event, person or development is likely to be historically significant.

2 I can describe something historically significant

'Describing historical significance' involves writing in detail about the importance of an event, person or development. For example:

Event	The establishment of Confucianism in ancient China 5th–6th century BCE
Immediate impact	The establishment of Confucianism in ancient China led to an emphasis on social harmony and hierarchy, encouraging people in ancient China to uphold the social order.
Long-term impact	The establishment of Confucianism in ancient China influenced ancient Chinese governance by suggesting a meritocratic system of government where officials were selected based on their ability instead of their heritage. Confucianism eventually became the official ideology of the state.
Description of historical significance	The establishment of Confucianism was a significant event in ancient Chinese history due to its influence on ancient Chinese society and its role in shaping ancient Chinese government. It was also pivotal in cementing the importance of social hierarchy in ancient China.

3 I can explain something historically significant

Explaining historical significance means describing how or why something is important.

To help you explain why something (such as an event) was historically significant, you can ask a series of questions (such as how many people were affected and how long were they affected). The answers will help you formulate your answer. The example below uses these questions to explain the historical significance of Julius Caesar's assassination.

Question	Example: Julius Caesar's Assassination
How important was it to people at the time?	Caesar's assassination in 44 BCE shocked Rome and created immediate political chaos.
How deeply were people affected?	It deeply affected the Roman Senate and the population, leading to civil wars and the eventual rise of Augustus as emperor.
How many people were affected?	Millions across the Roman Republic were affected as it eventually led to the fall of the Republic and the rise of the Empire.
For how long were they affected?	The consequences of Caesar's death shaped Roman politics and governance for centuries, as it ushered in the Roman Empire.
How does the event help us understand the modern world?	It helps us understand the dangers of political power struggles and the transition from democratic to autocratic rule.
Did the event change people's ideas or beliefs?	It changed people's beliefs about the stability of the Roman Republic and the role of leadership.
Does the event reveal any important themes or patterns in history?	The assassination highlights themes of political betrayal, the vulnerabilities of republics and how democratic rule can be replaced by authoritarian rule.

4 I can explain why something is historically significant

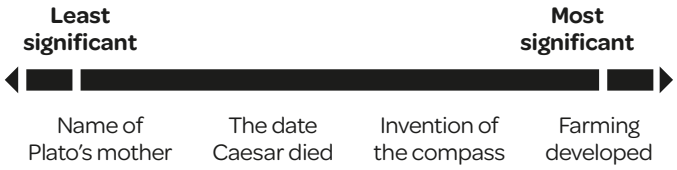
You can use primary and secondary sources to help you explain why something is historically significant. The steps in this process include finding sources, identifying what those sources say about an event, then using that information to determine the significance of the event. For example:

Event	The establishment of the Maurya Empire in ancient India
Relevant sources	• Primary sources, such as the book *Arthashastra* by Chanakya, and ancient scripts and coins • Secondary sources, such as history textbooks and scholarly articles about the Maurya Empire
What the sources say about the event	The sources suggest the Maurya Empire unified large parts of India, established efficient administrative systems and spread Buddhism to other parts of Asia.
Determine the historical significance of the event from the sources	The Maurya Empire's establishment in ancient India is historically significant due to its role in unifying large parts of India, introducing efficient administrative systems as described in *Arthashastra*, and spreading Buddhism, as documented in both primary and secondary sources.

Source 15: A c. 13th-century CE statue of Confucius in Shanghai, China

5 I can evaluate historical significance

Historical significance is not black and white; it can be shown on a scale, like this one:



Question	Example of low historical significance	Example of high historical significance
Event	The construction of a small, local tomb for a minor official	The construction of the Great Pyramid of Giza
Importance at the time	Only important to the official's family and a small community	The pyramid symbolised the power of Pharaoh Khufu and was important to all of Egypt
Depth of impact	Limited to a small group of people directly involved	The Great Pyramid was a monumental achievement that required massive labour and resources
Quantity affected	Affected a handful of local workers and family members	Affected thousands of workers and the entire nation due to the resources and labour involved
Duration of impact	The tomb's significance faded after the official's death	The Great Pyramid remains a symbol of Egypt's architectural and cultural achievements
Relevance to today	Little relevance today beyond local historical interest	The Great Pyramid is still studied and admired, influencing architecture and engineering worldwide
Extent of significance	The impact was minor and localised, with no lasting influence	The Great Pyramid had a profound, long-lasting impact on Egypt and continues to be highly significant today

Interpretations

History is not just a list of facts. What we think we know about the past changes all the time as we uncover more information and interpret things in different ways. Historical knowledge is always being contested, or questioned and challenged. Being able to determine the validity of different interpretations is an important skill.

1 I can identify a historical debate

Historians do not always agree on exactly what happened in the past. Even though they are looking at the same evidence, they might interpret this evidence differently.

One historian might suggest that modern democracy was born in ancient Greece, with citizens involved in public debate and decision making. Another historian, however, might argue that ancient Greece was not ruled by a democracy due to the exclusion of women and slaves.

Source 16: Hatshepsut was a female pharoah whose statues were defaced and her name erased by her successor, Thutmose III. Why he did this is a question that is debated by historians.

2 I can describe an interpretation of history

Describing a historical interpretation involves outlining the main ideas and arguments of a historian's viewpoint on a particular event or period. It is a good idea to use evidence from the interpretation to support your description. For example:

Topic	Historical interpretation	Describing the historical interpretation
What caused the Punic Wars?	One argument is that ancient Roman expansion led to the outbreak of the Punic Wars.	As ancient Rome continued to expand its control in the Mediterranean, it clashed with the competing interests of Carthage and threatened Carthage's control of the region.

Source 17: Romano Giulio (c. 1570–80 CE), *The Battle of Zama*, 202 BC. The Battle of Zama was the final battle of the Punic Wars, in which Rome defeated Carthage.

> The imposition of forced labour (*vishti*) and several new levies and taxes from the Gupta period onwards further undermined the position of peasants … Forced labour, taxes and other dues became all the more oppressive … [and] generated much social tension, leading to peasant protest …
>
> **Source 18:** D.N. Jha (2009 CE), *Ancient India: In Historical Outline*, Manohar, pp. 155–6. D.N. Jha is a modern historian.

3 I can explain an interpretation of history

When explaining a historical interpretation you need to think about what evidence has led to this interpretation. Use primary and secondary sources to help you explain how an interpretation has been formed.

Topic	Historical interpretation	Explaining the interpretation using the source
Was the Gupta period a 'golden age'?	The Gupta period was not a golden age for most people.	Most people's lives did not improve during the Gupta period in ancient India. In fact, the period saw a worsening of economic conditions, leading to rising social tensions. As historian D.N. Jha notes in Source 18, peasants had to undertake 'forced labour (*vishti*)' and also to pay 'new levies and taxes'. These changes during the Gupta period were so harsh that 'peasant protest' erupted.

▲ **Source 19:** *The Death of Julius Caesar* (1806 CE) by Vincenzo Camuccini. In this image, the chief conspirators are attacking Caesar.

4 I can compare historical interpretations

When comparing historical interpretations, you need to explain the similarities and differences between historical interpretations. Are the interpretations completely different or are there some similarities?

Topic	Historical interpretation	Comparing the interpretations
Why was Caesar assassinated?	The assassins believed Caesar would abolish the Roman Republic.	The assassins were members of the Senate and strongly supported the Roman Republic. They believed Caesar was trying to overthrow the democratic republic and rule Rome as a king.
	The assassins were jealous of Caesar's power and wanted it for themselves.	The assassins were members of the Senate who had long opposed Caesar and believed that they would lose any chance of power and influence if Caesar installed a monarchy.

◀ **Source 20:** Rock art showing a kangaroo hunt from Burrungkuy (Nourlangie) in Kakadu National Park, Northern Territory

5 I can evaluate the evidence supporting a historical interpretation

Evaluating the evidence supporting a historical interpretation is the final and most complex step. This involves assessing the quality, relevance and reliability of the evidence used to support a historical interpretation.

For example, let us evaluate the evidence of the rock art depicting hunting activities, and ancient hunting tools found on the continent of Australia:

Quality of the evidence	Consider the reliability of the sources. For example, are the ancient tools well preserved and authentic? Has the rock art been accurately interpreted? Evaluate the credibility and expertise of the historians studying and writing about these First Nations Peoples' artefacts.
Relevance of the evidence	Does the evidence directly support the historical interpretation that First Nations Peoples were excellent hunters, using technologically advanced tools and techniques to hunt and eat megafauna? Are there alternative explanations for the tools and rock art found on the continent?
Reliability of the evidence	Has the evidence been corroborated by multiple independent studies and archaeological findings? Are there consistent patterns throughout Australia and First Nations Peoples' cultures?
Evaluation	Based on your evaluation of the quality, relevance and reliability of the evidence, form your own judgement about the strength of the interpretation of First Nations Peoples' hunting skill and their successful use of advanced technology.

An evaluation of the evidence supporting a historical interpretation also considers the pros and the cons and then makes an 'on balance' judgement, taking the pros and cons into account.

For example:

Evidence	Pro	Con	Evaluation
Quality of the evidence	Well-preserved hunting tools provide direct insights into First Nations Peoples' hunting and butchering techniques.	Some hunting tools may be incomplete or damaged, which limits their interpretive value.	The evidence demonstrates First Nations Peoples had exceptional hunting skills. While some limitations exist, the overall strength of the evidence reaffirms the interpretation of advanced technologies and successful hunting of megafauna.
Relevance of the evidence	There is a direct link between the hunting tools and how First Nations Peoples were able to live alongside giant megafauna.	Alternative explanations for some tools might exist.	The evidence demonstrates First Nations Peoples had exceptional hunting skills. However, alternative explanations warrant careful consideration. The overall consensus that they were proficient hunters remains substantial.
Reliability of the evidence	Multiple independent studies confirm the validity of hunting tools. Consistent findings across different areas of Australia and First Nations Peoples' cultures enhance reliability.	The limited availability of certain tools may affect validation. Variations in cultural practices might lead to some inconsistencies in the evidence.	The evidence is highly reliable, showing strong agreement among studies and corroborating sources. The interpretation of First Nations Peoples being skilled hunters is well supported by multiple pieces of evidence, despite minor limitations.

How to develop a historical inquiry

Historians develop their knowledge of history by posing questions, finding new sources, weighing up the evidence and then forming their own interpretation. This process is known as **historical inquiry**.

What is a historical inquiry?

A historical inquiry allows you to research an aspect of a topic that you have studied and want to know more about. You begin by examining a range of resources, including books, websites, documentaries and films, to explore ideas relating to your specific topic area. You then start to form 'small' questions to develop your focus, such as:

- 'What conflicts arose?'
- 'What tactics were used in battles?'
- 'What forms of leadership were effective?'

Once you have started to develop the small questions, you then conduct more detailed research. You can use this to help you form a 'big' question, such as 'Why were battles won/lost?' or 'How important was warfare to the society?'

You need to have evidence from primary and secondary sources to support your view.

Conducting a historical inquiry is a bit like an archaeological dig. Follow these steps to uncover your answers:

Step 1: Survey

Just as archaeologists arrive at a site and do a visual scan of the landscape, you need to identify and describe key historical facts about the time you are studying.

Step 2: Excavation

After conducting their survey, archaeologists begin to dig a little deeper, uncovering structures and objects that reveal connections and details not visible from the surface. Likewise, you need to start gathering evidence from a range of sources to deepen your knowledge.

Step 3: Discovery

This is when archaeologists uncover the most significant finds that reveal the bigger picture. You too need to uncover your key inquiry question by weighing up the evidence and forming your response to the big question.

Step 4: Curation

Archaeologists often present their findings in a museum, documentary, book, website or lecture.

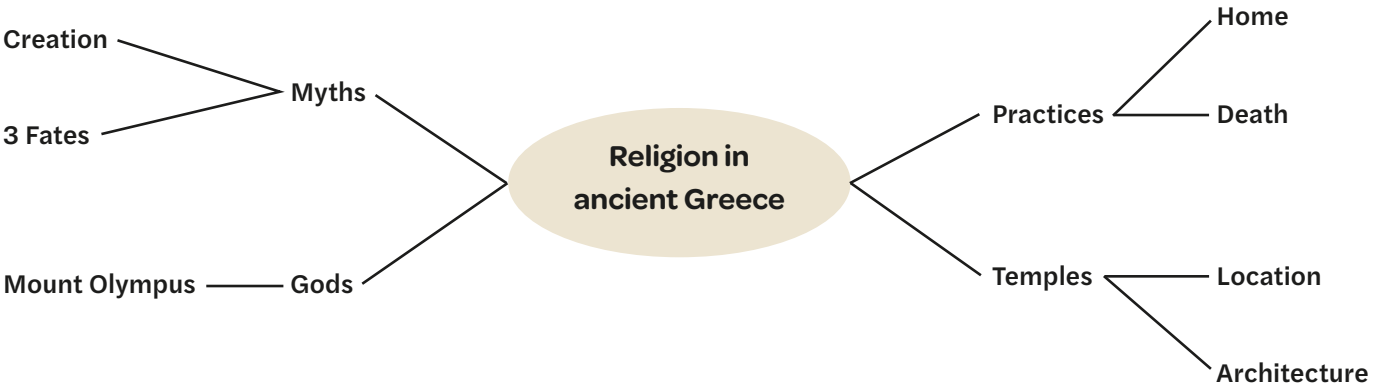
Think about how you will present your information and why it is important.

Step 1: Survey

Rationale

To begin your inquiry, think about which aspects of the ancient society have interested you the most – was it their culture, innovations, daily life or perhaps their interactions with other societies? Why is it interesting to you and why is it important to learn about this topic?

Next, draw a simple mind map or compile a list of what you already know. Then highlight the areas you would like to know more about.



Forming initial questions

Now that you have summarised the knowledge you already know, you need to devise some questions to guide your next steps. These questions should start with the words *who*, *what*, *when*, *where*, *why* and *how*.

For example, suppose you are interested in the ancient Greek gods:

Who	What	When	Where	Why	How
Who were the gods?	What was the role of the gods?	When did the ancient Greeks worship their gods?	Where were the gods worshipped?	Why were the gods worshipped?	How did the ancient Greeks worship their gods?

Or in the tombs of ancient China:

Who	What	When	Where	Why	How
Who was buried in ancient Chinese tombs?	What were the tombs in ancient China like?	When did people begin constructing their tombs?	Where were the tombs located?	Why did people in ancient China build tombs?	How did people in ancient China build tombs?

Step 2: Excavation

Conducting research to find your evidence

Once you have your initial questions, you need to gather more evidence. Go back to the relevant pages in the chapter and select the information that answers your small questions.

Then begin your research. Go to the research pages in this chapter (pages 214–15) to guide your selection of research sources. These can include primary sources (from the time) and secondary sources (made after the time). It is also important to consider perspectives (which show what different people thought at the time) and modern interpretations (what different historians have said about that time).

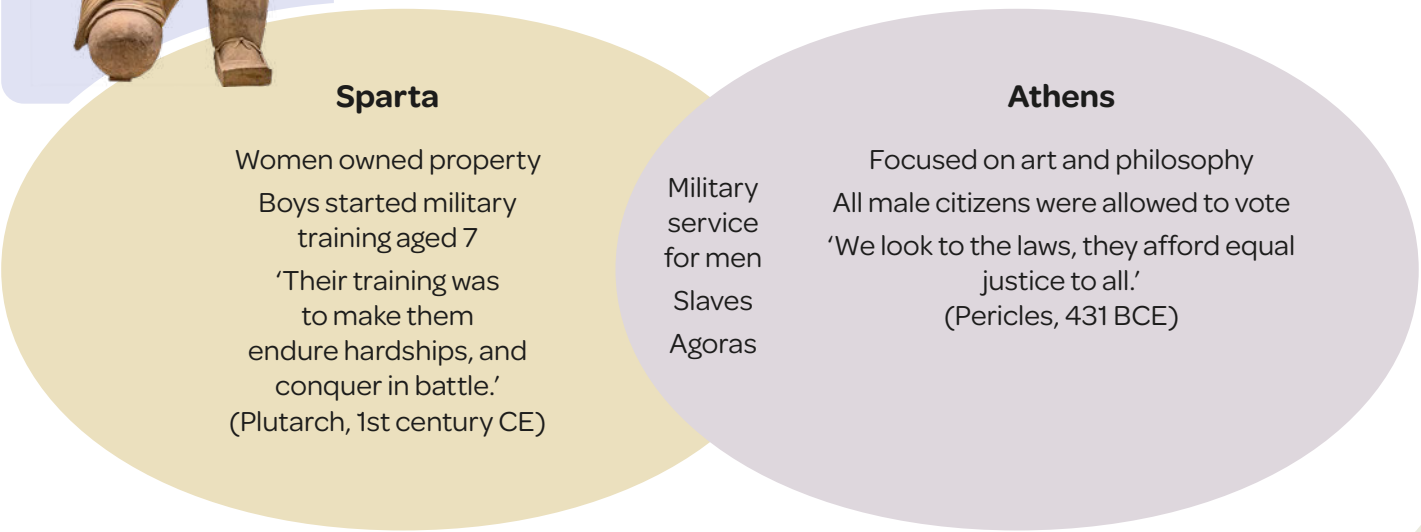
As you locate sources, organise them using the headings and/or table below. This can help determine whether the source is useful (gives you relevant information) and reliable (you can trust it).

Type of source? Primary or secondary?	Origin and purpose of source	Is this source reliable? Does it give you a perspective from the time or an interpretation of the time?	Which question(s) can it help to answer?
Example: sculpture of Terracotta Army warriors (primary source)	**Example:** c. 221–206 BCE Used to guard the tomb of China's first emperor Qin Shi Huangdi	**Example:** reliable – it was found by archaeologists Tells us that legacy was important to Chinese emperors and that they believed in the afterlife	**Example:** • What were the tombs in ancient China like? • Why did people in ancient China build tombs?

Sorting your evidence

Having collected the relevant information and source evidence, make notes to help you form your big question. Summarise or list the key points – this includes quotes from written sources and descriptions of visual sources. You can use a graphic organiser such as a table, mind map, Venn diagram and/or colour coding to sort your evidence.

Here is an example of a Venn diagram comparing the ancient city-states of Sparta and Athens.



Here is an example of an analysis table to evaluate the impact of Ramses II's achievements on Egypt.

What were Ramses II's achievements?	Positive impacts	Negative impacts
• Ruled for over 66 years • Architecture – he commissioned grand architectural projects, including the temples at Abu Simbel and the Ramesseum	• Provided continuity and stability in society • Name was used by future leaders • Successful in battles • 'His majesty was like Sutekh, the great in strength, smiting and slaying among them.' (Unknown Egyptian writer, 1274 BCE) • Showcased Egyptian power to others and reinforced his legacy	• His death led to instability because Egypt was seen as weak without him • Future rulers struggled to govern and maintain his empire • Required intensive labour, (including slave labour) to build his monuments • Later rulers tried to continue his monument building, which contributed to Egypt's economic decline

Step 3: Discovery

Forming and answering your 'big' question

Once you have collected and analysed your evidence, you are ready to form and answer your big question.

This can be a 'what', 'how' or 'why' question. It could also be an evaluative question that requires you to make a judgement. Have a look at the Learning ladder below to find the type of question that is right for you. Can you challenge yourself to try the next level?

	Command term	Definition	Question type	Sample question
5	Evaluate	Make a judgement based on criteria	Evaluate	How important was religion in ancient Greek life?
4	Explain	Show the relationship between things (such as causes and consequences)	Why	Why were temples constructed in ancient Greece?
3	Explain	Provide an explanation of how something happened	How	How did the ancient Greeks bury their dead?
2	Describe	Provide characteristics and features	What (describe)	What was the role of mythology in ancient Greece
1	Identify	Recognise and name	What	What gods did the ancient Greeks worship?

Discuss your ideas with a class member or your teacher. You may find there is more than one answer, or that your answer is different from others in your class. This is fine, as long as you have the evidence to support your view.

Step 4: Curation

Communicating your findings

It can be tempting to present every piece of evidence you have found; however, a historian has to consider what information is most useful in answering their question. You are presenting an explanation or an argument about history, so you need to make it engaging and relevant.

Use the presentation rubric below to select a suitable way to communicate your findings. Again, consider challenging yourself to try the next level.

My question is ...
Firstly, I have found ...
Secondly ...
Thirdly ...
But also ...
Ultimately, I believe ...

Presentation rubric

5	I can evaluate my choice of artefacts for a museum display for how significance or perspectives is communicated.	I can write an extended response to evaluate the causes or consequences of an event or the motivations of a key individual.	I can create a film that includes relevant images, footage, music and narration to evaluate the accuracy of a historical feature film.	I can create a 5-minute podcast that evaluates the causes or consequences of an event or the motivations of a key individual.	I can create a diorama using primary sources and evaluate it for its representation of significance or perspectives.
4	I can explain why I have chosen these artefacts to represent causes and consequences.	I can write an extended response to explain why an event occurred or the motivations of a key individual.	I can create a film that includes relevant images, footage, music and narration to explain why an event occurred, or the motivations of a key individual.	I can create a 5-minute podcast that explains why an event occurred or the motivations of a key individual.	I can use primary sources to create a diorama of a key site or event and write a rationale to explain my decisions.
3	I can explain how these artefacts demonstrate significance OR continuity and change.	I can write an extended response to explain how an event occurred or the role of a key individual.	I can create a film that includes relevant images, footage and narration to explain an event or key individual.	I can create a 3- to 4-minute podcast that explains an event or the role of a key individual.	I can use primary sources to create a diorama of a key site or event.
2	I can label and describe artefacts for a virtual museum.	I can write a TEEL paragraph to describe an event or key individual.	I can create a film that includes relevant images, footage and narration to describe an event or key individual.	I can create a 3-minute podcast that describes an event or key individual.	I can create a diorama of a key event using secondary source images and include descriptive labels.
1	I can identify and label artefacts for a virtual museum.	I can write descriptive sentences about an event or key individual.	I can create a film that includes relevant images and subtitles about an event or key individual.	I can create a 2-minute podcast about an event or key individual.	I can use secondary source images to create and label a diorama of a key event.
	Museum display	**Written response**	**Film**	**Podcast**	**Diorama**
	Presentation format				

How to develop research skills

I can define the research topic

When researching a historical topic, a good place to start is to write a list of keywords for the subject. To do this, think of different ways of saying the topic, or search 'synonyms of ...' and insert the topic. Refer also to the section 'Developing a historical inquiry'. Pay particular attention to the 'Survey' section, which is when you form your initial questions to guide your next steps (page 210).

I know how to find the evidence and information I need

What type of evidence do you need?

Include these words in your search:

- facts, examples, definitions, quotes, artefacts, images, data, statistics
- primary sources, secondary sources
- databases, links, archives, collections, references, research, museums, journals, graphs, tables and letters.

Where is your evidence?

There are many different types of websites to look at: scholarly works, databases, archives, reference sources and information pages.

How do you decide if evidence is credible?

Ask yourself the following questions:

- Is the content relevant? Is it useful for my purpose? Does it contain links to other relevant sources? Is it at an appropriate reading level?
- Is the source believable? What type of source is it? (Published or official sources are better.) Who is the author? (Experts are better.) When was it published? (Newer is usually better.) Is the source biased?
- Is the source true? Is it backed up by other sources?
- Does the source state where its information comes from? This means it is more likely to be credible (able to be believed).

Online search strategies

Following are some search strategies:

- After you search a term, scan the first page of results. If they are not relevant, change your search term.
- Start with a wide search, then get more specific.
- Learn from your search. Change what you are searching for based on what you learn after you start searching.
- Be ready to stop a search if it is taking you in the wrong direction.

Source 1: Q-files is a great website to use when studying history and many other subjects at school.

Tips for searching using Google

- Every word matters.
- The order of the words matters.
- Capitalisation does not matter.
- Punctuation does not matter.
- Specific search terms are better.
- Use these terms to narrow your search: AND, OR, NOT.
- A search with 'filetype:' will find specific files. For example, 'Qin Shi Huangdi filetype:ppt' will find PowerPoint files about Qin Shi Huangdi.
- A search with 'site:' will find things *within* a website. For example, 'boomerang site:nma.gov.au' will find boomerang-related material from the National Museum of Australia website.
- Use the tabs along the top for different types of results such as images, news, videos, maps and books.
- Use a hyphen to exclude words and narrow your search. For example, 'Great Wall-takeaways' will find information about the Great Wall of China, not a fast-food outlet.
- Search for a range of numbers using two full stops between speech marks: '..' For example:
  - '2001..2004' searches between 2001 and 2004
  - '..2004' searches before 2004
  - '2004..' searches after 2004.
- An asterisk acts as a wildcard. For example, 'teen*' will return results with any of the words *teen, teens, teenager* in them.
- Use exact phrase searching by putting speech marks around a search phrase to find exact text.

I can extract information

This stage involves the 'Excavation' and 'Discovery' steps in the 'How to develop a historical inquiry' section (see pages 211–12). You need to gather your evidence and then form and answer your 'big' question.

I can organise and present information

This is when you communicate your findings to your audience. Refer to the 'Curation' section on page 213 for guidance.

I can evaluate my research

You can improve every time you conduct research by asking yourself these questions after you finish:

- What worked? What did not work?
- How could I work smarter next time?
- Can I apply what I have learnt to other situations?
- How could I have improved:
  - the project?
  - the way I worked on my project?
  - the way I managed my time?

Geo Overview

G0

Geography has its own set of concepts and skills to help us study our world and its characteristics, patterns and changes over time. Understanding geographic concepts will help you think like a geographer. Learning the skills to use maps, images, graphs and other sources of data will enable you to explore patterns and conduct fieldwork to answer important questions.

G0.1

Why does geography matter?

Geography is the study of our world and its characteristics, patterns and changes over time. In geography, we focus on two main ideas: human activity and natural processes. We are interested in how humans influence the *space* in which they live and, in return, how the natural *environment* influences how we as humans live. Geographers are respectful of different people's perspectives, values and connections to place. Geographers use ethical practices to conduct fieldwork and analyse observations, maps, information, photographs and other data to understand patterns and answer questions. Geography is key to understanding the world around us, because without geography, you are nowhere!

Thinking like a geographer

As a geography student, you are a trainee geographer! Geography is not just about reading and memorising countries and capitals. You will begin by developing knowledge about people and places, and then conduct inquiries to learn new things about the world. You have most likely already been practising many geographic skills in your day-to-day life.

If you like travelling or the outdoors, geography helps you find your way and explains processes. If you like sport, you may already know a range of countries because of the team names. You may have experience using a map to find a friend's house or using social media to locate the best restaurant near your house.

Source 1: As a geography student, you are a trainee geographer!

Four reasons why geography matters

1 Exploring geography will help you develop powerful skills

Throughout your geography studies, you will develop a new set of skills. These skills will remain with you and will help you in many aspects of your life. Some of these valuable new skills are:

- asking questions
- planning investigations
- working as a team
- critical thinking and problem-solving
- reading maps and navigating
- interpreting data
- creating visual representations
- understanding how other people experience the places they live.

2 Exploring geography lets you see the world (sometimes without leaving your desk!)

Do you want to visit the Amazon jungle? Are you concerned about coral bleaching on the Great Barrier Reef? Do you wonder where you would end up if you travelled 17 525 kilometres north of your exact location right now?

The study of geography allows you to access every corner of the world: either on a fieldtrip, or at your desk using geographical information systems (GIS) such as Esri or Google Earth. Through this process you will come to understand the *interconnected* nature of our world and the roles we all play as custodians of our planet.

3 Exploring geography makes us informed global citizens

Studying geography helps us to understand ourselves and our planet. It helps us develop respect for social and cultural diversity and develops an understanding of environmental **sustainability**. You will explore:

- physical (natural) geography
- human (built) geography.

Physical geography is the study of the Earth's landscapes, landforms and natural processes, some which have been occurring for hundreds of thousands of years. Human geography is the study of how we interact with this natural world.

You might investigate how we change environments; how we use the environment; how different cultures, languages or religions are spread around the world; or even how we break up the world into land masses called continents and countries with political borders. The study of geography will empower you to be an active global citizen who makes informed decisions.

4 Future careers and pathways

Studying geography doesn't mean you have to become a cartographer (someone who draws maps). Geography opens doors to a huge range of potential study and career options from agriculturalist to zookeeper!

Learning ladder G0.1

1. Why are skills so important in geography?
2. What do you already know about geography? Brainstorm a word or phrase that relates to geography for every letter of the alphabet. (Hint: Your 'x' word could be *x*-axis on a graph!)
3. Geography is an 'umbrella' study that brings in many other subjects, such as maths, science, history, civics and citizenship, and economics and business. List five things that you enjoy learning about and explain how they link to geography.
4. Look at the image of Huangguoshu Waterfall National Park on page 222. Identify one example of human activity and one natural process that you can see in this image.
5. As a class, discuss how we all use geography in everyday life. Think about apps, books or even plans you might make.

Where can geography take me?

Studying geography opens a wide range of career pathways because it combines elements of social science, environmental science, biology, outdoor education and spatial analysis. You may be surprised as to where a geographical career could lead you!

Source 1: Geography can lead to a large range of career possibilities.

Environmental consultant: Advise organisations on environmental issues, such as sustainability practices, impact assessments and compliance with regulations.

Environmental scientist: Study the environment and develop solutions to environmental problems, such as pollution, climate change and natural resource management.

Climatologist: Analyse climate patterns and their effects on the environment and human activities, often working in research or policymaking roles.

Water in the world

Indigenous water officer: Manage and protect water resources by integrating traditional knowledge and cultural values with contemporary practices to ensure sustainable and respectful water management.

Natural resource manager: Manage and conserve natural resources, such as forests, water, and minerals, to ensure sustainable use and environmental protection.

Hydrologist: Study and analyse water distribution and quality using geographical data and models to manage and protect water resources.

Travel and tourism manager: Utilise geographical knowledge to manage and promote travel destinations, plan tourism strategies and enhance visitor experiences.

Geographical careers

Place and liveability

Geopolitical analyst:
Assess global political and economic issues from a geographic perspective to provide insights on international relations and security.

Urban and regional planner:
Design and implement plans for land use in urban and rural areas, considering factors like zoning, infrastructure and community needs.

Transport planner:
Develop transport systems and policies to improve the efficiency and safety of travel networks.

Surveyor:
Conduct land surveys to measure and map out property boundaries, construction sites and natural features. Surveyors use geographical and spatial data to ensure accurate planning and development.

Excavation specialist:
Use geographic knowledge to guide excavation and earth-moving activities, ensuring that site preparation and construction adhere to spatial and environmental considerations.

Landscape architect:
Design outdoor spaces and landscapes, using geographical and environmental data to create functional and aesthetically pleasing environments.

Real estate analyst:
Evaluate properties and markets, using geographical data to inform investment decisions and property development.

Civil engineer:
Apply geographic knowledge to infrastructure projects such as roads, bridges and drainage systems. Civil engineers use geographical data to assess site conditions and design solutions.

How do I think like a geographer?

Geographic concepts

Use the acronym **SPICESS** to help you remember the seven geographic concepts:

1. **S**pace
2. **P**lace
3. **I**nterconnection
4. **C**hange
5. **E**nvironment
6. **S**cale
7. **S**ustainability.

You may often use these concepts without even realising; for example, by thinking, 'Now the new freeway is built, how far is it to my best friend's house?' you can start exploring the concepts of space, place, change and scale.

As you get more confident and build your skills in geography, these seven concepts will help frame your thinking and understanding of the world around you.

Source 1: Huangguoshu Waterfall National Park in Guizhou province, China. This is one of the largest waterfalls in East Asia.

S Space

In a geographical context, *space* refers to the way that we use, *change*, manage and distribute things on the Earth's surface. For example, this *space* is classified as a National Park. While tourists are allowed to visit this *space*, they must be respectful of the *environment* and remain on the designated pathways.

P Place

The concept of *place* can be described using characteristics and human meaning. The Huangguoshu Waterfall National Park has environmental and historical value to both locals and conservationists. It is characterised by its fast-flowing waters and lush surrounding vegetation. The scenic area attracts millions of tourists each year.

I Interconnection

Interconnection is the idea that two things or phenomena are related, interact or are linked in some way. For example, there is an interconnection between the abundance of trees and the movement of water through this *environment*. Without this water source, the trees would not be able to survive in such quantities.

C Change

Change refers to how a *place* is altered due to shifts in the environment or to meet the needs of humans. Change can be positive or negative, and can occur over short or long time periods. In this *place*, humans have *changed* the *environment* by adding boardwalks, handrails and access points so that tourists can view the waterfall.

E Environment

An *environment* can be defined by its **geographical characteristics**. Some environments are largely natural and are untouched by humans, such as coastlines, islands and forests. Other environments have undergone significant *change* and are largely unnatural, such as cities and other urban areas. Within environments we can observe processes, interconnections between **phenomena** and change over time. This image is an example of tourists visiting a natural environment.

S Scale

Scale usually refers to the size of something. Scale can be literal, such as a scale on a map using data to show you how big something is in real life. It can also be used as a word when describing a region. For example, patterns can exist on a local, regional, national or global *scale*. This image is an example of tourism on a local scale.

S Sustainability

Sustainability is the concept of maintaining and preserving resources and environments for future generations, by using sustainable, **renewable energy** for example. Water is a renewable resource, but it needs to be used sustainably especially in areas with low levels of rainfall.

Space

The concept of space involves looking at the way things are arranged on Earth. The study of space has two key components:

1 location – where a space is found on Earth
2 spatial distribution – the arrangements and patterns of natural and human features on the surface of the Earth.

Understanding location

Location is recognising where a space is found on Earth. When you are trying to recognise location, ask: How can I describe the location? Where on Earth is it found? What does the environment look like?

Location can be relative or absolute. A relative location is a description of where a place is in comparison to another place. You may describe a relative location using characteristics of the land, political territories (such as countries) and the points of a compass. For example, Source 2 shows that the space the elephants are occupying is swampy grasslands located in the Okavango Delta, in the country of Botswana on the continent of Africa. Botswana is around 400 kilometres (by car) north-west of Johannesburg, South Africa.

A more accurate way to pinpoint the location of a place is to use a grid. On maps of large areas, such as countries of the world, we use the lines of latitude and longitude to give the absolute location of places. Detailed topographic maps also use a grid system to find the absolute location of places (discussed on page 432). For example, if you are traveling to Botswana by plane to study the elephant herds, you may land at Sir Seretse Khama International Airport located at 24°33'19"S 025°55'06"E.

Absolute location can also be an address or other fixed-point reference on Earth. For example, you may live at 1 Sunhill Avenue in Ringwood North, Victoria, Australia.

Source 2: Aerial view of a herd of African elephants in the Okavango Delta, located in north-western Botswana in southern Africa. Large animals such as elephants can be observed from the air using planes, helicopters, drones and even satellites. Surveys of elephants help us understand how many elephants are found in a space and where they are located within that space. Understanding the spatial distribution of elephants helps geographers develop plans to manage both the health of this endangered species and the environments they live in.

Understanding spatial distribution

When you describe a spatial distribution, ask: Can I see a pattern? Is the feature I am looking at spread out in a line or bunched together? Can I see patterns? Are there any examples or data to help quantify what I see? You may use terms such as **clustered** (grouped together), **linear** (in lines), **random** (all over the place with no clear pattern), **uniform** (equal in distribution) or **uneven** (not the same as other places) or **even** (following a similar pattern to other places) to identify the way things are distributed.

For example, the aerial view (from above) in Source 2 helps us see that the elephants have formed a linear pattern (they are in a line) as they move through the land.

Spatial distributions can help us develop strategies for action to improve or manage a situation. For example, by carefully analysing John Snow's map in Source 3, it is clear that nearly all cholera deaths were found close to the Broad Street pump and not the other pumps in Soho.

Actions suggested by the findings were to shut down the Broad Street pump and to make sure water supplies in other areas were kept clean to stop cholera from reoccurring.

Source 3: Dr John Snow created this dot distribution map in 1854 to help understand why so many people in London's Soho district were dying from cholera, a water-borne disease. Snow's map showed that most deaths occurred near the Broad Street pump, where people collected their water. The pump was turned off to prevent further deaths, and Snow proved that cholera was spread via the water, not from the air as most people believed.

Map of 1854 cholera outbreak by John Snow, drawn and printed by C. F. Cheffins

Source: John Snow

Place

The concept of place can be described using characteristics and human meaning. Places can range in size. The Sahara Desert, the world's largest hot desert, is a place that covers 9.2 million square kilometres. Your home is also a place. Places can be natural (shaped by the environment) or built (made by humans).

Characteristics of a place

Describing the characteristics of a place means recognising features in the landscape and detail in them. Satellite images (Source 5) show physical features such as the desert, creeks and the gulf; and human features such as buildings, roads and reclaimed land. Map legends may also help identify the physical and human features of a place.

Places have meaning

A location becomes a place when humans attach emotion or meaning to it. People have different experiences in places and feel connections to them. Consider the sense of security you have when visiting a close relative's house or the sense of belonging you feel when attending your church or local sporting club. We describe this connection to a place in geography as 'sense of place'. A person's attachment to a place helps form their identity and can connect them to other people, their ancestors or culture.

In Source 4, the relationship between the human and physical characteristics is a close one. For First Nations Peoples, Country is much more than a place. People are a part of their Country and their Country is part of them.

A place can be as small as your bedroom or as big as a country or region. Places are dynamic and are constantly changing due to environmental processes and human influences.

Source 4: Place has a much deeper meaning for First Nations Peoples. They have a deep spiritual, physical, social and cultural connection to the land, often described as **connection to Country**. Palyku woman Ambelin Kwaymullina explains: 'For Aboriginal peoples, Country is much more than a place. Rock, tree, river, hill, animal, human – all were formed of the same substance by the ancestors who continue to live in land, water, sky. Country is filled with relations speaking language and following Law, no matter whether the shape of that relation is human, rock, crow, wattle. Country is loved, needed and cared for, and Country loves, needs and cares for her peoples in turn. Country is family, culture, identity. Country is self.'

Places are connected

It is difficult to study one place in isolation. Places are connected through social, economic, environmental and political factors. For example, the coastal positioning of Dubai (Source 5) provides opportunities for trade with other places. It also is a good place to travel to take advantage of the warm climate and expansive beaches.

Places can also be compared, and similarities and differences can be studied. You might compare Dubai to Singapore, which has also reclaimed land to increase rates of urbanisation. You could compare Dubai to other desert cities such as Las Vegas, United States, to analyse how and why these places have developed rapidly over time.

United Arab Emirates

Source: Getty images/ Satellite Earth Art

Source 5: Dubai is located within the Arabian Desert, on the coast of the Persian Gulf. The centre of Dubai is dominated by multistorey skyscrapers, including the Burj Khalifa, the world's tallest building. To create more usable space, land has been reclaimed from the Persian Gulf in the shape of palm trees and a world map.

Interconnection

The concept of interconnection helps geographers understand the connections between two or more things and how these interactions affect environments and the way we live. Interconnection is the idea that two things, or phenomena, are related, interact or affect one another. For example, heavy rainfall in one area may impact people who live on floodplains hundreds of kilometres away.

Describing interconnection

The first step in understanding interconnection is to recognise that things are connected. For example, imagine you have bought new jeans made in China. There are links between the farms that grow the materials, the company that designs the jeans and the manufacturer in China. A further connection happens when the jeans are transported from China to where you buy them in Australia.

Phenomena are things we observe happening in an environment. A change or action of one phenomenon can affect another. For example, heavy rainfall increases water flow in river systems, causing rivers to overflow. This overflow can lead to flooding in surrounding areas, affecting farmland and local townships. In Lismore, NSW, Wilsons River and Leycester Creek drain to the north and north-east. When these areas experience high rainfall, the water discharges downstream through Lismore and forms a flood 'choke point', resulting in city inundation. Extreme rainfall in February and March 2022, along with already saturated soils from a wet season, deforestation in the area, and lack of preparation, resulted in a significant flooding disaster. Many of Lismore's residents live in the low-lying basin region, which is prone to flooding events.

Interconnections and taking action

Understanding interconnections can help you answer questions about geographical challenges and consider strategies for action. For example, for Source 2 in spread 3.7 (page 325) you could ask the following questions:

- How can we use our understanding of interconnections to help prepare for geographical challenges in Lismore?
- How can governments help respond to flooding events?

Recommendations for improved flood mitigation and responses in Lismore include:

- raising **levees** and using pipelines to divert floodwater away from Lismore
- relocating the city centre and rezoning the worst-affected residential and commercial areas
- reforestation of the river valleys and the re-establishment of wetlands drained for farming to reduce water in the river in times of flood.

In Australia, most disaster funding is spent on helping flood victims, repairing the impacts of floods and building infrastructure to divert floodwaters away from human settlements. Disaster relief, recovery centres, recovery packages and pod villages were among the responses to the 2021–22 eastern Australia floods.

Source: © Nearmap

Change

Change refers to how a place is altered due to shifts in the environment or to meet the needs of humans. Change is easy to see when it occurs rapidly, such as a flood, a landslide or clearing a forest. Changes over a long period of time, such as climate change or the movement of landmasses, are more difficult to observe. Change can be positive or negative, and geographers play a role in helping to manage change.

The scale of change

Change occurs all around us and on different scales (see page 232). You might notice a new building or road in your area, or you could see a seasonal change such as blossoms appearing on trees. Maps and graphs can help us identify change across larger areas. For example, the annual rainfall for Sydney in 2022 was much higher than previous years and twice the average rainfall (Source 8).

Change can also occur over different time scales. Identifying short-term change is usually easier than recognising changes over the longer term. We can usually see the results of a landslide or flood (Source 7) or building on land immediately. For example, Sources 6 and 7 show the change that occurred in Condobolin over a short period of time in November 2022. The Lachlan River flooded onto the surrounding floodplain, covering farms and roads. Longer-term changes such as movements in the Earth or **weathering** of the land are harder to observe as they can take place over hundreds, thousands or millions of years. Geographers look for evidence of change, such as the shapes of features in the landscape, to understand how things have altered.

Source 6: Satellite image of the Lachlan River at Condobolin in central-west New South Wales on 6 July 2022

Source: Copernicus Sentinel data 2022

Changes and taking action

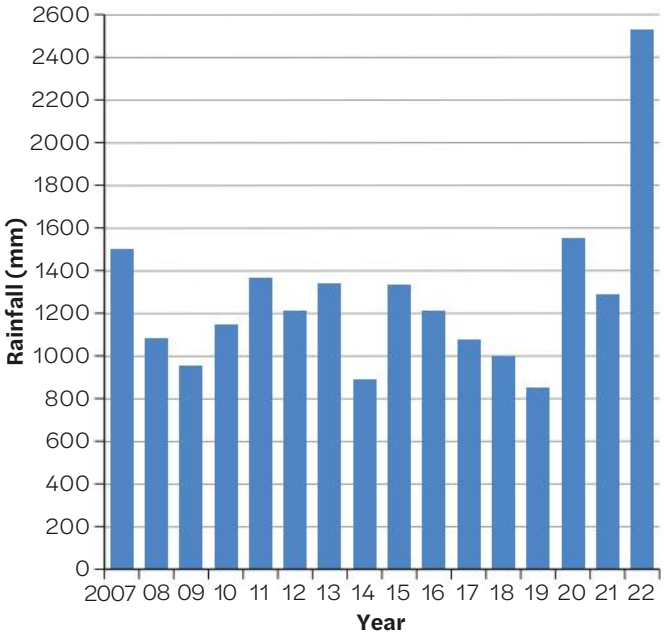
Explaining how change occurs requires a higher level of understanding. You need to ask 'why' the change is occurring. For example, in Source 9 we can ask: Why has the water in the Lachlan River spilled over its banks at Condobolin?

The Lachlan river is part of a drainage basin that covers 84 700 square kilometres of land. When water falls anywhere in this region, it can flow into creeks that flow into smaller rivers that eventually flow into the Lachlan River. Heavy rainfall hundreds of kilometres away can lead to flooding at Condobolin.

Once you explain why a change has occurred, you can analyse the implications of the change. Analysis involves further research and thought about how to manage the change sustainably. For example, an analysis of the flood event shown in Source 7 might involve asking:

- Which areas of Condobolin are prone to flooding?
- What warning system is in place to measure the height of the water upstream? When is the river height expected to peak at Condobolin?
- What action do residents of Conobolin need to take? Where can sand bag levees be built? Where is a safe place of refuge for the community?

Total rainfall recorded each year on 5 July at Sydney, Observatory Hill (mm)



Source: Bureau of Meterology

Source 8: Average rainfall across New South Wales in 2022 was the second highest on record (since 1900), with many places recording their highest ever annual totals. New South Wales' average annual rainfall in 2022 was 863.6 millimetres, 55 per cent above the 1961–1990 average. Sydney (Observatory Hill weather station) recorded its highest annual rainfall since records began in 1858. The 2022 total rainfall for Sydney was 2530.0 millimetres, more than double the annual average rainfall for the city.

Source: Copernicus Sentinel data 2023

Source 7: Satellite image of the Lachlan River in flood at Condobolin in central-west New South Wales on 18 November 2022

Environment

Environments are defined by their **geographical characteristics**. Natural or physical environments are those that are largely untouched by humans, such as forests, deserts and mountains. Human or built environments have undergone significant change, such as cities, towns, mines and farms. Studying the concept of environment helps geographers understand the processes driving the formation of natural environments and manage changes humans are making to it.

Value and impacts

The physical and built characteristics of environments help provide humans with resources; for example, providing a place to live, grow food, access water, collect materials and recycle waste. Environments also provide cultural, spiritual and **aesthetic value**. Technology helps us change our surroundings to allow for growing populations and changing needs and economies, but it also brings new problems. To manage changes in the environment effectively, we need to understand how both nature and human activities influence it, and apply geographical knowledge to handle risks and build stronger, safer communities.

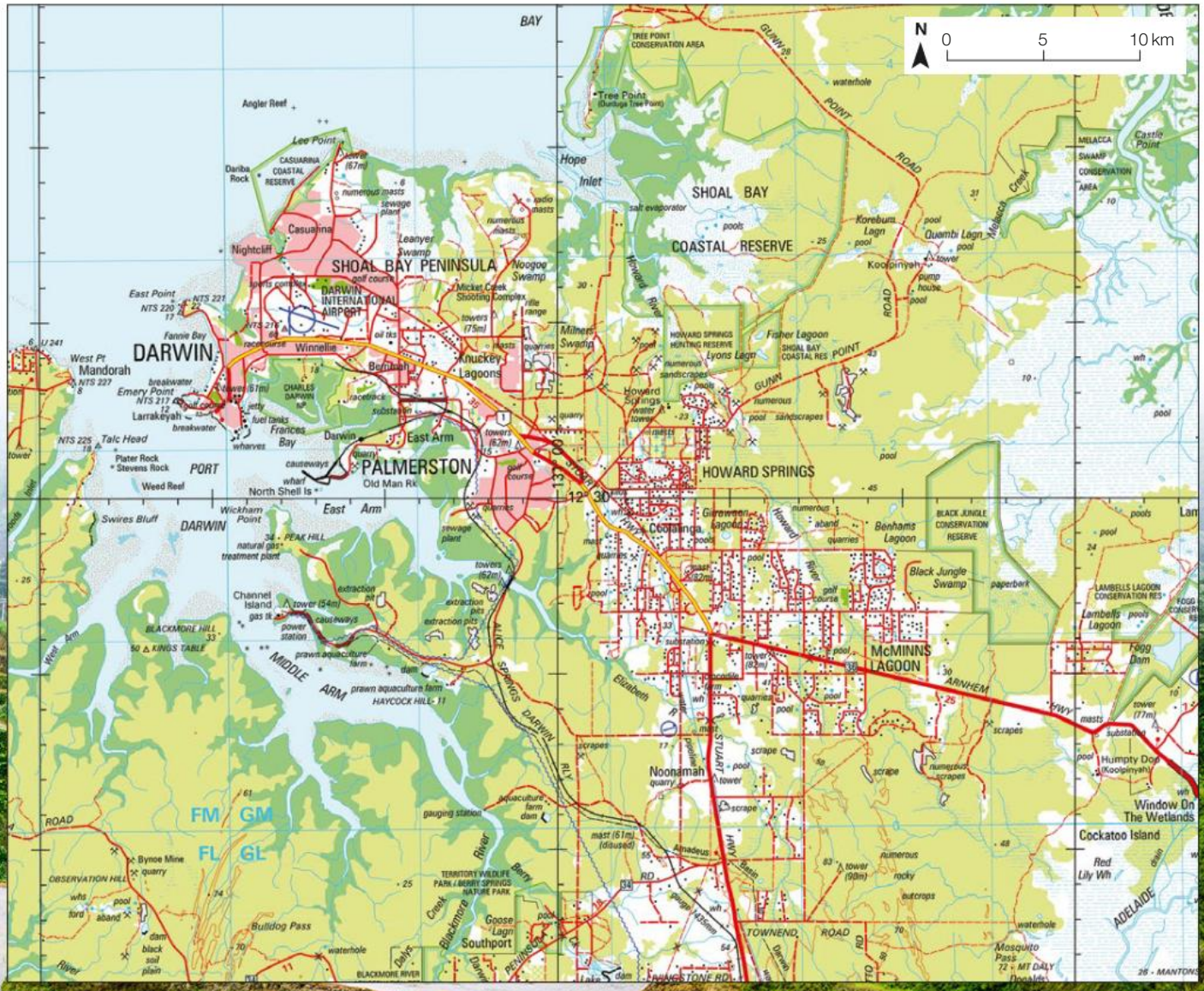
Each environment presents some risk or hazards to humans such as floods, drought or bushfire. Human actions such as deforestation and poor infrastructure can worsen these impacts. While we can reduce risks of hazards through prevention and preparedness, we cannot eliminate them.

Source 9: Rice terraces and a farming village in Longsheng, Guangxi province, China. Farmers in this region have greatly changed the physical mountain environment to form a distinctive built environment of terraced rice farms.

Source 10: Topography is the study of the surface of the land. Topographic maps show the different environments present on the Earth's surface. This topographic map is of the tropical region around Darwin. It shows few contour lines, indicating the land is very flat. Built environments shown include the cities of Darwin and Palmerston (shown in pink) and the suburban areas of Howard Springs and McMinnis Lagoon (black squares). Natural environments include forests (light green), mangroves (dark green) and swamp (blue dashed lines).

A topographic map of Darwin and surrounds, NT

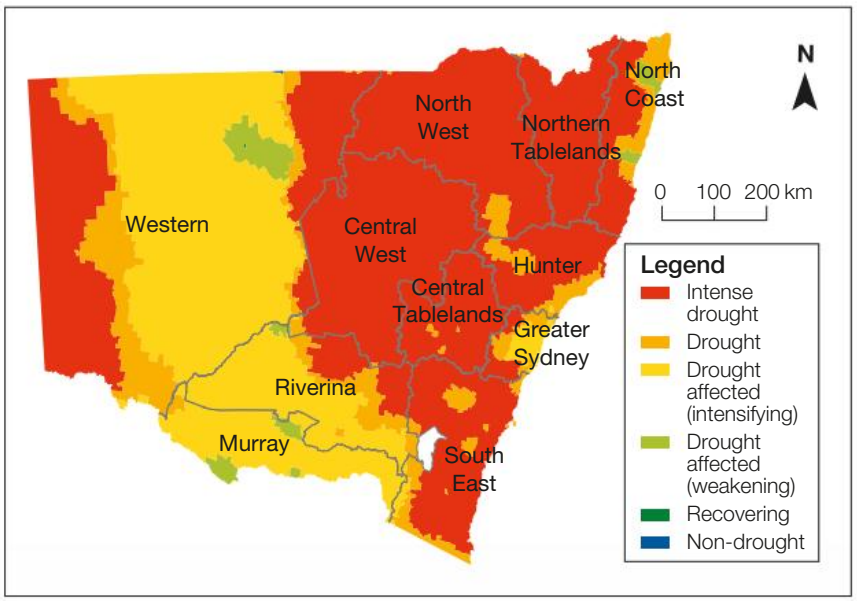
Source: Commonwealth of Australia (Geoscience Australia)



Scale

Physical scale relates to the size of an area. Geographers study phenomena and patterns at a range of different scales. Different outcomes and explanations can be achieved at local, regional, national or global scales. For example, drought conditions may make it difficult for your garden to grow at a local scale or may be part of a global climatic pattern such as El Niño.

NSW drought 31 Jan 2019 to 31 Jan 2020 Source: Matilda Education Australia



Source 11: Local scale is a specific place such as a neighbourhood, farm or town. At the local scale, geographers recognise that every place on Earth has unique natural and human features. This farm in Queensland faced severe drought in November 2021, and the sheep had nothing to eat.

Source 12: Regional scale refers to a geographical area that is larger than a single community but smaller than a nation. This map shows how the region of New South Wales and smaller regions within it were all facing drought in the 12 months to 31 January 2020. The regions in eastern New South Wales, such as the Northern Tablelands, were facing intense drought conditions.

Geographers explain four different levels of scale to help guide their investigations.

Local scale is a small space on Earth such as a community, town or farm. Studying a geographical theme at the local scale helps identify outcomes for people. For example, the farmer in Source 11 had to purchase grain and hay to feed his sheep because the drought destroyed the pasture on the farm.

Regional scale refers to spaces that are larger than a local scale, but smaller than a national (whole country) scale. Examples of regional scales studied in geography include the states of Australia; large natural areas such as deserts, forests and alpine areas; and large administrative areas such as Australian Antarctic Territory or the Murray–Darling Basin. Source 12 shows examples of the level of drought in regional areas in New South Wales. The state itself is also an example of a regional scale.

National scale refers to a country or nation. Geographical issues at a national scale affect the entire country. Australian rainfall patterns caused drought conditions to occur at a national scale in Australia in 2017–20. Australia's government had to help farmers during this period and ration the water available in regions suffering drought. During periods of drought, countries also produce less crops and reduce livestock, which impacts.

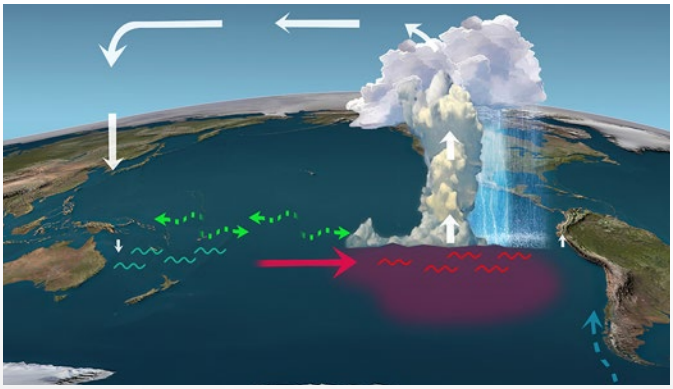
Global scale studies patterns that occur across the whole world. Global phenomena and issues can help explain conditions occurring at other scales. Source 13 shows that Australia's drought in 2017–20 was driven by a global climate phenomenon known as El Niño.

Impacts across scales

Often geographers need to ask 'why' an event or pattern is occurring and compare its effects at a range of scales. For example, Sources 11, 12 and 13 refer to the drought that occurred in Australia in the 2017–20 period.

At the global scale, the El Niño climate pattern delivered high rainfall in the Americas in the eastern Pacific and low rainfall to Australia in the western Pacific. At a national scale, Australia had to deal with drought conditions impacting the south-east of the nation. Intense drought was particularly felt throughout eastern New South Wales, where water supplies were threatened. At the local level, residents had their water rationed and farmers lost crops and had to buy feed for livestock.

The global climate system, El Niño



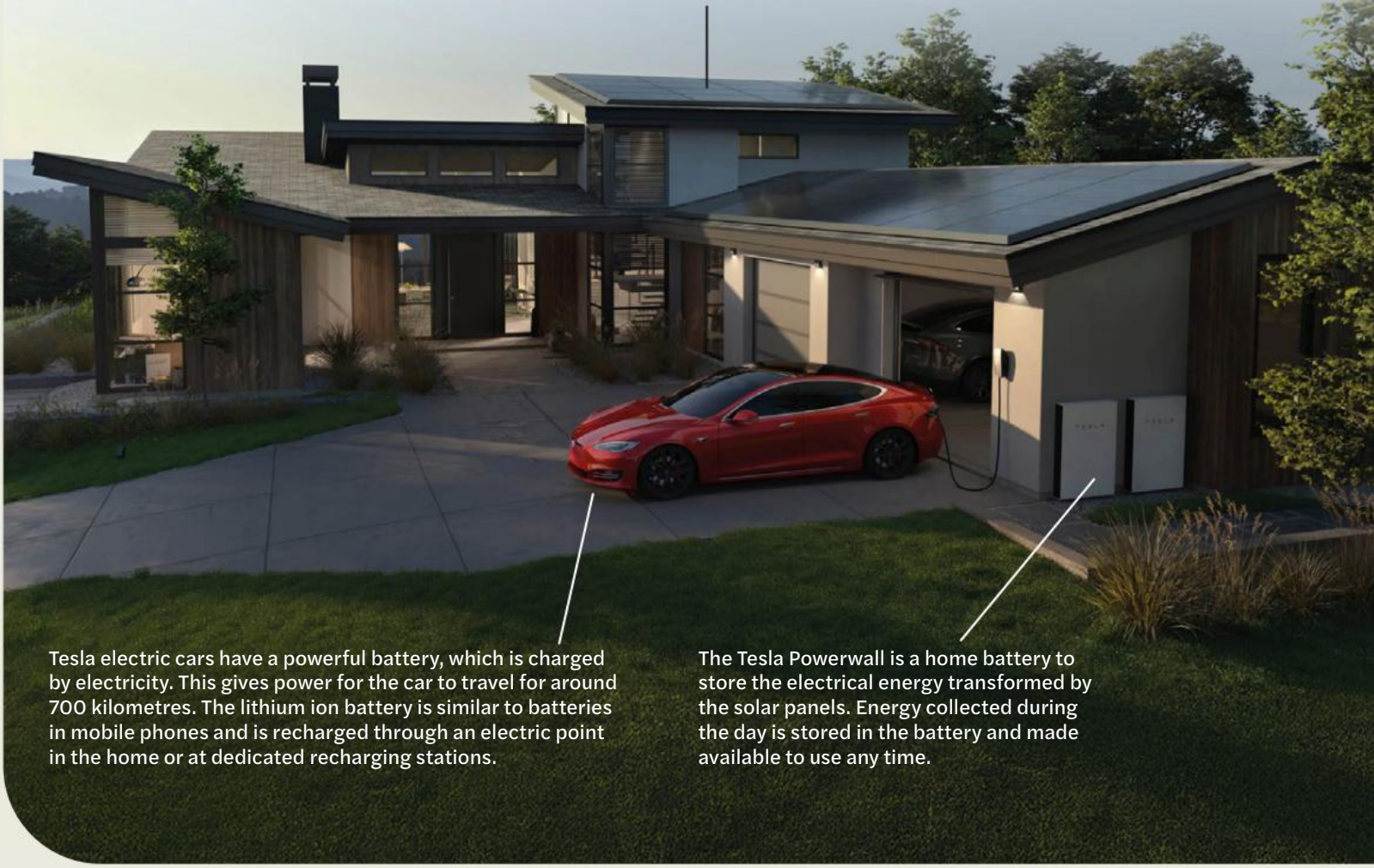
▲ **Source 13:** Global scale refers to broad patterns that occur across the world. This diagram shows the impact of the global climate system known as El Niño. It sometimes occurs in the Pacific Ocean, but El Niño affects weather all over the world. In El Niño years, very high rainfall is experienced in the Americas while Australia and other parts of the world suffer drought.

Sustainability

Sustainability is the concept of maintaining and preserving resources and environments for future generations. Living in a sustainable way means that we meet our current needs without compromising the needs of future generations. Geographers use the concept of sustainability to investigate how resources can be carefully managed to ensure they will still be available in the future.

The first step in understanding the concept of sustainability is to recognise resources as renewable or non-renewable. **Renewable resources** will naturally renew themselves if we do not use them too quickly. We need to manage renewable resources to ensure they have a chance to regenerate. Examples of renewable resources include water, trees and solar energy. **Non–renewable resources** are resources that are only available in limited amounts. If we overuse them, they will run out. These resources include the fossil fuels: oil, natural gas and coal, which take millions of years to form inside the Earth. Source 15 shows that in 2020, most of the energy used around the world came from fossil fuels.

Source 14: Tesla is an American electric vehicle and alternative energy company. The company's mission is to speed up the world's transition to clean, sustainable energy resources. Tesla designs and manufactures electric vehicles, battery energy storage and solar panels.

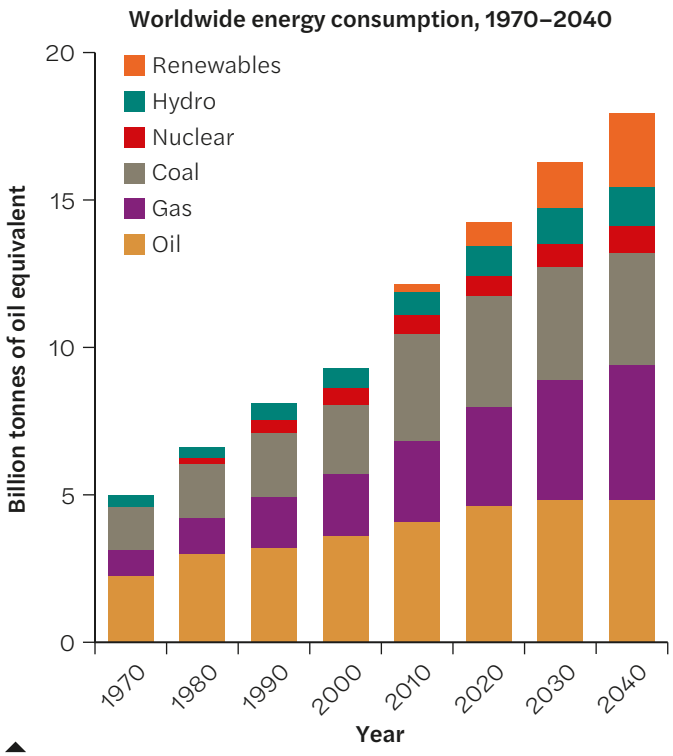


Sustainable practices

We need to ensure there will be adequate resources left for future generations.

- Reduce, reuse, recycle: Reduce the amount of waste by reusing bags for shopping and refilling drink, soap and shampoo bottles rather than disposing of them; and using washable cloth wipes and nappies in place of disposable nappies and paper towels.
- Use renewable energy: Use renewable energy such as hydroelectricity and wind power. Install solar panels on the roof to provide renewable energy to your home and choose an electric car that uses fewer fossil fuels (see Source 16).
- Use fewer resources: Reduce your impact by changing your everyday choices: turn off appliances when you are not using them, dress warmly rather than using heating, and walk, cycle or use public transport when you can.

Source 14 shows a sustainable home that uses special solar roof tiles to capture energy from the sun. The solar power is stored in batteries and means the home and car can run on electricity without using non-renewable resources such as coal.



Source 15: This graph shows global energy consumption by energy type (projected to 2040).

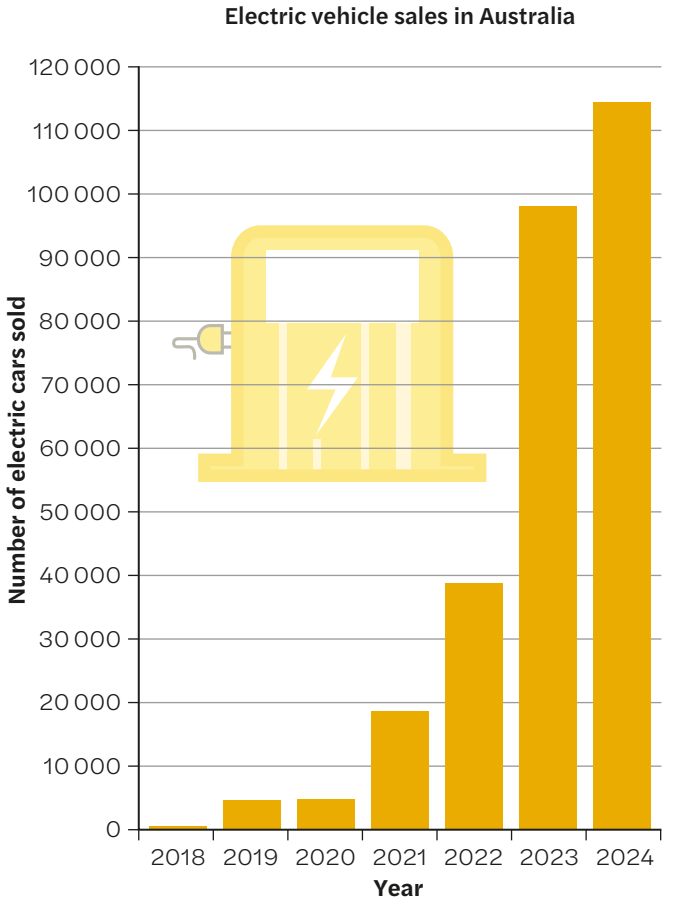
Source: EIA

Importance of sustainability

Explaining the importance of sustainability requires you to ask 'why' the sustainability practice is a good thing and link it to outcomes at different scales. For example, in Source 16 we can ask why an increase in electric car sales is a good thing for the world.

An advantage of electric cars is that they do not consume as much non-renewable energy as cars with petrol engines. A further advantage is that electric cars don't release carbon dioxide (CO_2) that contributes to global warming. A disadvantage of electric cars is that the electricity may have been produced from a non-renewable resource, such as by burning coal.

People with different environmental worldviews can disagree on how sustainability issues like climate change and renewable energy should be managed. Pro environment and pro-development worldviews need to be considered when framing solutions.



Source 16: The number of electric vehicles sold in Australia has increased a lot in recent years.

Source: Matilda Education Australia

Water as a resource

G1

WHY DOES WATER MATTER? 240

WHERE IS WATER IN AUSTRALIA? 256

HOW DOES WATER FLOW THROUGH AN ENVIRONMENT? 246

G1.0

How can I understand water resources?

Without water, no living thing can survive. Two-thirds of the Earth is covered in water, but just 2.5 per cent of this water is fresh water. Most of the Earth's fresh water is locked up as ice. Fresh water is one of our most precious environmental resources, but increases in population are putting the quality and availability of water at risk.

Learning ladder

The Learning ladder lists the knowledge and skills you will develop throughout the year, with five levels of increasing difficulty. By mastering foundational knowledge and skills at the lower levels, you will build a solid understanding that prepares you to tackle more advanced concepts and skills as you progress towards the top.

Steps in knowledge progression	Water as a resource	Uses of water	Value of water	Planning and collecting	Representing information
5	I can analyse how humans impact the flow of water.	I can analyse how water use impacts its importance.	I can explain the interconnection between environmental, economic and cultural uses of water.	I can use geospatial technology to record data.	I can follow ethical practices when working with data.
4	I can explain how water changes places.	I can explain how water use impacts its availability.	I can discuss the value of water to Aboriginal and Torres Strait Islander Peoples.	I can gather primary data.	I can use geospatial technologies to create maps.
3	I can explain the flow of water.	I can summarise sustainable water use.	I can explain the value of environmental water.	I can gather information from reliable secondary sources.	I can use geographic conventions to construct maps.
2	I can describe the water cycle.	I can describe how water uses are interconnected.	I can summarise how groups value water.	I can plan an inquiry.	I can represent data and information.
1	I can classify resource types.	I can identify water uses.	I can identify the value of water.	I can ask open-ended questions.	I can select data relevant to a question.
	Water as a resource			Geographical inquiry	

Source 1: African elephants wade in a waterhole in Botswana. Fresh, reliable water is vital for human and natural processes.

	Interpreting information	Making conclusions	Strategies for action	Presenting ideas
5	I can use geographical concepts to structure data analysis.	I can evaluate ethical considerations.	I can consider perspectives to evaluate strategies.	I can analyse the implications of phenomena.
4	I can predict change to patterns.	I can assess the reliability of data.	I can design strategies.	I can explain interconnections with data.
3	I can explain distributions and patterns.	I can write evidence-based conclusions.	I can predict the impact of a strategy.	I can support explanations with data.
2	I can describe distributions and patterns.	I can describe the impact of geographical phenomena.	I can explain a strategy.	I can explain the relevance of information.
1	I can read graphs and maps.	I can answer geography questions.	I can describe a strategy.	I can describe phenomena using geographical terms.
		Concluding and decision-making		Communicating

Steps in skill progression

Why does water matter?

Water connects places around the world as people settle near **freshwater** resources to access water for drinking, cleaning, farming, industry, power generation, transport and recreation. Human activity clusters around the available fresh water in rivers, lakes and underground sources. These **water resources** can vary according to the amount of rainfall received and how quickly water resources are used. Water needs to be shared by communities and carefully managed.

The availability of freshwater resources is not evenly distributed. Availability and access vary significantly based on geographic location, climate and seasonal rainfall patterns. Places with abundant rainfall and well-managed water systems have access to vast water resources for agriculture, sanitation and living, while regions experiencing drought or excessive water use face significant challenges. This variability in water availability means that some communities may struggle to meet their water needs, leading to conflicts over resources.

Careful management is important to ensure that water is used sustainably. Water must be shared among communities, considering the needs of residents, agriculture and industry while also protecting natural environments and ecosystems. Over-use, pollution and climate change threaten freshwater resources.

Gujurat population distribution

Source 1: A dot map showing population density in the state of Gujarat, India

Source: Matilda Education Australia

Source 2: People crowd to get water from a large well in the village of Natwarghad in the Indian state of Gujarat in June 2003. The state was facing its worst drought in over a decade. Dams, wells and ponds dried up as the region sweltered in temperatures over 44°C. People were forced to walk long distances and wait for hours around village ponds for water tankers to arrive.

Source 3: Heavy water containers are balanced on the heads of young girls to carry water back to their village.

Learning ladder G1.1

Uses of water

1. List the ways water is used around the world.
2. Why is fresh water important for human health and survival?
3. Source 2: Discuss with a partner why it is important that people in Gujarat use fresh water sustainably.
4. Source 3: How might use impact the availability of water in this place?

Planning and collecting

1. Source 2: Complete a 'See, think, wonder' for this photograph.
2. Source 3: Create three short interview questions you could ask these children to help answer the inquiry question, 'Why does fresh water matter?'
3. Create a photo essay to illustrate how one of the following processes has changed the characteristics of a place:
   - **a** drought
   - **b** flood
   - **c** irrigation.
4. Create a field sketch of an environment in your school that illustrates varied water uses.

Make it spicy

Source 2: What is the location of this *place* and why have so many people gathered here at this time?

HOW TO

Photo essays, page 422; place, page 226; planning and collecting, page 410; sketching and annotating, page 416

What type of resource is water?

Humans depend on the Earth's **environmental resources**: water from rainfall; food from the land and oceans; and energy from the atmosphere, land and water. Some environmental resources will last forever (they are perpetual) and others are renewable. But some resources are not renewable – if we overuse them, they will run out.

Types of environmental resources

Renewable resources

Renewable resources will naturally renew themselves if we do not use them too quickly. We need to manage renewable resources to ensure they have a chance to recover (or regenerate).

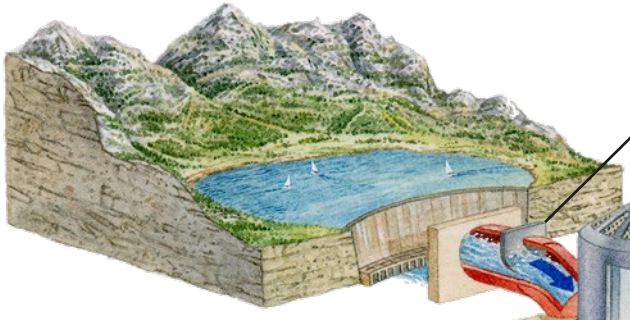
Fresh water is considered a renewable resource, but this does not mean that it is an **unlimited resource**. Around 1 per cent of the world's fresh water is readily available for human use, and the rest is trapped as ice or groundwater. Water pollution and population increases can put our freshwater resources at risk. Therefore, we need to make sure we are conserving and protecting our available freshwater sources.

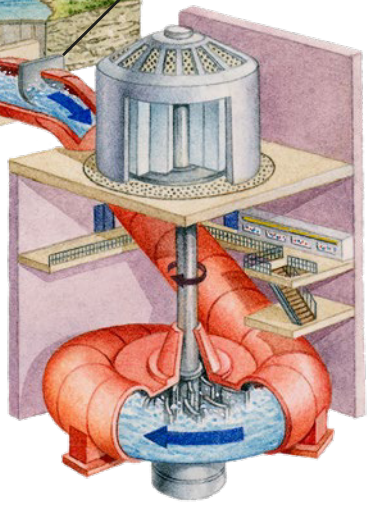
Perpetual resources

Perpetual resources are renewable resources that don't run out, regardless of how much they are used. Examples of perpetual resources include:

- wind energy
- solar energy
- waves and tides
- **geothermal energy**
- **hydroelectricity**.

Source 2: Flowing water connects places and is used and stored by humans as a resource for drinking, growing food, electricity generation, waste removal and transport.





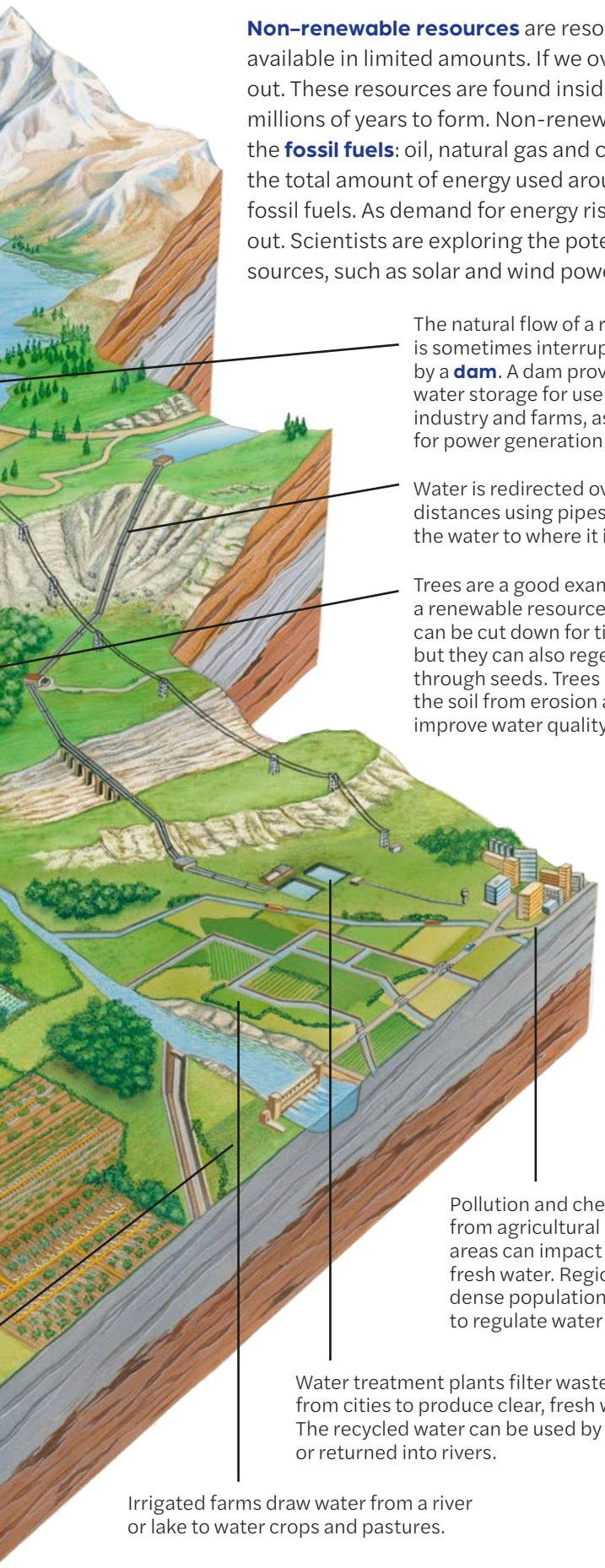
Source 1: Hydroelectricity is electricity generated from fast-moving water. Water held back by a dam wall is released into pipes, and the water gathers speed as it drops. When the water hits a turbine, it makes the turbine spin. This generates electricity, which is then transferred through transmission lines to our homes.

Bores are dug to tap into underground water storages.

A raised area called a **levee** protects areas from flooding.

Non-renewable resources

Non-renewable resources are resources that are only available in limited amounts. If we overuse them, they will run out. These resources are found inside the Earth and they took millions of years to form. Non-renewable resources include the **fossil fuels**: oil, natural gas and coal. Today, 84 per cent of the total amount of energy used around the world comes from fossil fuels. As demand for energy rises, fossil fuels are running out. Scientists are exploring the potential of renewable energy sources, such as solar and wind power, for the future.



The natural flow of a river is sometimes interrupted by a **dam**. A dam provides water storage for use in towns, industry and farms, as well as for power generation.

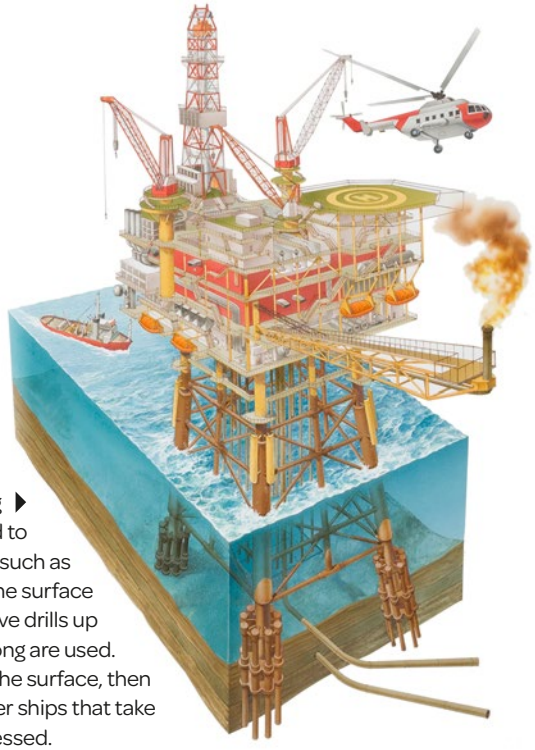
Water is redirected over long distances using pipes to move the water to where it is required.

Trees are a good example of a renewable resource. They can be cut down for timber, but they can also regenerate through seeds. Trees protect the soil from erosion and improve water quality.

Pollution and chemical runoff from agricultural and urban areas can impact access to fresh water. Regions with dense populations may need to regulate water use.

Water treatment plants filter waste water from cities to produce clear, fresh water. The recycled water can be used by humans or returned into rivers.

Irrigated farms draw water from a river or lake to water crops and pastures.



Source 3: Floating platforms are used to extract fossil fuels such as oil from beneath the surface of the Earth. Massive drills up to 2.5 kilometres long are used. Oil is drawn up to the surface, then pumped into tanker ships that take it away to be processed.

Learning ladder G1.2

Water as a resource

1. Is fresh water an unlimited resource?
2. Source 2: Give three examples of how humans have changed the river for their own use.
3. Explain how irrigation for farmland may impact natural river systems.
4. Source 1: Explain the positive and negative impacts on the environment from the use of hydroelectricity resources.

Representing information

1. List two renewable resources.
2. Create a summary table highlighting renewable and non-renewable resources.
3. Draw a sketch of your local environment. Label any renewable or non-renewable resources in the environment.
4. Use Google Earth to explore a range of water uses in your local region. How does geospatial technology provide us with information on water use?

Make it spicy

Describe two *environmental* resources humans rely on.

HOW TO

Environment, page 230; representing information, page 420; sketching and annotating, page 416

G1.3

What forms does water take?

Water is an essential resource that we need to survive. It is also a renewable resource that occurs naturally on Earth. The same amount of water that was available in the time of the dinosaurs is still available today.

Water on Earth

The water available in rivers, lakes and oceans, and below the Earth's surface in aquifers, is called blue water. Green water is the water in the soil that is used by plants and released back into the atmosphere through transpiration.

Water constantly changes state and moves through oceans, rivers and the atmosphere in a system known as the water cycle (see page 234–35). To say water 'changes state' means that it changes from being a solid (ice), to a liquid (water), to a gas (vapour).

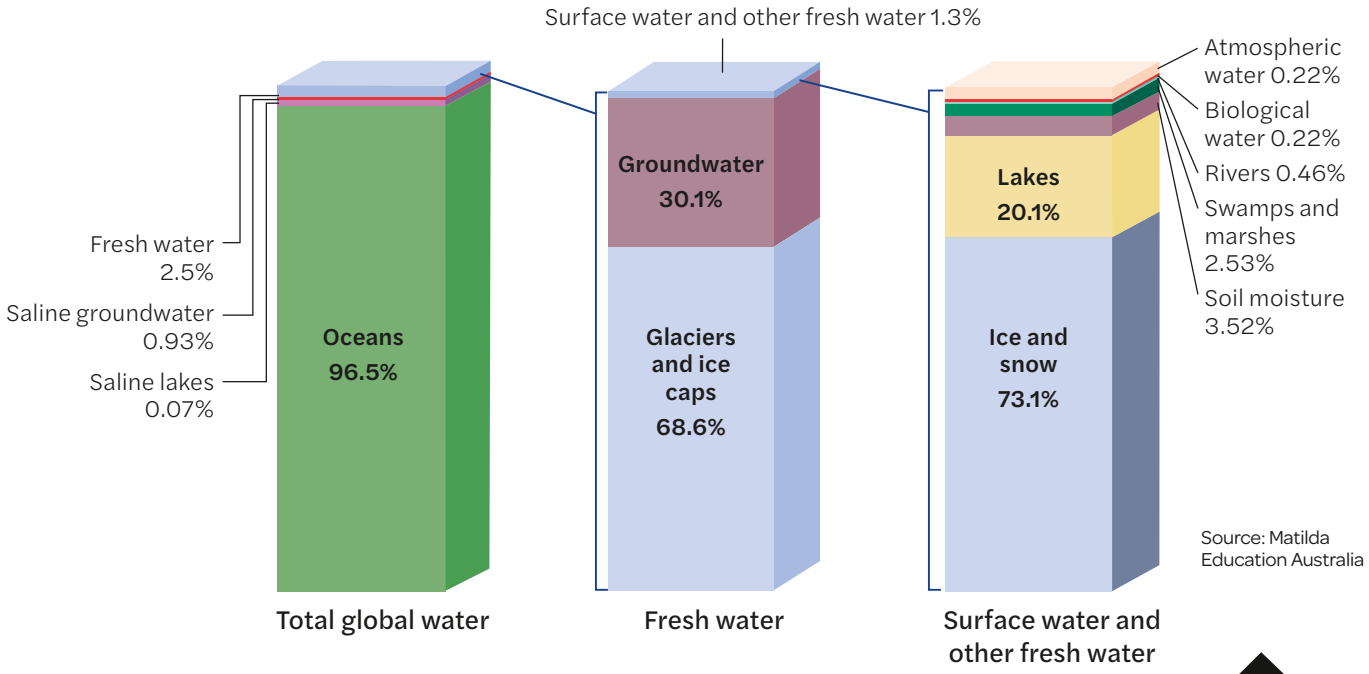
Water is a renewable resource because of the water cycle, which continually returns water to rivers, lakes and underground storage for humans to use.

More than 70 per cent of the Earth's surface is covered in water, but 96.5 per cent of that is salt water in our oceans.

Fresh water makes up only 2.5 per cent of our total water. Only a tiny amount of all fresh water is accessible in rivers, lakes, ice and snow – just 1.3 per cent. The rest of the fresh water is locked away underground or frozen in **glaciers** and **ice caps**.

Source 1: Though salty ocean water is undrinkable, it is a valuable resource. Desalination plants can turn it into fresh drinking water. Oceans also provide renewable energy (tidal, wave and thermal power), support fisheries and aquaculture for food, regulate the climate, boost tourism and recreation, and enable global trade through shipping lanes.

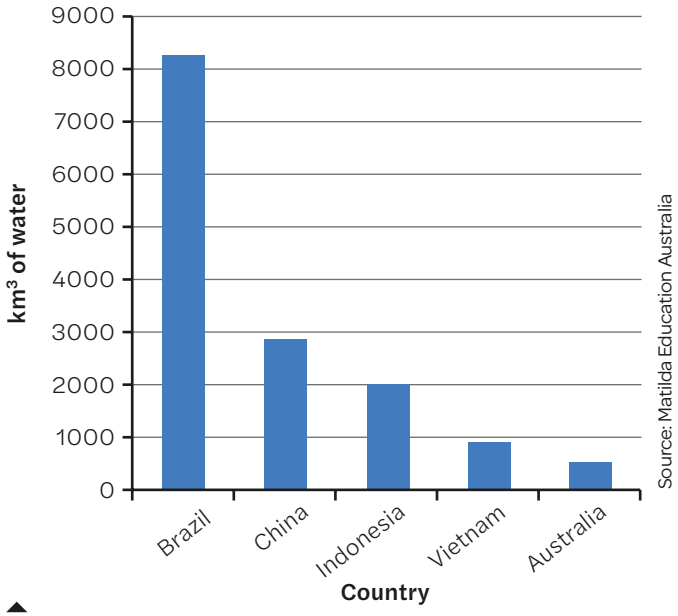
The world's freshwater resources



Source: Matilda Education Australia

Source 2: A stacked bar graph (or chart) divides each bar into categories. In this example, the first bar shows the categories that make up all of the Earth's water. Fresh water represents only 2.5 per cent of all water. The categories of fresh water are shown in the second bar. Easily accessible fresh water in lakes and rivers only accounts for 1.3 per cent of all fresh water. The third bar represents the categories of surface water and other fresh water. The amount of water in rivers represents just 0.46 per cent of surface water. The Amazon River in Brazil and Peru carries 15 per cent of the Earth's river water.

Total renewable water resources in selected countries



Source: Matilda Education Australia

Source 3: A bar graph (or bar chart) is a graph that uses bars of different heights or lengths to display different amounts of things. This bar graph compares the amount of fresh water in five different countries. **Water-rich** countries are those with high rainfall, such as Indonesia, or with large river systems, such as the Amazon River in Brazil. Dry countries, such as Australia, are **water poor**.

Learning ladder G1.3

Water as a resource

1. What makes water a renewable resource?
2. What is meant by water 'changing state'?
3. Source 3: Why does Brazil have more renewable water resources than other countries?
4. Source 1: How can salt water be used as a resource in dry environments?

Interpreting information

1. Source 3: How much fresh water is in Indonesia?
2. Source 2: How much fresh water is available on Earth? Describe how fresh water is distributed between different sources (e.g. rivers or glaciers and ice caps).
3. Source 3: Explain why Australia may be a 'water poor' nation.
4. Using Google Earth, identify the location of the world's biggest lakes: Caspian Sea, Lake Superior and Lake Victoria. What are the characteristics of these places?

Make it spicy

If water is renewable, why do we need to use it *sustainably*?

HOW TO

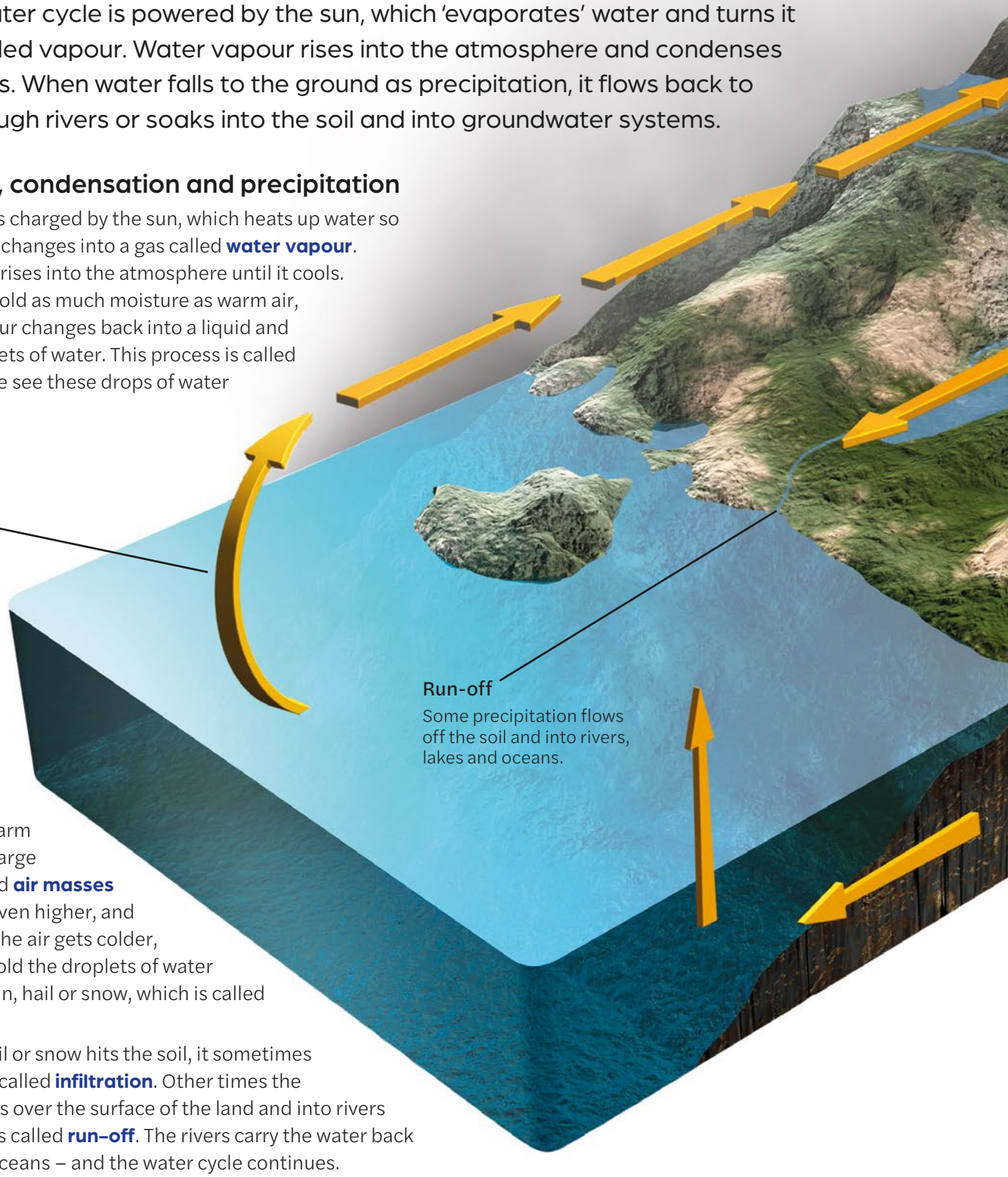
Interpreting information, page 428; sustainability, page 234

How does water flow through the environment?

In the water cycle, water changes from liquid to gas, and then back to liquid or solid again. The water cycle is powered by the sun, which 'evaporates' water and turns it into a gas called vapour. Water vapour rises into the atmosphere and condenses to form clouds. When water falls to the ground as precipitation, it flows back to the seas through rivers or soaks into the soil and into groundwater systems.

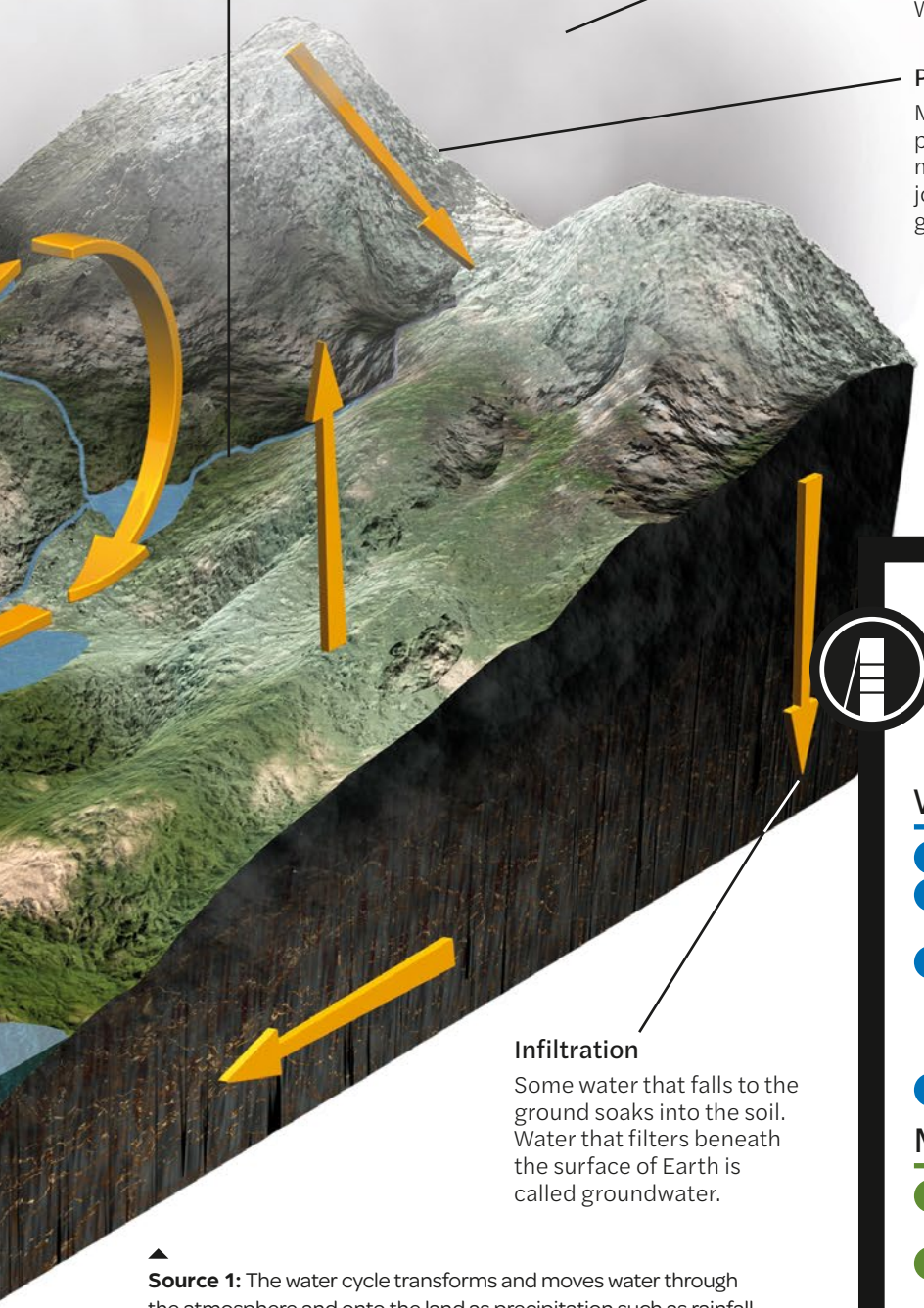
Evaporation, condensation and precipitation

The **water cycle** is charged by the sun, which heats up water so it evaporates and changes into a gas called **water vapour**. The water vapour rises into the atmosphere until it cools. Cold air doesn't hold as much moisture as warm air, so the water vapour changes back into a liquid and forms small droplets of water. This process is called **condensation**. We see these drops of water as clouds.



Mountains, warm temperatures or large bodies of air called **air masses** can push the air even higher, and it cools again. As the air gets colder, it can no longer hold the droplets of water and they fall as rain, hail or snow, which is called **precipitation**.

When rain, hail or snow hits the soil, it sometimes soaks in, which is called **infiltration**. Other times the precipitation flows over the surface of the land and into rivers and lakes, which is called **run–off**. The rivers carry the water back to the lakes and oceans – and the water cycle continues.



Source 1: The water cycle transforms and moves water through the atmosphere and onto the land as precipitation such as rainfall. A **catchment** is an area of land surrounded by hills or mountains where water collects when it rains. The water flows over the landscape and into rivers or underground storage. The water eventually moves back to the sea or a lake.

Water balance

The water cycle has a **water balance**. If there is too much precipitation on land, it is returned to the oceans by run-off. If there is too much **evaporation**, it is returned to the land by winds that blow the moist air from the sea onto the land.

Learning ladder G1.4

Water as a resource

1. How does the sun power the water cycle?
2. Outline the process of water turning from a liquid to a gas and to a solid in a series of steps.
3. Construct a flow diagram to show how water moves through an environment. Use these labels: evaporation, condensation, precipitation, transpiration and runoff.
4. How does the changing state of water affect places?

Making conclusions

1. Give an example to explain how the water cycle has a water balance.
2. Source 1: Explain how the shape of a catchment helps move water through river systems.
3. Write a summary that highlights the main idea of the following statement: 'The water cycle is important for freshwater availability on Earth'.
4. How reliable is the data presented here on water cycles?

Make it spicy

How does water move between *places*?

HOW TO
Flow diagrams, page 422; making conclusions, page 443; place, page 226

G1.5

How and where does rain fall?

Rain and snow fill up freshwater sources, so it's important to track when, where and how much water is falling. Rain falls when warm, moist air cools and condenses into water droplets. Warm air can hold more water than cool air, so when warmer air rises and cools, it eventually reaches a point where it cannot hold any more water. This is called the dew point.

When warm air cools above its **dew point**, the water vapour it is holding condenses into a liquid and it rains. There are three different ways of forcing air to rise and cool, and condense into rain:

- **frontal rainfall**: when cold air meets warm air
- **orographic rainfall**: when warm air is lifted over a mountain
- **convectional rainfall**: when land heats the air above it.

Frontal rainfall

Frontal rain occurs when a warm air mass meets a cold air mass. The lighter warm air is less dense, and is pushed up over the heavier cold air. This creates a '**front**'. As the warm air mass rises, it cools. Then the water vapour in the air mass condenses into water and falls as raindrops along the front.

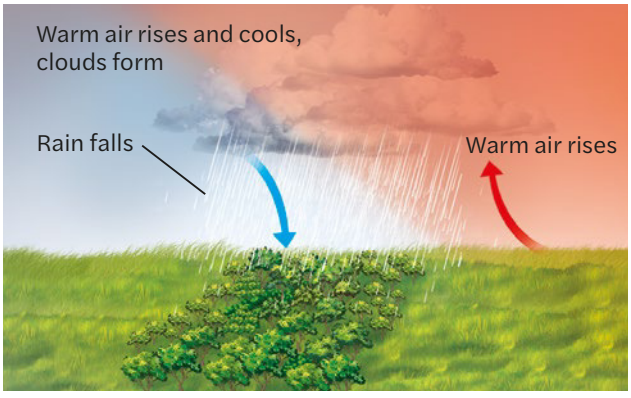
Orographic rainfall

Orographic rainfall is when moist air meets high land and is forced to rise. As it rises, the air cools and condenses into raindrops on the side of the mountain the wind is blowing from (the windward side). As the air descends from the high land on the other side of the range (the leeward side), it warms and creates dry regions, known as rain shadow. The **deserts** of central Australia are located on the leeward side of the Great Dividing Range.

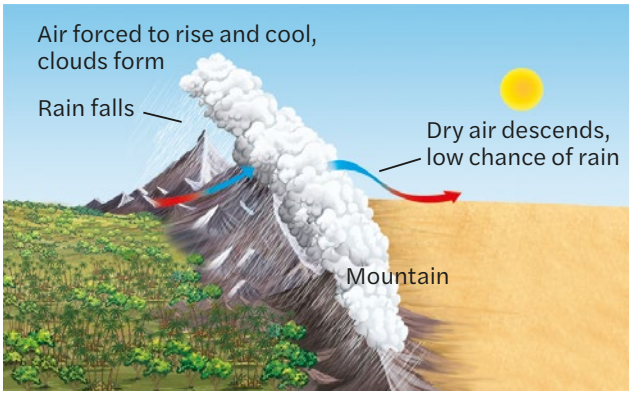
Convectional rainfall

Convectional rainfall is common in **tropical** areas where the ground is heated by the hot sun. The sun heats the land and, as the moisture from the ground evaporates, the heat from the ground heats the air above it. The warm air rises rapidly, then condenses to form clouds as it starts to cool. Convection can produce towering **cumulonimbus clouds**, which produce heavy rainfall, thunderstorms and lightning.

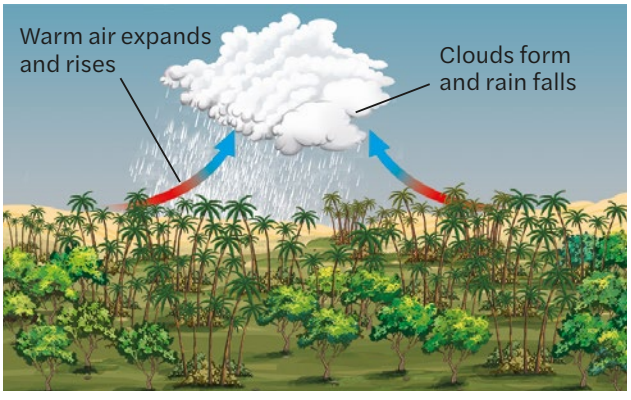
Frontal rainfall



Orographic rainfall

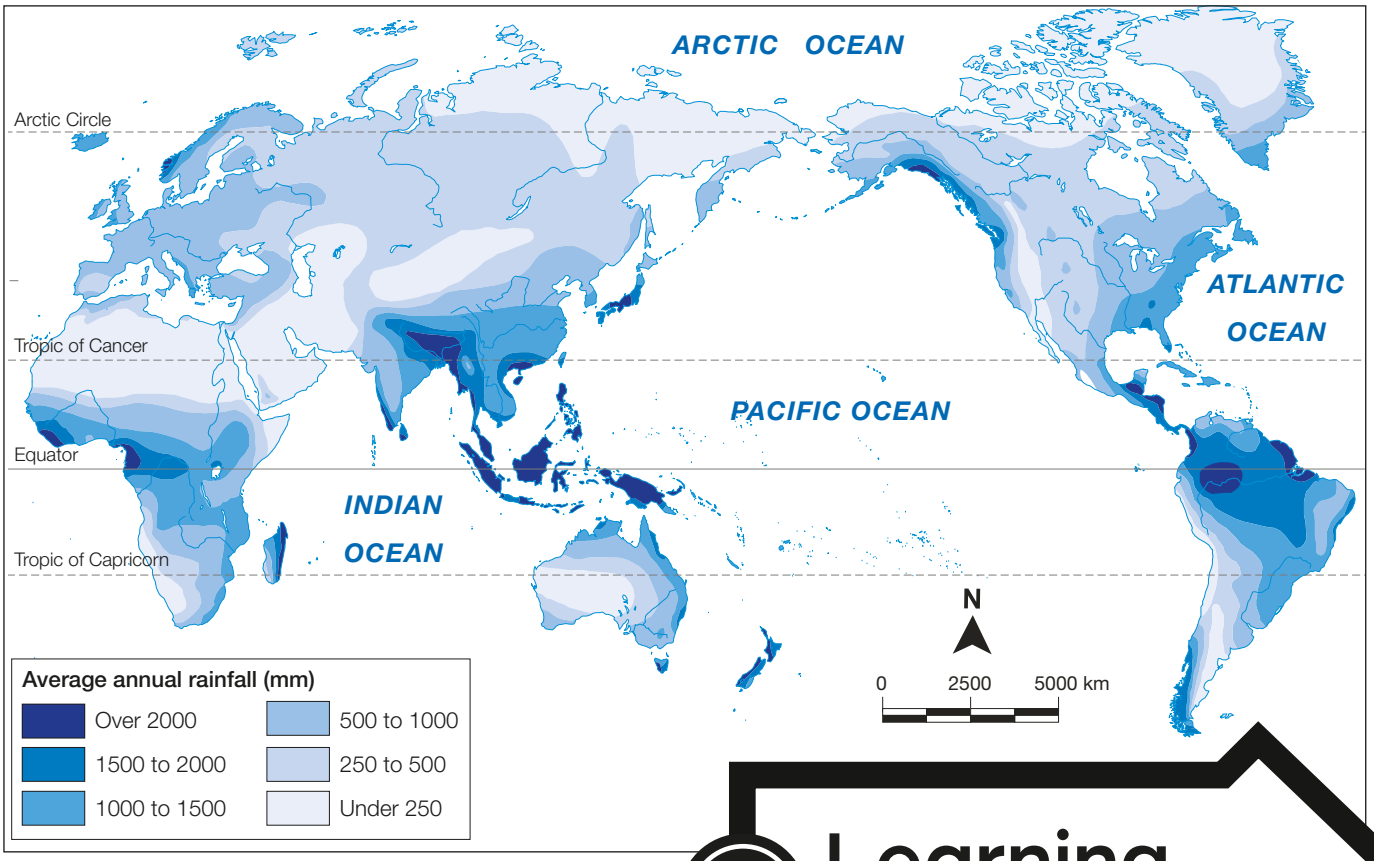


Convectional rainfall



▲ **Source 1:** Three types of rain are formed by air forced to rise and cool: frontal, orographic and convectional.

World average annual rainfall



Source: Matilda Education Australia

▲ **Source 2:** World average annual rainfall

▲ **Source 3:** A supercell thunderstorm in Kansas. Supercell thunderstorms are the biggest and most severe type of thunderstorm. They form when warm, humid air is trapped under a layer of cold air. The rising warm air and sinking cold air create powerful spiralling convection currents that produce hail, downpours and sometimes tornadoes.

Learning ladder G1.5

Water as a resource

1. When does rainfall occur?
2. Source 3: Create a labelled diagram to explain how a supercell thunderstorm occurs.
3. Explain how rainfall may affect the flow of rivers in places.
4. Source 1: Explain how orographic rainfall changes landscapes.

Interpreting information

1. Source 2: Identify one country that receives over 2000 millimetres of rainfall annually.
2. Source 2: Use the PQE method to describe the pattern of world rainfall.
3. Sources 1 and 2: Explain why Australia's deserts are located where they are.
4. Predict how the occurrence of supercell thunderstorms may change a place.

Make it spicy

How is rainfall *interconnected* with the water cycle?

HOW TO

Interconnection, page 227; interpreting information, page 428; PQE, page 438; SHEEPT, page 440

How does moving water change places?

Rivers are moving bodies of water that flow quickly downhill, eroding the land to form valleys. Rivers slow and spread out as they reach flatter land and then finally flow into the ocean, lake or larger river.

Erosion and abrasion

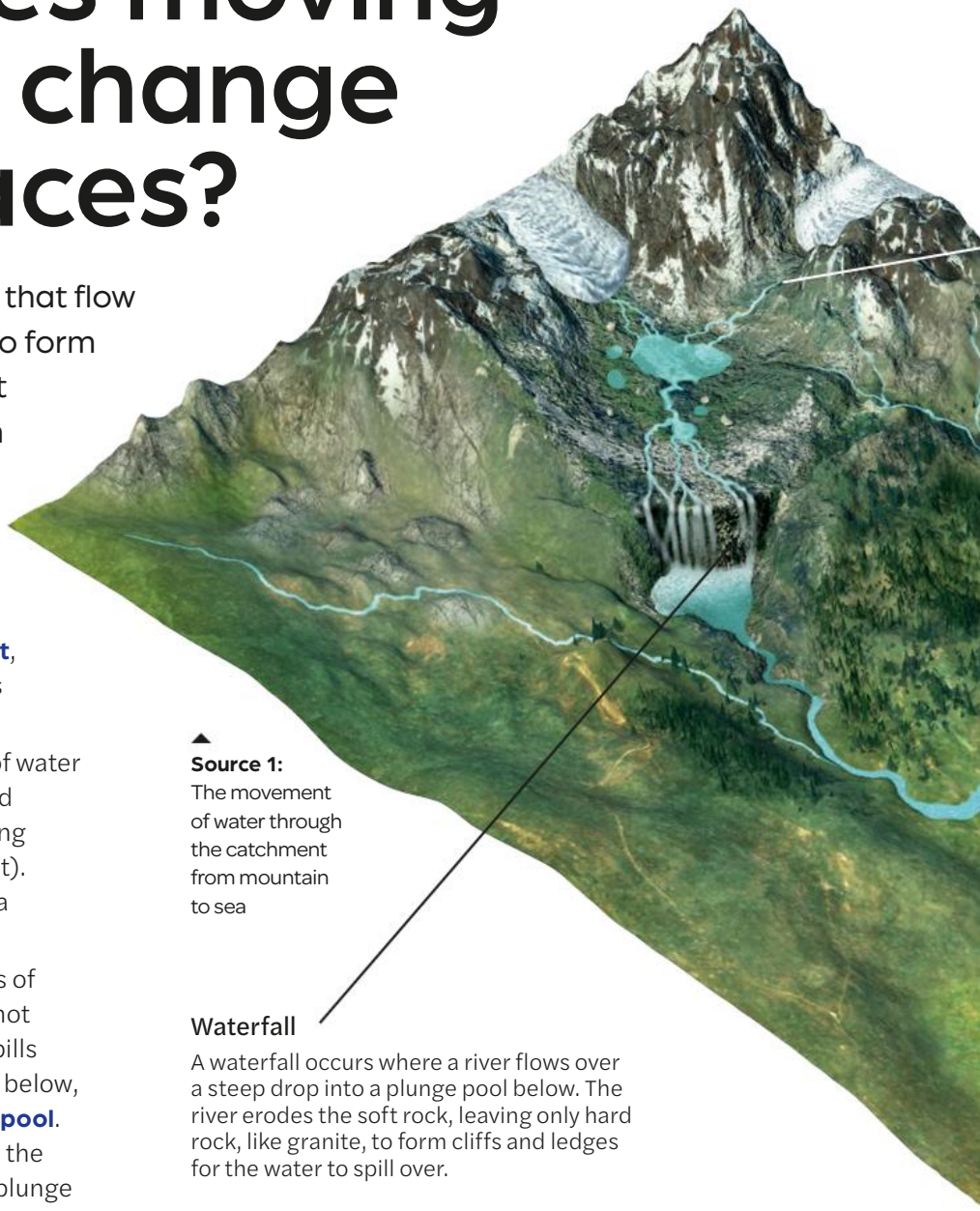
Mountains form the boundary of a **catchment**, where water is collected as precipitation runs into rivers that flow into larger rivers.

When a river is near its source, the force of water moving down a steep slope erodes the ground vertically to form v-shaped **valleys**. The moving water picks up rocks and soil (called sediment). The sediment erodes the riverbed further, in a process called **abrasion**.

Waterfalls often form in the upper stages of a river, where rivers meet harder rock that is not easily worn away, or eroded. Instead, water spills over the harder rock and erodes the soft rock below, forming a large pool of water called a **plunge pool**. Eventually, continued erosion will undermine the harder rock, and it will crack and fall into the plunge pool. Then a new waterfall forms further upstream. As the process continues, it forms a steep-sided valley, called a **gorge**.

Shaping floodplains and meanders

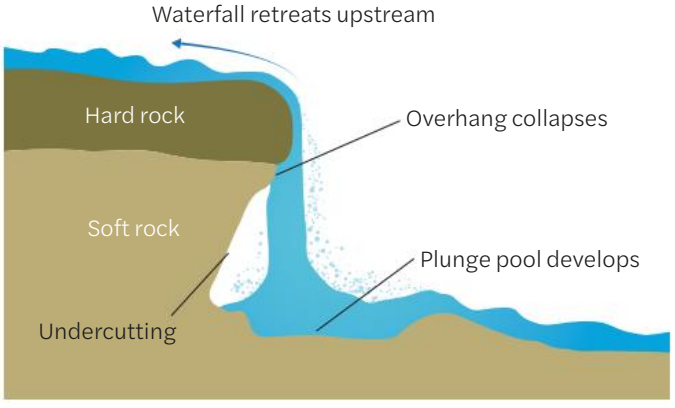
As the river reaches lower, flatter land, the eroded stones, sand and soil carried in the river begin to wear away the floor and sides of the valley. On the flatter land (called a floodplain, because it floods when there is too much water), rivers slow down and erode horizontally, creating snake-like **meanders**. The water speed is greatest on the outside of a bend, which is where erosion takes place. Water speed is slowest on the inside of a bend, and that is where eroded rock and soil are dropped, in a process called **deposition**.



Source 1: The movement of water through the catchment from mountain to sea

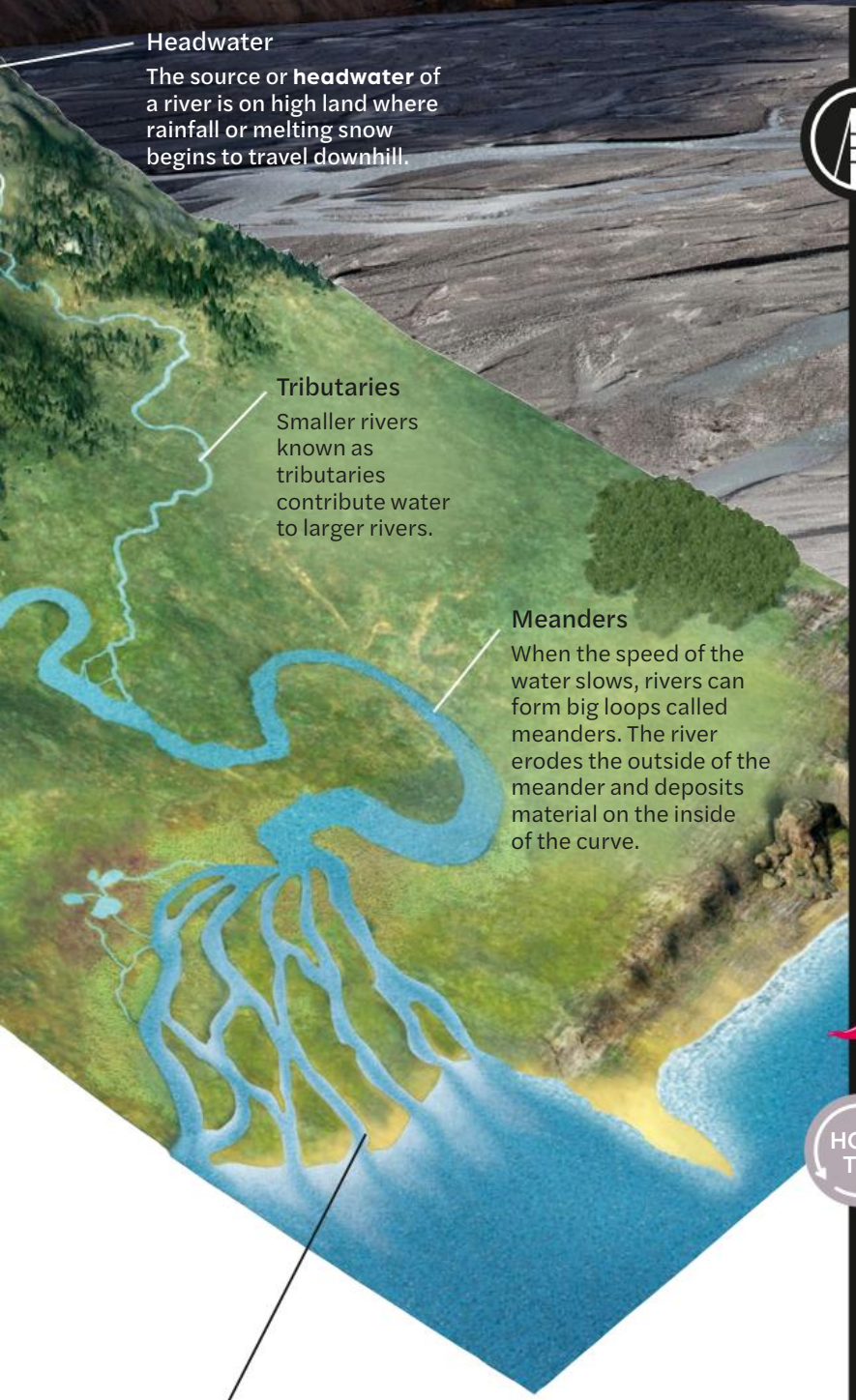
Waterfall

A waterfall occurs where a river flows over a steep drop into a plunge pool below. The river erodes the soft rock, leaving only hard rock, like granite, to form cliffs and ledges for the water to spill over.



Source 2: Cross-section of a waterfall

Source 3: Headwaters are the beginning of a river system. They usually capture the rainfall, snow melt or spring water in high altitudes and start the flow downhill.



Learning ladder G1.6

Water as a resource

1. What type of resource is a river?
2. How are rivers interconnected to the water cycle?
3. Where do rivers begin and end?
4. Give two examples of a river depositing silt. Why do rivers deposit eroded material?

Representing information

1. What are 'meanders'?
2. Source 4: Draw a block diagram of Seljalandsfoss waterfall. Add labels to show its features and how it formed.
3. Create a sketch map of a river system in your local area.
   - **a** Annotate your map with key characteristics.
   - **b** Comment on how this river may change local places through flooding or movement of sediment.
4. Using Google Earth, identify the locations of waterfalls in your local region. Annotate your map with key geographical characteristics of each waterfall and comment on how they have changed the local landscape.

Make it spicy

How do rivers change a *place*?

HOW TO
Block diagrams, page 421; change, page 228; representing information, page 420

Source 4: The Seljalandsfoss waterfall in Iceland falls 62 metres over a hard rock shelf into a plunge pool.

G1.7

Case study

How does the Nile River connect places?

The Nile River is the longest river in the world. It flows approximately 6650 kilometres northward through Kenya, Tanzania and Uganda, and empties into the Mediterranean Sea off the coast of Egypt. The Nile River plays a crucial role in connecting regions through its movement of water.

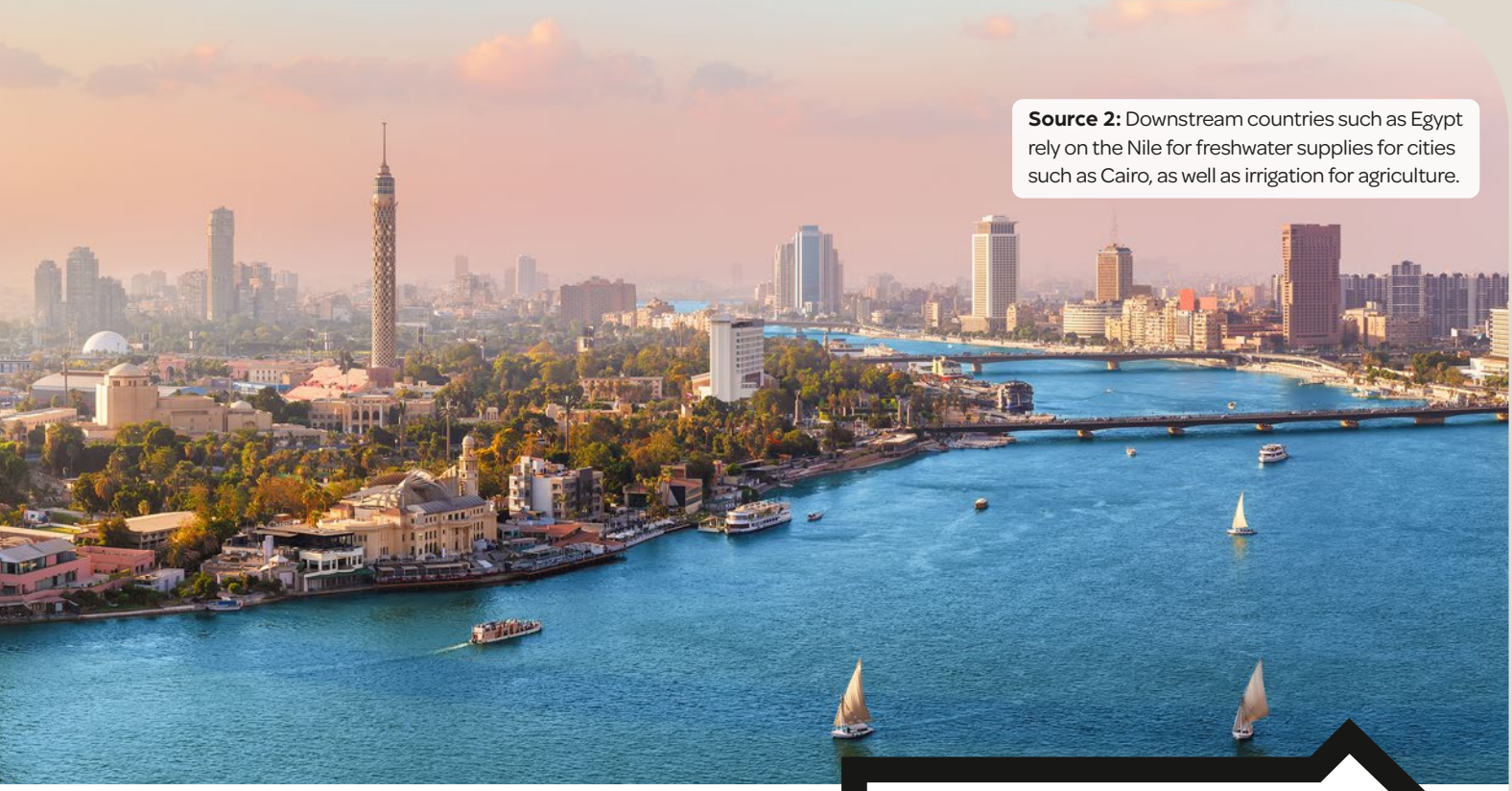
There are three types of water movement in the Nile:

- **Groundwater:** The Nile River's flow is important for irrigation, drinking and replenishing groundwater in the Nile **Delta**. **Groundwater** provides 85 per cent of Egypt's freshwater. Groundwater supply is slowly reducing by 0.1 billion cubic metres per year due to the pressures of climate change and population growth.
- **Soil moisture (green water):** In ancient times, people relied on the Nile for transport and fresh water. The river also provided an important source of green water through annual flooding, which carried fertile sediment from volcanic uplands to ancient riverbank crop fields. This annual flood water helped maintain the ancient civilisation for more than 5000 years.
- **Surface water (blue water):** Today, 95 per cent of Egyptians live near the Nile. The Nile no longer has the same flooding patterns due to the construction of the Aswan High **Dam** in 1970. The dam regulates river flow, supports reservoirs and irrigation systems, and provides a source of **hydroelectric** power.

Map of the Nile River

Source: Matilda Education Australia

Source 1: The Nile River is made up of two main tributaries: the White Nile starts from Lake Victoria in East Africa, and the Blue Nile begins in the Ethiopian highlands.



Source 2: Downstream countries such as Egypt rely on the Nile for freshwater supplies for cities such as Cairo, as well as irrigation for agriculture.

Upstream and downstream challenges

Upstream, Ethiopia has recently finished the construction of the Grand Ethiopian Renaissance Dam. While the dam aims to increase Ethiopia's electricity production and economic development, it has raised concerns for **downstream** countries, Egypt and Sudan. The dam affects the Nile River's water flow, potentially reducing water availability for agriculture and drinking. This has led to geopolitical tensions and negotiations over water rights and usage.

▲ **Source 3:** The Nile River was an important resource for the ancient Egyptians. Ancient Egyptians made small fishing boats by strapping together bundles of papyrus reeds. This painting from the tomb of Nebamun (c. 1350 BCE) shows him hunting birds in the marshes by the Nile River.

Learning ladder G1.7

Uses of water

1. List the ways the Nile River is used by humans.
2. How have humans changed the flow of the Nile over time?
3. Source 2: Do you agree or disagree with the following statement: 'The Nile River is used sustainably.' Use examples to support your opinion.
4. How has the Nile River changed the surrounding landscape over time?

Strategies for action

1. Describe the function of the Aswan High Dam.
2. Using SHEEPT, explain why the Grand Ethiopian Renaissance Dam was built.
3. What might be some of the long-term impacts of irrigating the Nile?
4. Source 1: Design a new strategy that could balance the water needs of upstream and downstream countries along the Nile.

Make it spicy

How does the *space* covered by the Nile River influence agricultural land distribution?

HOW TO

SHEEPT, page 440; space, page 224; strategies, page 446

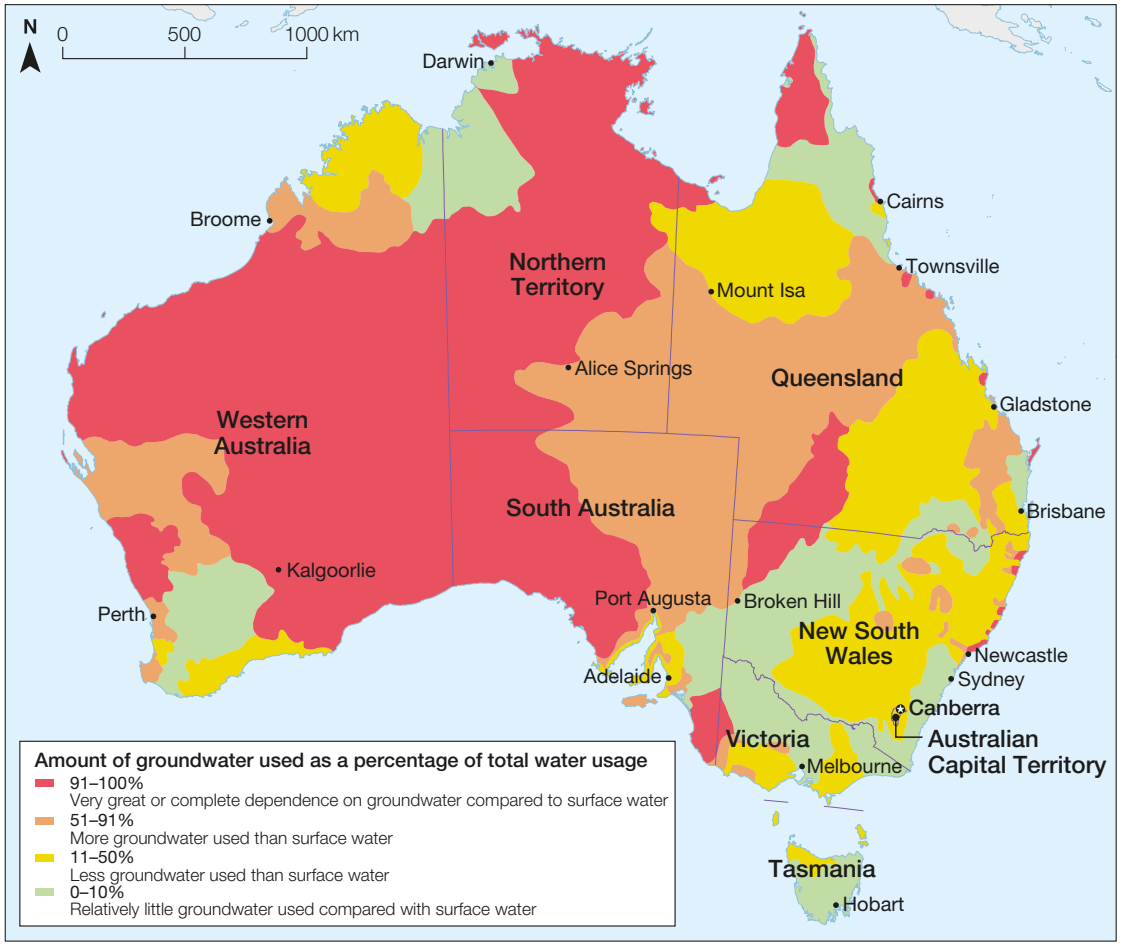
Why is groundwater an important resource?

Most fresh water on Earth is stored as ice and not used for economic purposes by humans. Water stored in underground aquifers and in constructed dams has huge economic value for humans and is widely used for domestic water supply, agriculture and industries.

Groundwater is water that is located under the Earth's surface. It is fed by surface water from rainfall and rivers. Groundwater can appear on the surface at low points such as a **spring** or in dry areas such as an **oasis**. Groundwater fills spaces between grains of soil or rock. In an area way below the soil, called the **saturated zone**, all the spaces between soil and rock particles are filled with water. The top of this zone is called the **water table**.

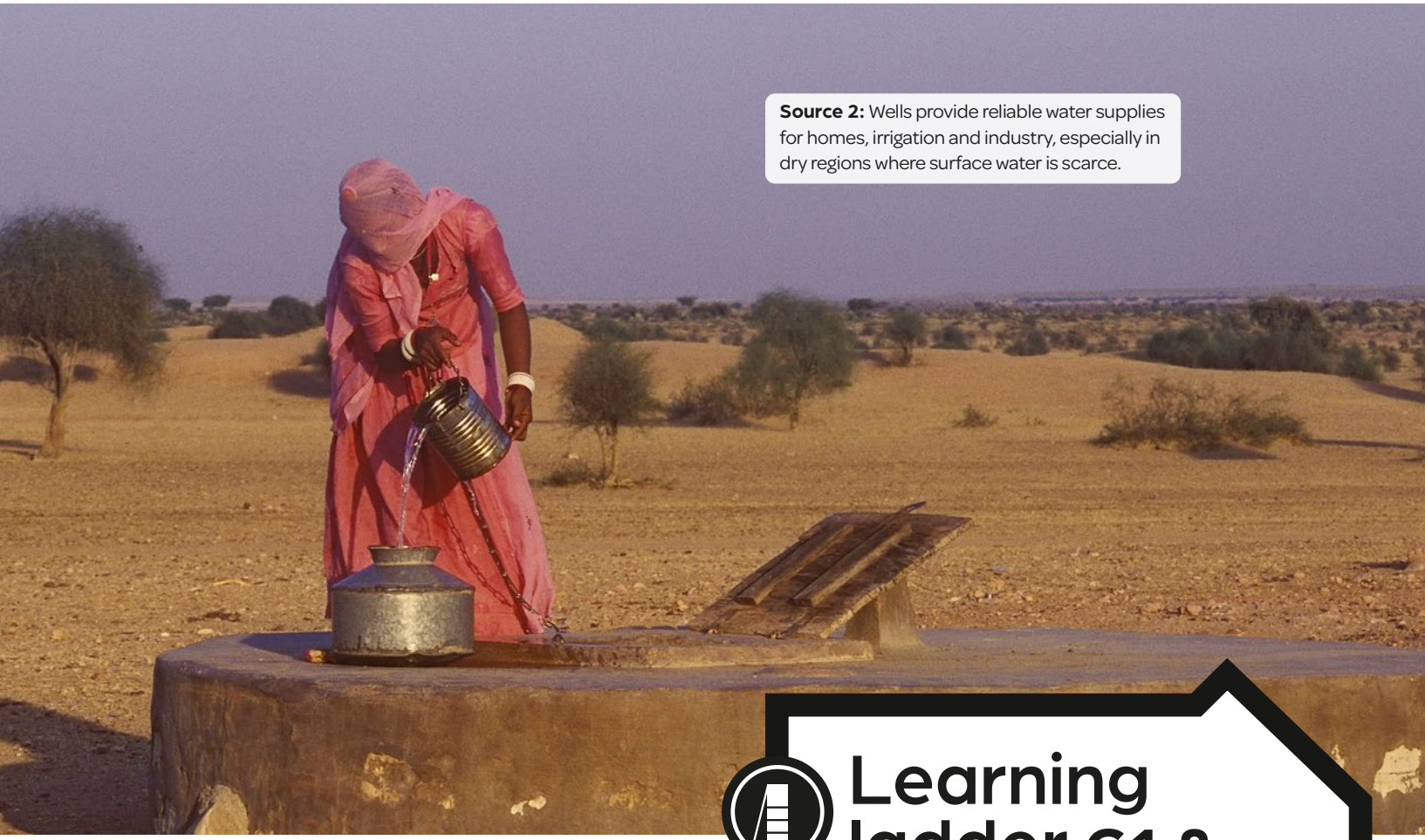
Groundwater makes up around 99 per cent of the Earth's liquid fresh water. It accounts for more than 50 per cent of the global drinking water and 43 per cent of irrigation water. Currently, groundwater supplies are being depleted faster than they can be replenished, primarily due to overuse for food production and contamination from fertilisers. This overuse threatens both human health and ecosystems, particularly in dry climates.

Australia groundwater used as a percentage of total water usage



Source: Matilda Education Australia

Source 1:
Australia is the driest inhabited continent on Earth, and surface water resources are limited. Groundwater is a very important renewable resource, and it provides a third of Australia's total consumable water. Farmers sink bores to pump water to the surface from underground rocks, called **aquifers**, that hold water. Windmills use wind energy to pump water to the surface.



Source 2: Wells provide reliable water supplies for homes, irrigation and industry, especially in dry regions where surface water is scarce.

Source 3: The Great Artesian Basin spans 1.7 million square kilometres and holds 65 million gigalitres of water. It provides the only source of fresh water for much of inland Australia - vital for more than 180 000 people and 120 towns across the Northern Territory, Queensland, South Australia and New South Wales. The water used from the Basin generates $33.2 billion annually. The Basin is so large that the groundwater near its centre is estimated to be more than 1 million years old. Across the Basin, water temperatures range from 30°C to 100°C, with deeper bores measuring at almost boiling point due to the intense heat and pressure at those depths.

Learning ladder G1.8

Uses of water

1. What are three main uses of groundwater?
2. How is groundwater linked to the water cycle?
3. Summarise how groundwater could be managed sustainably.
4. Source 1: Suggest how the Great Artesian Basin may have influenced the places people can live in Australia.

Interpreting information

1. How are aquifers like a river?
2. Source 1: Using PQE, describe the reliance on groundwater in Australia.
3. Consider the Northern Territory's rainfall patterns (Source 1, page 256). Explain why this region is so reliant on groundwater for drinking and irrigation.
4. Predict how groundwater could be managed in the future as climate change continues to alter weather patterns.

Make it spicy

How is the use of groundwater likely to *change* in the future?

HOW TO

Change, page 228; interpreting information, page 428; PQE, page 438; SHEEPT, page 440

G1.9

Where is water in Australia?

Australia is the driest inhabited continent on Earth – the only continent with less rain is Antarctica. Most of Australia's rain falls in thin strips along the coast, with desert occupying much of the centre of the continent. Only 12 per cent of the rain that falls is collected in rivers, so 30 per cent of Australians use groundwater for water supply.

Rainfall in Australia

Australia is the driest populated continent on Earth. Two-thirds of the continent is classified as desert or **semi-desert**. This classification depends on the amount of rainfall:

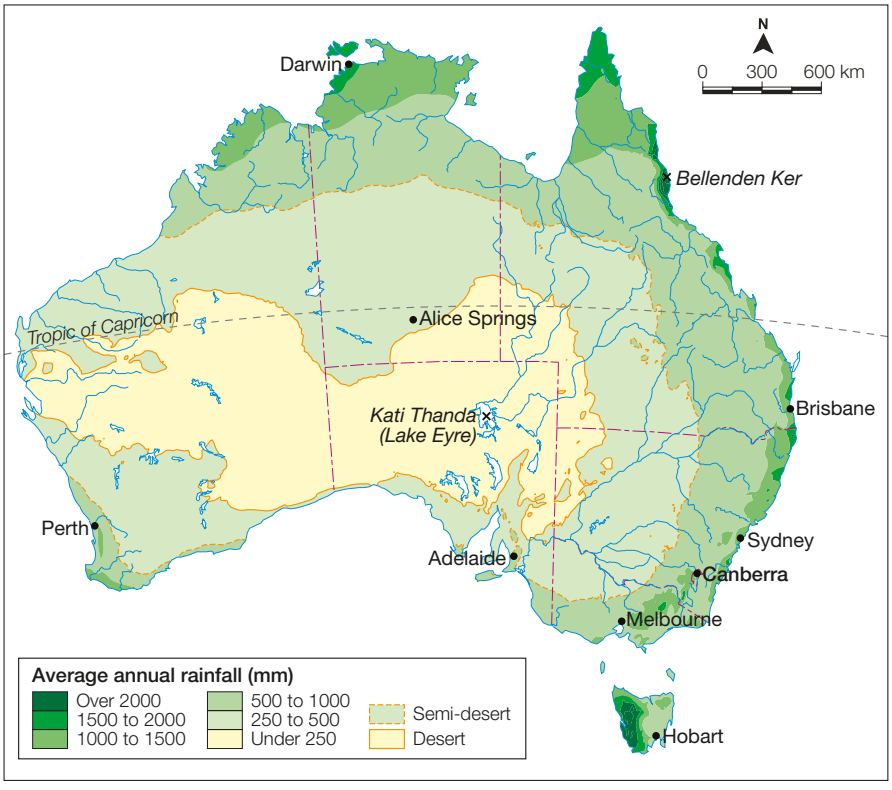
- Desert: less than 250 millimetres rainfall per year.
- Semi-desert: 250–500 millimetres rainfall per year.

Most of Australia's rain falls on its northern, eastern and south-western coasts. Australia's north coast receives most of its tropical rainfall in summer with the arrival of the **monsoon**.

The Great Dividing Range runs the entire length of Australia's east coast and forces winds to drop their moisture as rain along the coastal strip. Then, having released moisture to the east of the range, the winds sink as dry air to the desert and semi-desert regions to the west of the Great Dividing Range. This process is known as orographic rainfall (see page 236).

The wettest place in Australia is Bellenden Ker in north Queensland. Bellenden Ker averages 8312 millimetres of rainfall per year. It receives so much rain because of its tropical location on the eastern slopes of the Great Dividing Range.

Australia average annual rainfall



▲ **Source 1:** Australian average rainfall per year

Source: Matilda Education Australia

The driest place in Australia is Kati Thanda (Lake Eyre) in South Australia. It averages only 125 millimetres of rainfall per year. Air masses have usually dropped their rain on the south-west corner of Western Australia, and are dry by the time they reach so far inland.

Australian rivers

Because Australia is such a dry continent, it doesn't have many large rivers or large permanent lakes. In fact, Australia has the lowest volume of water in rivers of any inhabited continent in the world. Just 12 per cent of Australia's rainfall is collected in rivers.

Australia's inland rivers are different from all other rivers in the world. The volume of water in most rivers increases the further the river courses, but Australia's inland rivers tend to lose water.

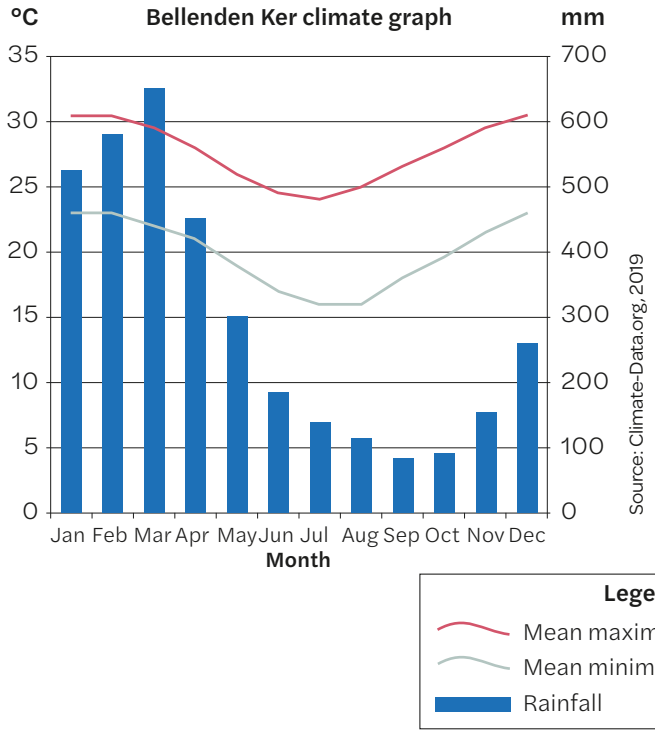
The Darling River, which is Australia's longest river, loses enough water through evaporation each year to fill Sydney Harbour four times!

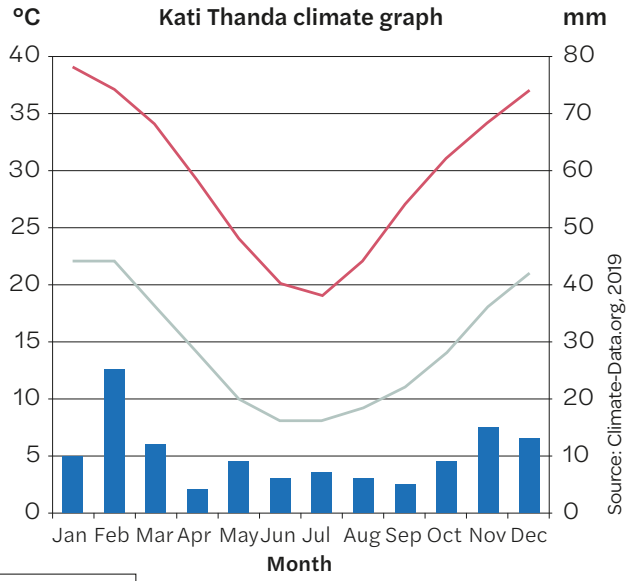
Many Australian rivers flow mainly – or only – when floods come down from far upstream. Heavy tropical rain falling in north Queensland is sometimes channelled through rivers to South Australia, where it floods the Kati Thanda **salt pan**.

Australian groundwater

One-third of Australia's residents rely on groundwater as their main source of water. Communities access underground aquifers by drilling a well or bore and pumping water to the surface.

The Great Artesian Basin in eastern Australia is the world's largest aquifer as it covers more than 1.7 million square kilometres – or 22 per cent of Australia's land mass. Water in an aquifer is trapped underground in a layer of sandstone covered by **sedimentary rock**, and can be more than 1 million years old.





Source 2: Climate graphs of the wettest and driest places in Australia

Learning ladder G1.9

Uses of water

1. What sources of fresh water do we have in Australia?
2. Consider the concepts of environment and interconnection. How do the geographical characteristics of Australia impact our use of water?
3. Explain why sustainable use of aquifers is important in Australia.
4. How does the use of water in Australia impact its availability?

Presenting ideas

1. Describe how evaporation affects Australian river volumes.
2. Source 1: Why is it important to learn about rainfall in Australia?
3. Source 2: Using data, explain how climate differs between places in Australia.
4. How is climate interconnected with the volume of Australia's rivers?

Make it spicy

Source 1: Use the *scale* on the map to estimate how wide (approximately) Australia is from east to west.

Presenting ideas, page 449;
scale, pages 232, 429; SHEEPT, page 440

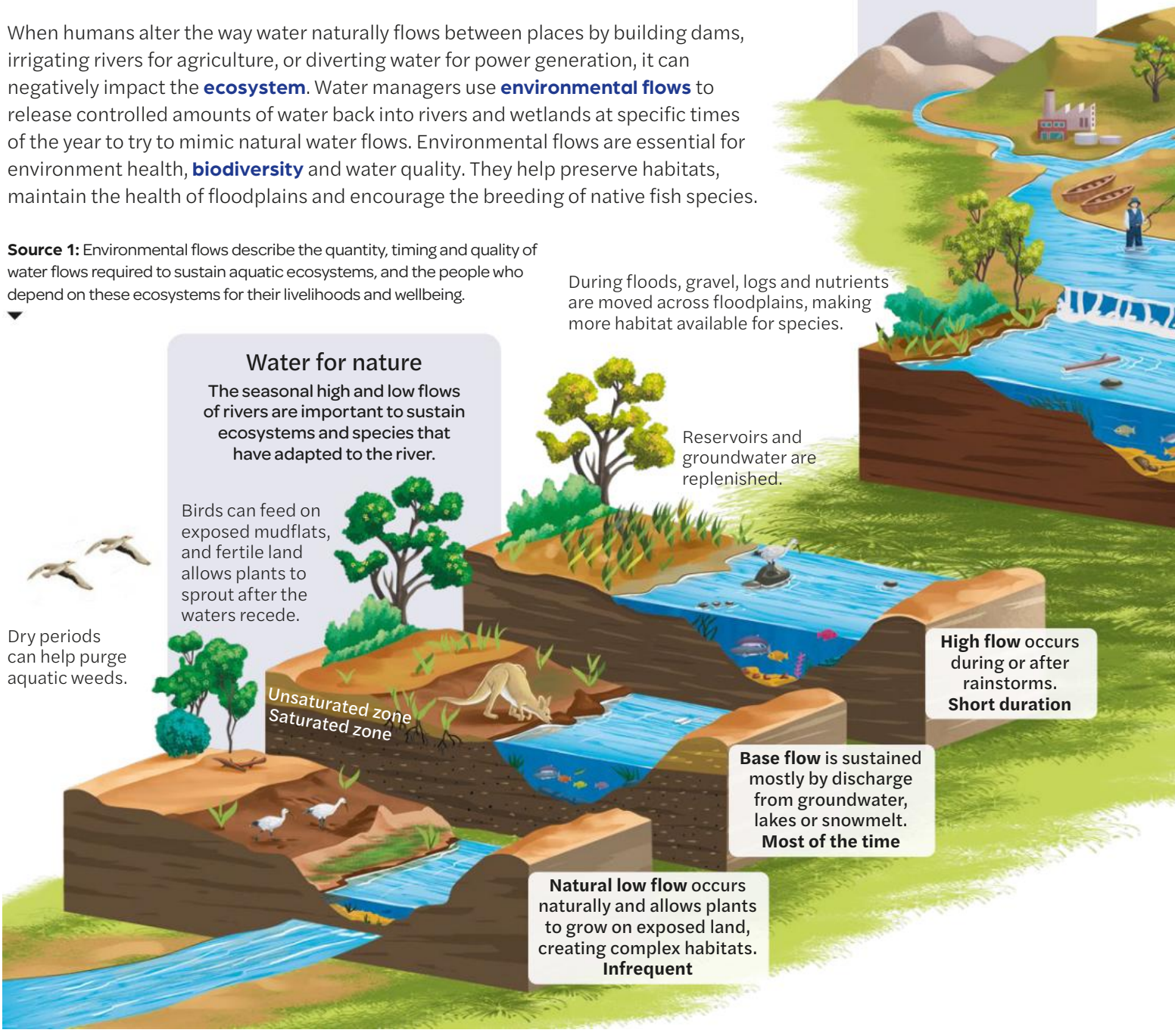
HOW TO

Why are environmental flows important?

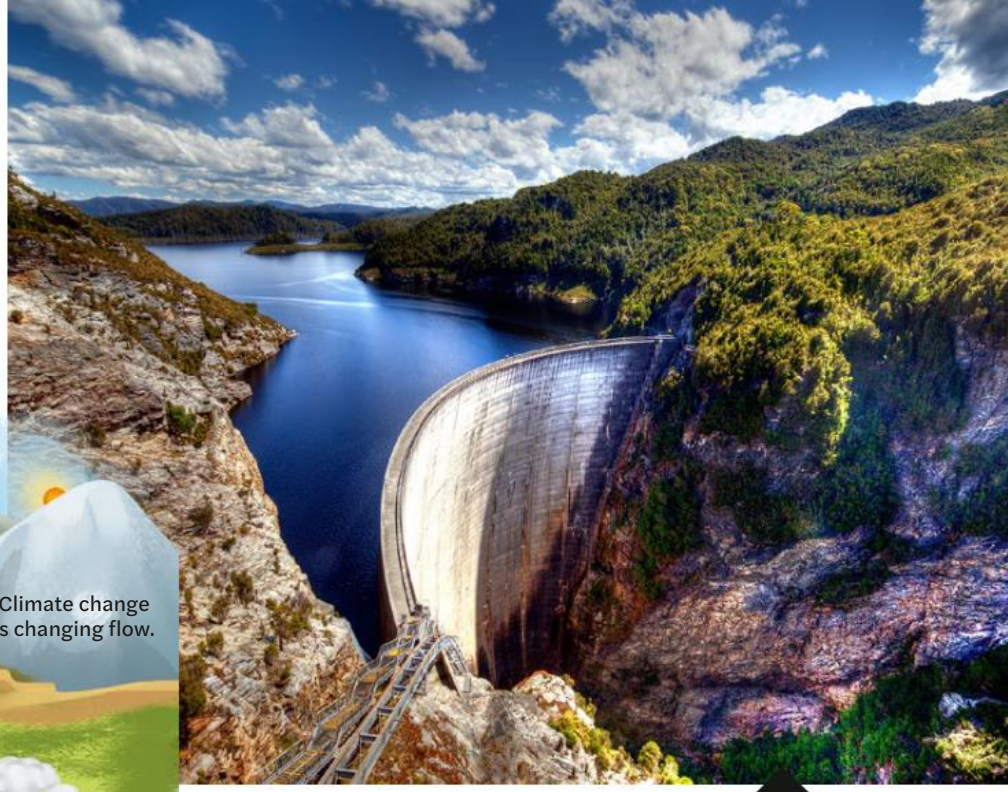
'Water flow' refers to how much water moves in rivers, streams and other water bodies. Aquatic ecosystems require specific water heights or flows throughout the year to stay healthy. Water flows are influenced by rainfall, snowmelt, terrain, and human activities such as damming or irrigation.

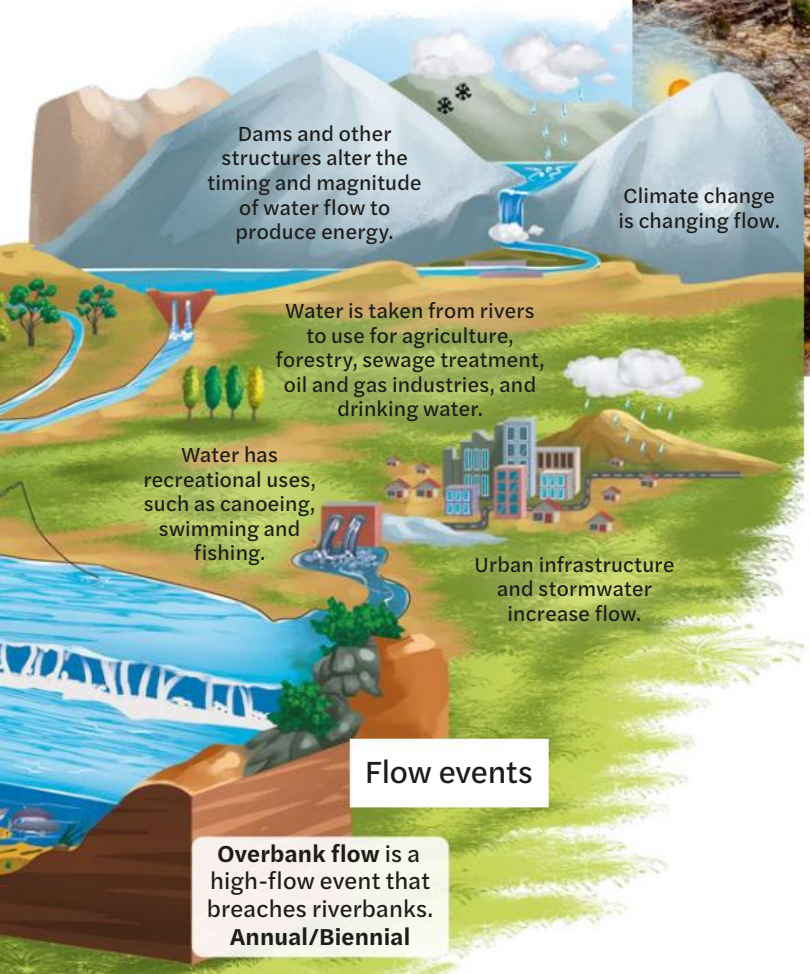
When humans alter the way water naturally flows between places by building dams, irrigating rivers for agriculture, or diverting water for power generation, it can negatively impact the **ecosystem**. Water managers use **environmental flows** to release controlled amounts of water back into rivers and wetlands at specific times of the year to try to mimic natural water flows. Environmental flows are essential for environment health, **biodiversity** and water quality. They help preserve habitats, maintain the health of floodplains and encourage the breeding of native fish species.

Source 1: Environmental flows describe the quantity, timing and quality of water flows required to sustain aquatic ecosystems, and the people who depend on these ecosystems for their livelihoods and wellbeing.



Source 3: Humans create their own water storages, called dams or reservoirs, which collect and retain water. Large dams such as the Thompson Dam provide a reliable water supply for humans, but also have significant impacts on natural environments and water flow.





Source 2: Large golden perch require specific conditions to breed. Environmental flows aim to copy natural river patterns which help sustain native populations of fish.

Learning ladder G1.10

Value of water

1. How does the environment use water?
2. Why is environmental water important for aquatic species?
3. Using SHEEPT, explain why it may be difficult to balance environmental flows with human needs.
4. Why are Aboriginal Water Officers often part of the planning process when considering environmental flows?

Strategies for action

1. Describe the process of environmental flows.
2. Explain why the timing of environmental flow release is important.
3. Research your local catchment management authority's approach to environmental flows. Why are the environmental flows important in your region?
4. Design a new strategy that could balance the water needs of humans and the environment in your local environment.

Make it spicy

How do environmental flows increase local *sustainability*?

HOW TO

SHEEPT, page 440; strategies, page 446; sustainability, page 234

G1.11

Case study

How has the Murray River changed?

At 2508 kilometres, the Murray River is Australia's longest single river. It is a key source of fresh water and connects places on its banks that rely on water for farming, industry and town water.

Upstream gates open as a vessel enters the lock chamber.

Upstream gates close. Water is released downstream through butterfly valves. Water in lock chamber lowers.

When water levels are equal downstream, gates open.

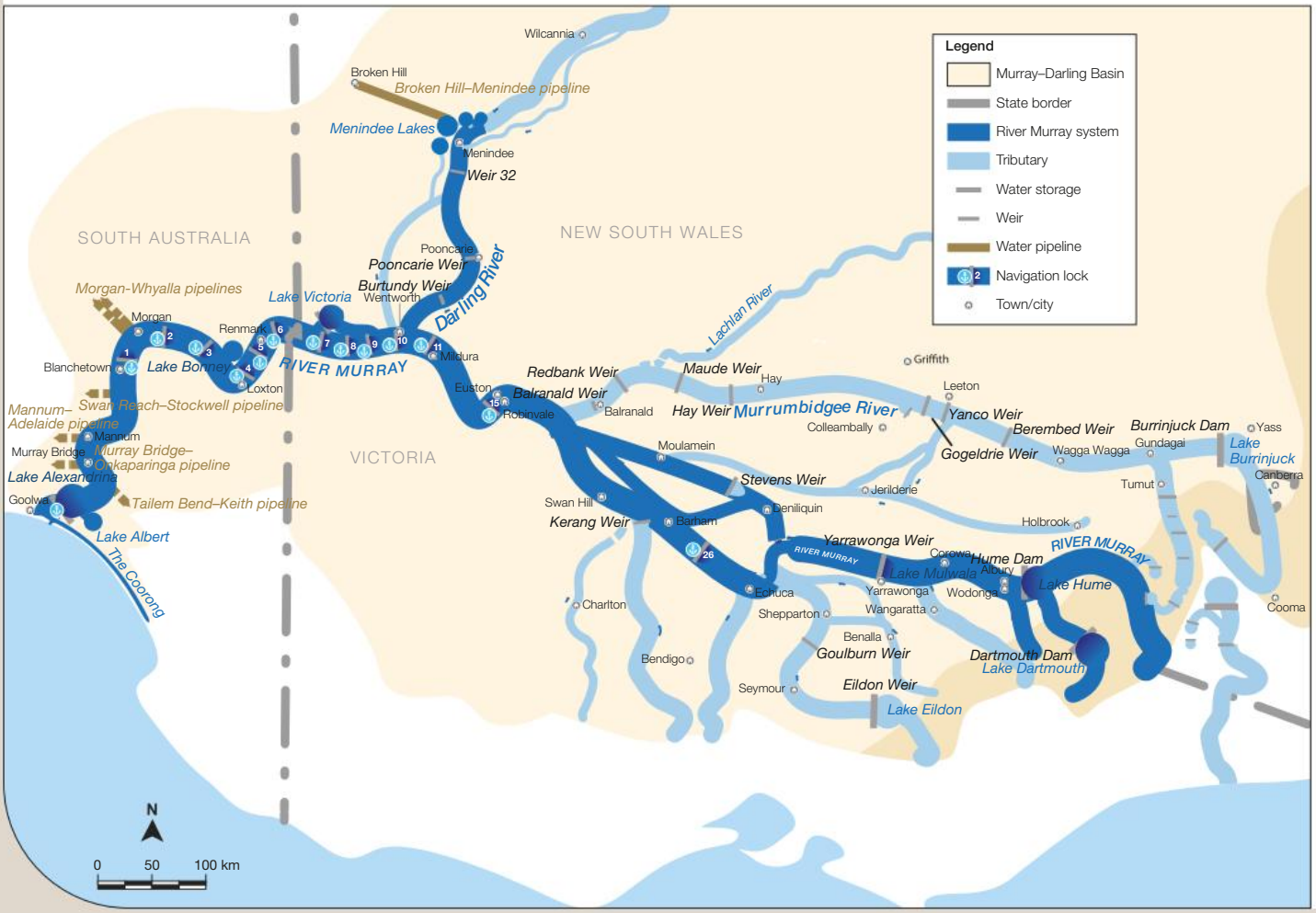
▲ **Source 2:** How a lock works

Changes to the Murray River

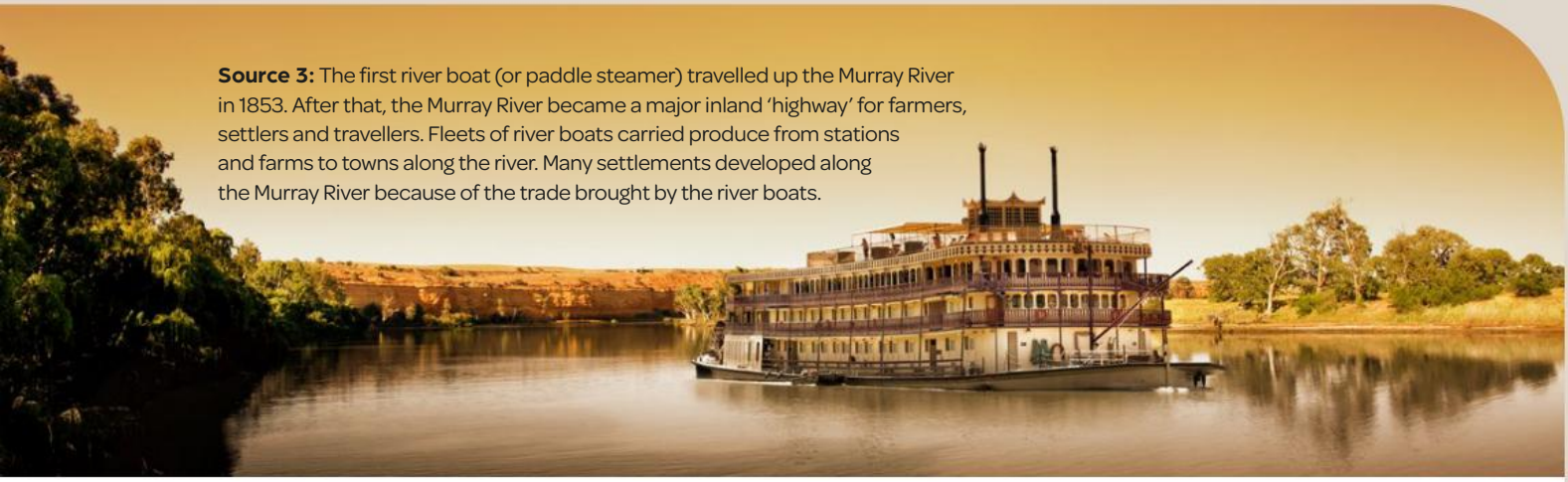
The Murray River has been greatly modified through the installation of locks, weirs and dams to control its flow, and allow for navigation and irrigation for agriculture. This made the Murray River valley Australia's most productive agricultural region, but it also seriously damaged ecosystems along the river by changing natural river flows and interrupting the movement of fish and other organisms. Water is released from dams and weirs as environmental flows, with the purpose of maintaining the health of the river ecosystem.

Murray River locks, weirs and dams

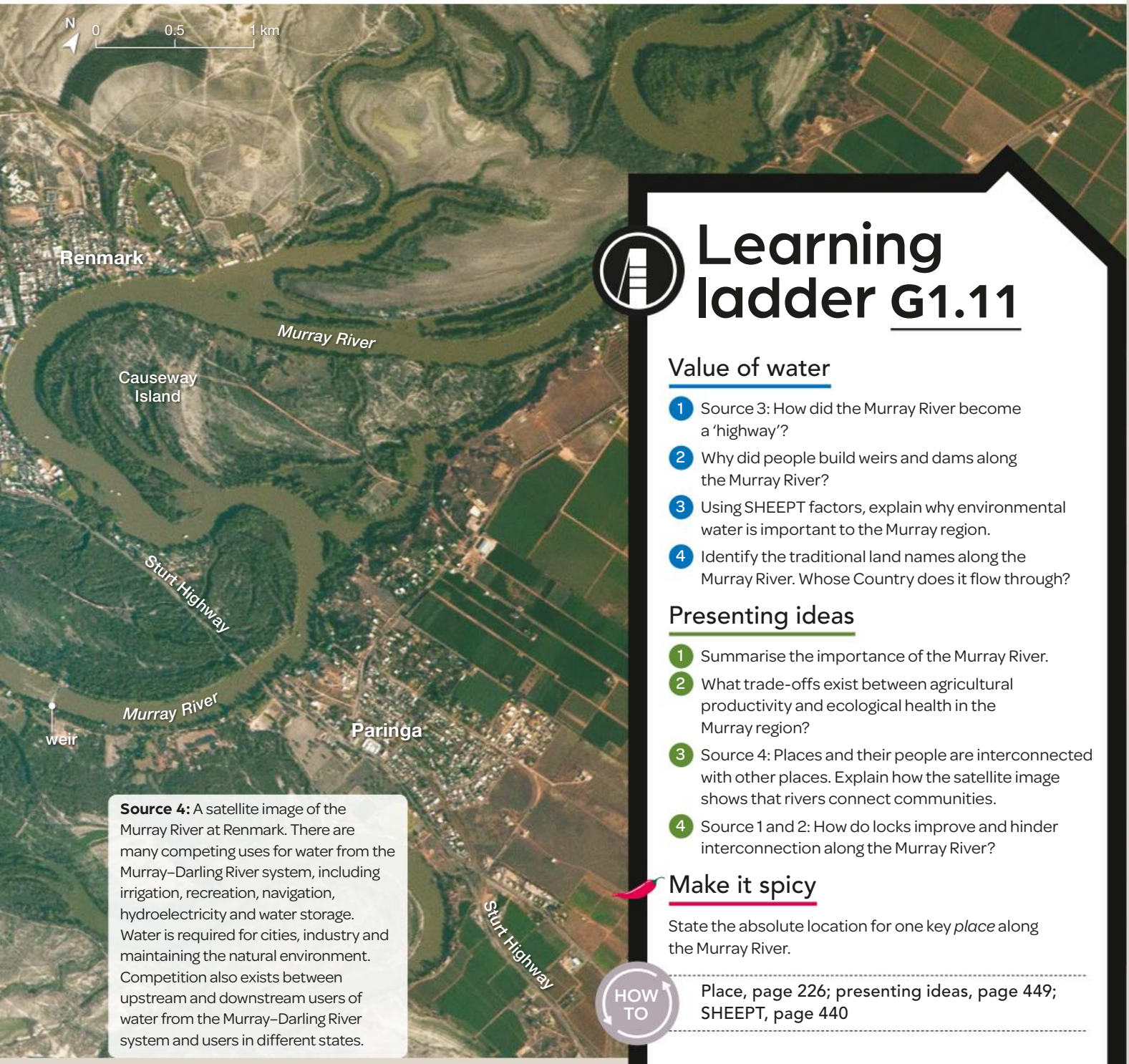
▼ **Source 1:** Murray River locks, weirs, dams and barrages



Source: Murray-Darling Basin Authority, 2012



Source 3: The first river boat (or paddle steamer) travelled up the Murray River in 1853. After that, the Murray River became a major inland 'highway' for farmers, settlers and travellers. Fleets of river boats carried produce from stations and farms to towns along the river. Many settlements developed along the Murray River because of the trade brought by the river boats.



Source 4: A satellite image of the Murray River at Renmark. There are many competing uses for water from the Murray–Darling River system, including irrigation, recreation, navigation, hydroelectricity and water storage. Water is required for cities, industry and maintaining the natural environment. Competition also exists between upstream and downstream users of water from the Murray–Darling River system and users in different states.

Learning ladder G1.11

Value of water

1. Source 3: How did the Murray River become a 'highway'?
2. Why did people build weirs and dams along the Murray River?
3. Using SHEEPT factors, explain why environmental water is important to the Murray region.
4. Identify the traditional land names along the Murray River. Whose Country does it flow through?

Presenting ideas

1. Summarise the importance of the Murray River.
2. What trade-offs exist between agricultural productivity and ecological health in the Murray region?
3. Source 4: Places and their people are interconnected with other places. Explain how the satellite image shows that rivers connect communities.
4. Source 1 and 2: How do locks improve and hinder interconnection along the Murray River?

Make it spicy

State the absolute location for one key *place* along the Murray River.

HOW TO

Place, page 226; presenting ideas, page 449; SHEEPT, page 440

Case study

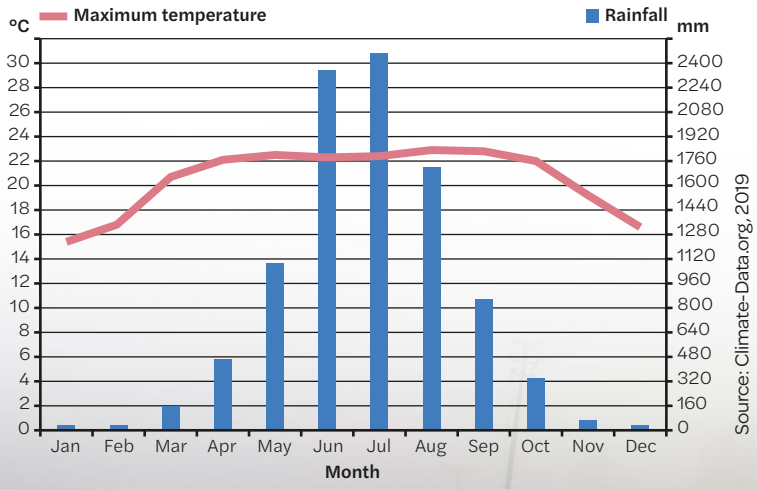
Why is Mawsynram the world's wettest place?

Mawsynram in India has an average annual rainfall of 11 871 millimetres, and is the wettest inhabited place in the world. Cherrapunji, just 15 kilometres from Mawsynram, is the second-wettest place in the world. Mawsynram and Cherrapunji are both located in north-eastern India, about 1400 metres above sea level.

During the rainy season, or monsoon, much of India receives heavy rainfall. The monsoon months from June to September produce the heaviest rainfall in the north-eastern part of India, on the foothills of the Himalayan Mountains. Winds coming from the Indian Ocean absorb moist air and are forced to rise as they meet the mountains. The air cools and condenses into raindrops, in a process known as orographic rainfall. On the other side of the Himalayas it is dry and warm.

With little forest cover, poor soil and just a few reservoirs, little water stays in Mawsynram. When the monsoon ends, residents get limited water supply for just two hours in the morning and two hours in the evening.

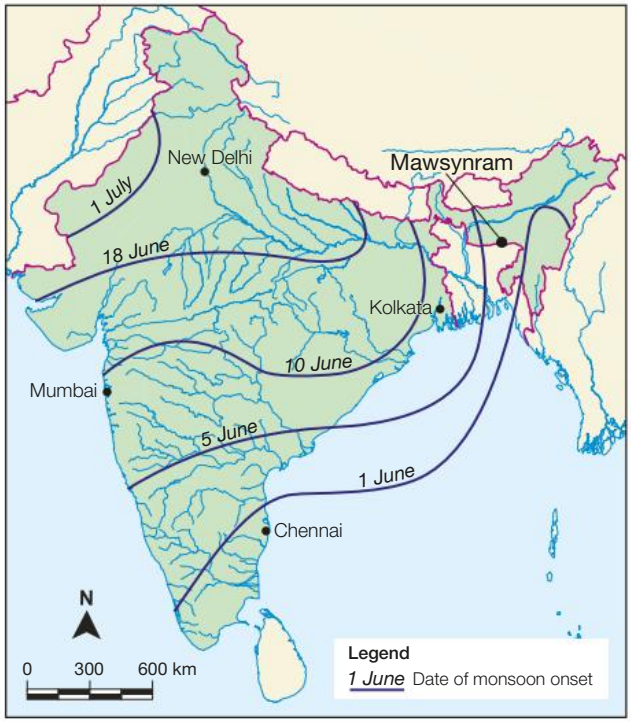
Mawsynram climate graph



▲ **Source 2:** Rainfall and temperature in Mawsynram, by month

Source 1: The monsoon season in Mawsynram produces heavy rain over an extended period. People plan for its arrival by stocking up on food. Women make body umbrellas, called *knups*, from bamboo, grass and plastic.

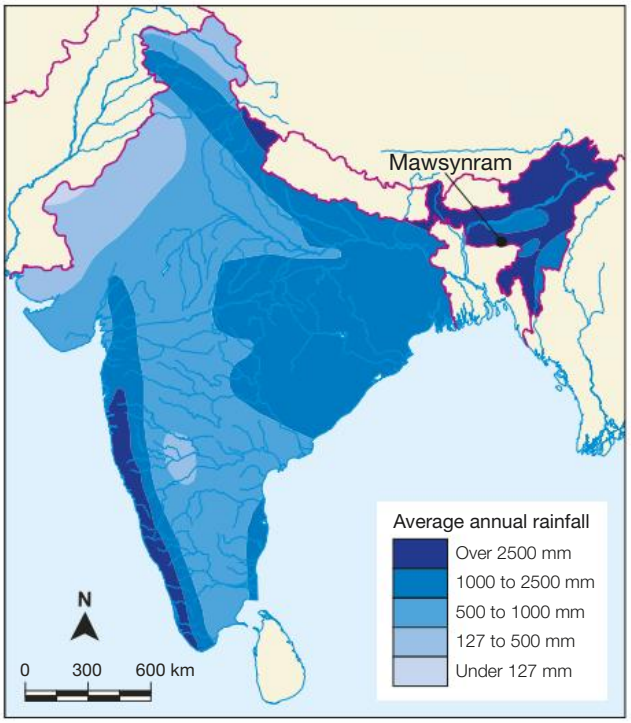
India monsoon onset



Source: Matilda Education Australia

▲ **Source 3:** The onset of monsoons in India

India average annual rainfall



Source: Matilda Education Australia

▲ **Source 4:** India's average annual rainfall

Source 5: Maysynram in India is the world's wettest place. During the monsoon season, the rain is so heavy that you can barely see a metre in front of you. Heavy rain can continue for up to a week at a time and clouds float into the homes of the people. Everything is damp inside the homes and clothes need to be dried up to three times per day. Classes are cancelled on days when the deafening sound of rain on the tin school roof makes it impossible for the teachers to be heard.

Learning ladder G1.12

Water as a resource

1. What is a monsoon, and how does it differ from other forms of rainfall?
2. Use Sources 1 and 5 to help explain the impact of the monsoon on local residents.
3. Explain how orographic rainfall works and why it brings such large amounts of rain to Mawsynram.
4. Explain how water availability in Mawsynram changes after the monsoon ends in October. What could be done to improve water supply during the dry months?

Interpreting information

1. Source 4: According to the map, how much rainfall does Mawsynram receive each year?
2. Source 4: Use compass directions to describe where the driest and wettest regions in India are found.
3. Compare Sources 2 and 3:
   - **a** What is the connection between the months of highest rainfall and the monsoon?
   - **b** Why do the north-westerly winter winds bring little rain to Mawsynram?
4. How might changes in climate or wind patterns affect future rainfall in places like Mawsynram?

HOW TO

Space, page 224

How do First Nations Peoples value water?

Water is central to the ongoing connection to Country and the ability of First Nations Peoples to thrive in some of the most arid conditions in the world. For many First Nations people, water is understood to be life itself.

Saltwater and freshwater people

Many First Nations people will identify as being a part of the landscape from Country. This includes people who are freshwater, saltwater and desert people among many other descriptions. The geographical descriptions also often indicate how water is experienced and valued in the different places, landscapes and Countries.

In addition to the identification with Country, many First Nations cultures also have stories that relate to the proper ways of caring for the waterways, as well as many stories that describe how the waterways were formed and where the ancestors and spirits rest and reside in the Dreaming. In many ways, the valuing of water is very similar to the valuing of Country.

For many First Nations people, unlike many non-Indigenous people, water is not an economic resource to be bought, sold or exploited. Water is a vital resource to be cared for as part of caring for Country to support all the organisms that rely on it for their survival.

Using the water

Water is used to drink, hunt, fish, and harvest vegetables and fruits that are cultivated in the landscape around water in abundance. Water is also valued as sacred places where medicines grow as well as where health care can be provided. Places around water have also been valued as important for giving birth. Some of these places are considered sacred women's places and there are also many sacred men's places in close proximity to water.

Source 1: Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) rangers at Amity Point on North Stradbroke Island, Queensland

Source 2: This aerial view shows the Brewarrina fish traps on the Barwon River in the far north-west of New South Wales. Nearly half a kilometre in length, the fish traps were a clever invention used by First Nations Peoples to fish sustainably for thousands of years without disrupting the natural flow of the river or the seasonal spawning paths of the fish.

Caring for the water

Like caring for Country, the water and waterways have been looked after for all time. This allowed First Nations Peoples to thrive through ice ages and ancient climate changes, as well as several severe droughts that sometimes lasted many decades. In more recent times, the ability of First Nations people to care for water has been severely disrupted due to colonisation. This has meant that there has been limited opportunity to care for water as part of the incredibly complex and interconnected aspects of Country, air, earth, fire, and the plants and animals.

In recent times, this has caused much concern in many First Nations communities, especially those located near important river systems. With the recent fish kill events that have damaged the riverine systems, many First Nations people are worried that the rivers are sick. This has been caused by a reduction of water in the river systems for irrigation and agriculture, climate change, and the runoff of damaging chemicals, pesticides and fertilisers into the river systems.

Learning ladder G1.13

Value of water

1. How have First Nations Peoples passed on the spiritual connection to water over time?
2. What is meant by 'caring for water'?
3. Explain some of the current concerns First Nations communities have for the care of environmental water.
4. Source 2: Explain how First Nations Peoples have sustainably managed the Barwon River.

Presenting ideas

1. Describe how geographical descriptions indicate how water is valued.
2. Using examples, explain how the ability of First Nations Peoples to manage waterways has been disrupted.
3. What evidence is there for historical and contemporary sustainable water management by First Nations Peoples?
4. Source 1: Explain the interconnection between the Women's Ranger Network and the sustainability of the Great Barrier Reef.

Make it spicy

How are First Nations Peoples connected to *place*?

HOW TO

Place, page 226; presenting ideas, page 449

First Nations Peoples

Who has a spiritual connection to Birrarung?

Today, Birrarung is commonly known as the Yarra River. It is thought that it got this name after an English land surveyor misheard some Kulin people exclaiming 'yarro yarro' meaning 'it flows'. It has been known as Birrarung for far longer than it has been called the Yarra, which is its colonial name.

For thousands of years, Birrarung acted as a natural border between the Countries of the Woi Wurrung and the Boon Wurrung Peoples of the Kulin Nations. Birrarung was also important as a perennial freshwater river, home to many important species of plants and animals.

Because Birrarung was important to both Peoples, there are varied accounts for how the river was formed.

For some Woi Wurrung people, Birrarung was formed after an old man attacked and tried to abduct a mischievous young boy. Bundjil (the Eagle) threw sharp stones in the path of the old man, instructed him to return the boy, and told the old man to use this as a lesson that all people should be kind to children. The path of Birrarung was the path the old man took while trying to abduct the boy.

Source 1: This is an image of Tanderrum, an important ceremony that was forbidden for over 150 years. It is an important coming together of the Kulin Nations for trade, diplomacy, celebration, ritual, and building and maintaining relationships. This ceremony could only be held on the banks of Birrarung because it was fertile enough to produce the food to sustain a large gathering of people for a long time.

Source 2: This is a contemporary aerial image of Birrarung (Yarra River). Note the brown colour of the water. Before colonisation, the water was clean and clear. Today it is heavily contaminated with chemical and soil runoff from the agricultural land upstream. Many would argue that not enough is being done to care for Birrarung and for Country generally.

For some Boon Wurrung people, the current form of Birrarung was formed during a time of great chaos where the Kulin Nations were fighting and were not looking after Country, the plants, animals or each other. In response to the Kulin people not following the laws, the sea rose up and flooded the fertile plain where Port Phillip Bay is located today. The people despaired and asked Bundjil and Waa (the Crow) what they could do to get the sea to stop rising. They advised the Boon Wurrung people to follow Bundjil's laws and care for Country and look after the children. The Boon Wurrung changed and followed Bundjil's laws again to look after Country and the children, and the sea stopped rising. It is said that Birrarung still flows through the old plains under the water of the bay.

Birrarung was not always the brown river we know today. Before colonisation it was clear, clean and healthy. Part of keeping Birrarung well was making sure to share the important information on how to care for Birrarung through story, song, dance and ceremony. Kulin children were taught to care for and respect Birrarung to ensure there was enough clean and fresh water for everyone, including the plants and animals that depended on Birrarung, and the people who depended on them for food and medicine.

Learning ladder G1.14

Value of water

1. Why are rivers valuable resources?
2. How is Birrarung valued today?
3. How has human use of Birrarung influenced the amount and quality of water in the environment?
3. Explain the significance Birrarung holds for Woi Wurrung and Boon Wurrung Peoples in their cultural and spiritual traditions.
4. Consider the different groups that represent your community. How does their value of water potentially differ from First Nations Peoples'?

Representing information

1. How do Dreaming histories help provide knowledge and understanding of place?
2. Create a mind map highlighting the different ways First Nations Peoples care for and connect to Country, using Birrarung as an example.
3. Using a map of Victoria, highlight the direction Birrarung flows. Label where the river starts and connects to the ocean, and the regions the river flows through.
4. Annotate Google My Maps or Google Earth to identify the different Indigenous nations that Birrarung flows through.

Make it spicy

How has Birrarung *changed* over time?

Change, page 228;
representing information, page 420

HOW TO

G1.15

Case study

Why is the Ganges an important river?

India's Ganges River is important for the health of the environment, essential for human wellbeing, and critical for food production and industry. For many people, the Ganges River is central to religion, culture and their stories.

Values of the Ganges River

The Ganges River begins high in the Himalayan Mountains. It runs through northern India to the Bay of Bengal. The Ganges River carries sediment full of nutrients, which it deposits along its banks to support life in the natural environment and provide fertile soil for agriculture.

The Ganges River and its surrounding catchment support a population of more than 400 million people – 16 times the entire population of Australia. The Ganges River is a vital resource to India. It provides fresh water for domestic and industrial use, irrigation for agriculture, and bathing for millions who worship the river as goddess Mother Ganga.

India's Ganges River faces many threats:

- Human and industrial pollutants fill the river in populated areas, making the Ganges River one of the most polluted rivers in the world.
- Competition for water increases as the population of the Ganges catchment grows, particularly through demands for agriculture.
- Climate change has already led to a decrease in glaciers, an important source of water for the Ganges.

Source 1: The Ganges River catchment is bounded by the world's highest mountain range, the Himalayas, to the north.

Ganges River catchment

Source: Matilda Education Australia

▲ **Source 2:** During the Kartik Purnima festival in Patna, India, tens of thousands of Hindus come together on the banks of the Ganges River to bathe and offer prayers.

The holy Ganges River

The Ganges River in India is perhaps the holiest river in any religion. The Ganges is worshipped by Hindus, who believe they are purified by bathing and praying in the river. The Ganges is worshipped as a goddess in the Hindu religion, and is referred to as Mother Ganga. Hindus believe that the waters of the Ganges are sacred and can wash the sins of previous lives away.

It is believed that people who die near the Ganges reach heaven, escaping the cycle of rebirth. As a result, cremating a dead body on the banks of the Ganges – or spreading the ashes of the deceased in the water – is believed to lead to heaven. The city of Varanasi on the banks of the Ganges is India's spiritual capital. Every year, 32 000 corpses are cremated in Varanasi, and up to 200 tonnes of half-burnt flesh ends up in the Ganges, along with the unburned bodies of those Hindus who cannot afford firewood for their cremation.

The waters of the Ganges River that Hindus believe are so purifying are also dangerous to their health. It is estimated that two-thirds of the people who regularly use the Ganges for bathing, or for washing clothes or dishes, will suffer a serious illness. In 2023, 120 000 Indian children died from the effects of diarrhoea, a waterborne disease. This death toll was higher than for any other country in the world.

Learning ladder G1.15

Value of water

1. The concept of place considers the significance of an area for people. Why is the Ganges River an important place?
2. In pairs, discuss the impact of the Ganges River on the health of people who bathe in it.
3. Suggest how the Indian government could help clean the Ganges River, while still respecting its spiritual importance.
4. Discuss the following statement: 'All Indigenous Peoples groups should be consulted when discussing the management of sacred waterways.'

Planning and collecting

1. Source 2: What is happening in this photograph? Suggest two potential questions you could research to understand more.
2. List information that may be needed to investigate the following inquiry question: 'How does the spiritual value of the Ganges impact local perceptions of health risks linked with bathing in the river?'
3. Create a data bank from reliable secondary sources exploring the inquiry question in Question 2.
4. Imagine you had the opportunity to travel to India. What fieldwork techniques would best help you gather information for the question in Question 2? Explain your choices.

Make it spicy

Describe the *environment* around the Ganges River.

HOW TO

Environment, page 230; photographs, page 436; planning and collecting, page 410

How much water is used to make goods?

Water is essential to the economy. It is used in agriculture, industry, business and energy production. Every day you consume 3496 litres of water without being aware of it. Geographers call this virtual water. It is the responsibility of every consumer and business to consider virtual water when making economic decisions.

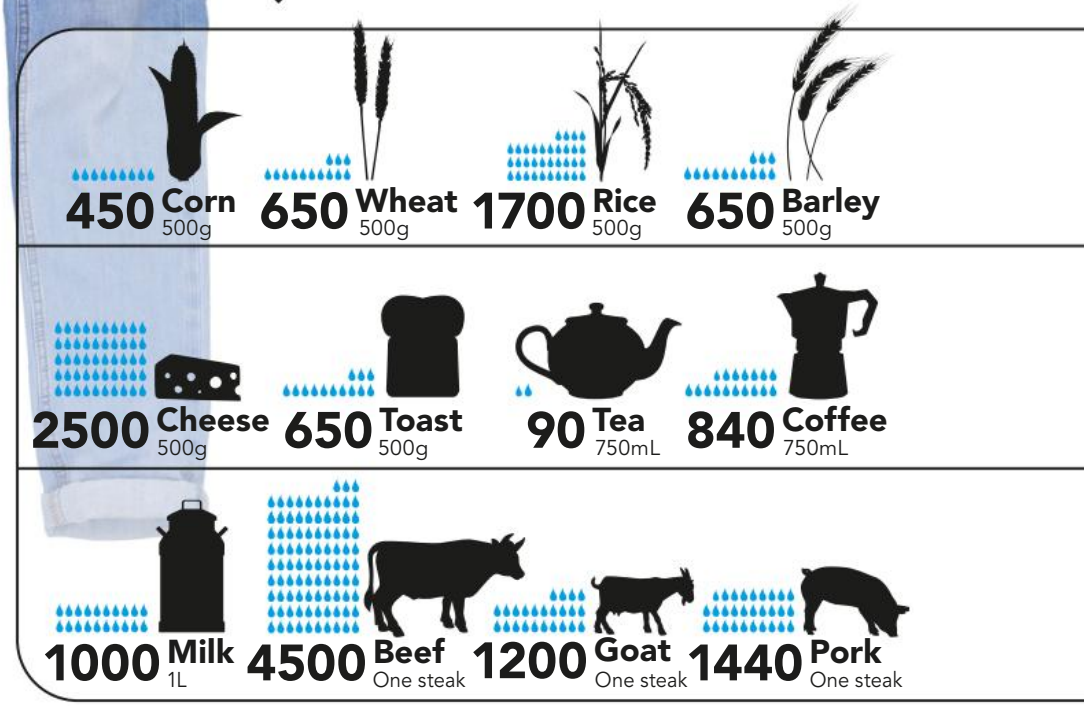
Source 1: Creating jeans is a water-hungry process.

Virtual water

Although it is invisible, millions of litres of water go into making the products we use every day. We don't physically drink this **virtual water**, but it is used in the production of almost every product we use.

The water footprint of a product is the total amount of water used in each step of producing and transporting that product. To make a pair of jeans, cotton needs to be grown, spun and woven into denim. Water is used during the production process to create steam for power, to cool machinery, and to flush and clean equipment. More water is required to make packaging and to transport the jeans overseas.

Source 2: Water footprint of various foods and drinks (in litres)



3 060 000

The production of the grain, pasture and hay to feed a cow over three years requires more than 3 million litres of water.

During three years of growth the grain-fed cow eats nearly 1300 kg of grains, such as wheat, oats, barley and corn.

1300

7200

The cow also eats 7200 kg of pasture and hay.

It requires 7000 litres of water per cow to service the farmhouse and the slaughterhouse.

7000

A single cow drinks 24 000 litres of water in three years.

24 000

In total, we need 4500 litres of water to make just one steak.

4500

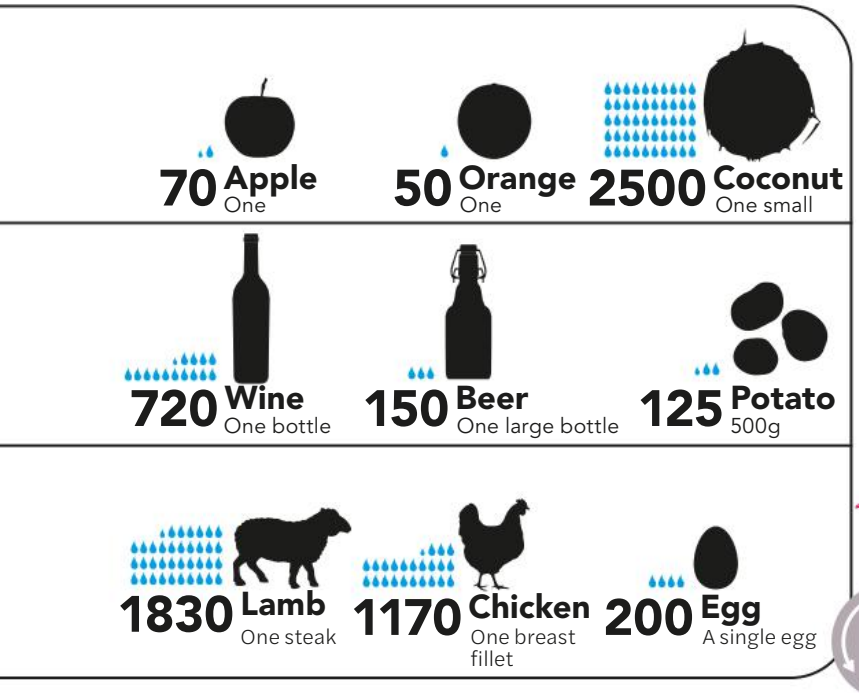
Source 3:
It takes 4500 litres of water to make one beef steak.

Water for farming

In most parts of the world, more than 70 per cent of fresh water is used for agriculture. By 2050, the world's population will have grown to 9 billion people, and that will require a 50 per cent increase in farm production and a 15 per cent increase in water use.

Of all water used for agricultural production in Australia, 90 per cent is used for irrigation of crops and pastures. Irrigation is the supply of water to farmland that doesn't receive enough rain to raise cattle or grow crops.

Water is required in the production of all foods – one-third of all water used in agriculture is for growing grain to feed livestock. Beef is the most 'water hungry' meat to produce, needing 4500 litres of virtual water to produce just one steak.



Source: Timm Kekeritz/Virtual Water

Learning ladder G1.16

Uses of water

1. Source 1: What is the total water footprint of one pair of jeans?
2. Source 2: Calculate the amount of water required to produce a meal of bacon and eggs on toast.
3. Source 1: Look at the example of the life cycle of a pair of jeans.
   - **a** Which stage of the jeans-making process uses the most water? Why?
   - **b** Can you suggest an alternative to this stage that would require less water?
4. Sources 2 and 3: Explain why some beef production requires more virtual water for growth than other farm products. How might this impact water availability in agricultural areas?

Making conclusions

1. Why is fresh water vital for industry?
2. Describe the importance of understanding virtual water.
3. Conclude how virtual water hides the real impact of agriculture and manufacturing.
4. Source 2: How reliable is the data presented. Why is this data used to explain these concepts?

Make it spicy

Suggest how we can change our use of virtual water in *sustainable* agriculture.

HOW TO

Making conclusions, page 443; sustainability, page 234

How much water do different countries use?

When countries develop economically and expand their populations, they require more building and **manufacturing** materials, and people consume more food, water and energy. These products all require the use of water and, as a result, six times more fresh water is used in the world today than it was in 1900. Countries around the world prioritise their water use differently, leading to global variations in the amount of water used for agriculture, industry and domestic use.

Global variations in agricultural water use

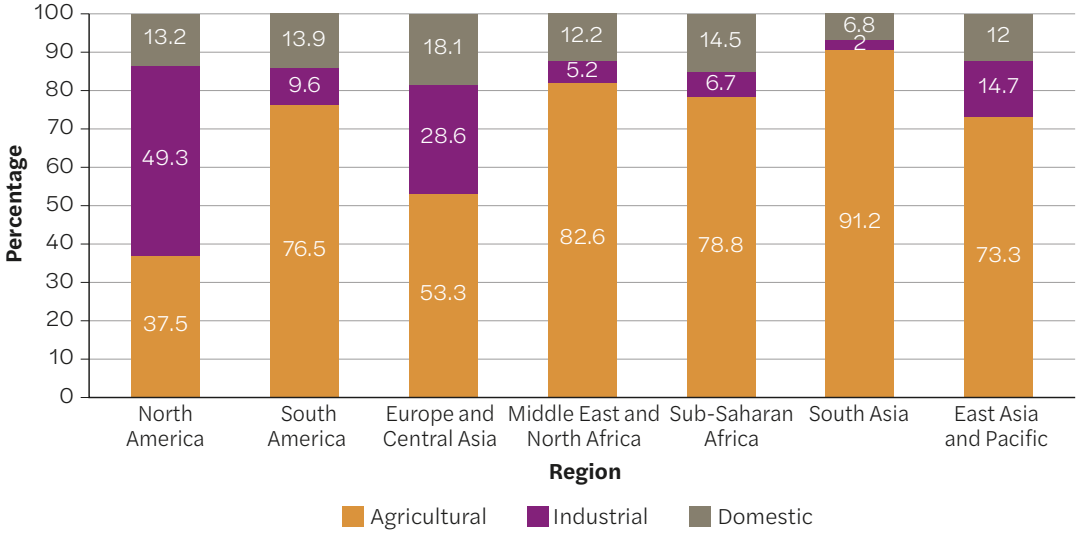
Agricultural water use includes irrigation of crops, livestock production and aquaculture. It is the most water-intensive industry in the world as food sources require large amounts of water. The amount of water used by countries is influenced by:

- **population size**: larger populations require more food. Countries with vastly growing populations could require up to 60 per cent more food by 2050, increasing the amount of water used in agriculture in the future
- **types of crops produced**: some crops are more water intensive than others. As a result, countries that grow rice or wheat, or produce large amounts of beef tend to use higher amounts of water
- **access to water**: countries experiencing drought or dry periods will use more irrigation
- **economy**: countries that rely on agriculture to trade will use more water for agriculture
- **development**: more developed countries can often invest in water-conserving technologies, such as drip irrigation, reducing the amount of water they use in agriculture.

Global variations in industrial water use

Industrial water use encompasses water used in manufacturing, processing, cooling and other industrial processes. Developed countries with advanced manufacturing industries typically have higher industrial water use compared to developing nations. As more countries develop economically in the future, it is expected that 406 per cent more water will be required for manufacturing and 144 per cent more for electricity by 2050.

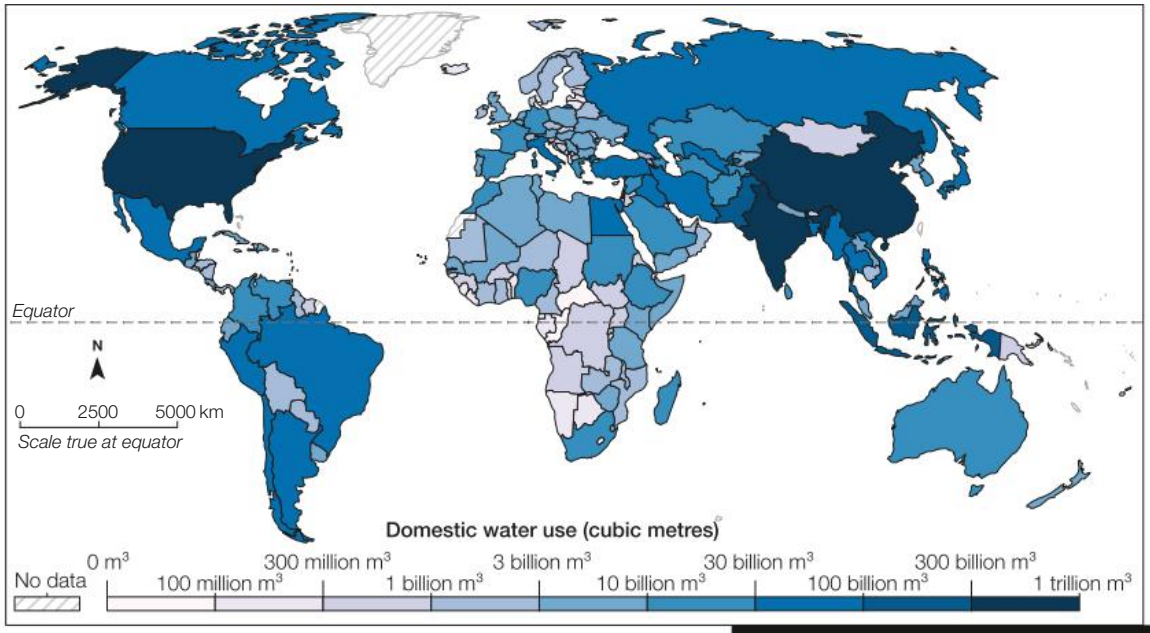
Global agricultural, industrial and domestic water use by region



Source 1: A composite bar graph showing the percentage of agricultural, industrial and domestic water use in different regions across the world

Source: World Bank Data

World domestic water use, 2021



Source 2: A choropleth map of the use of fresh water for industrial, agricultural and domestic purposes across the world. The totals include the use of desalinated water, where this is a main source of freshwater for countries.

Source: Our World in Data

Global variations in domestic water use

Domestic water use refers to water used for household purposes, such as drinking, cooking, bathing, cleaning and sanitation. Wealthier countries with large urban areas generally have higher domestic water use due to higher **population densities**, and greater access to water-supply infrastructure. They also require water to maintain amenities such as landscaping, pools and household appliances. It is expected that 125 per cent more water will be used to meet domestic demands globally by 2050 as more countries develop economically.

Source 3: Growing rice requires plenty of heat and water. Rice is well suited to warm, wet, tropical places such as Bali in Indonesia. Rice seedlings are planted in rows by hand, and rainfall or irrigation is used to keep the paddies flooded for about four months. To produce 1 kilogram of rice, up to 5000 litres of water is used.

Learning ladder G1.17

Uses of water

1. List two reasons why water use has increased in the world since 1900.
2. Discuss the following statement as a class: 'Technology will reduce the amount of water used in the world by 2100'.
3. How does rice growing interrupt the flow of water?
4. Source 1: In what ways could the use of water change these places?

Interpreting information

1. Source 1: Identify the regions that use the most water for industrial purposes, and the regions that use it the least.
2. Source 2: Using PQE, describe the spatial distribution of domestic water use.
3. Source 1: Consider the concepts of environment, interconnection and sustainability. Using data, explain the global variations in agricultural water use.
4. Predict how global variations of water use might change in the future. Consider population size, economic growth and human needs.

Make it spicy

Can a *sustainable* balance be made between agricultural water use and domestic water needs?

HOW TO

Environment, page 230; interconnection, page 227; interpreting information, page 428; PQE, page 438; sustainability, page 234

How do I conduct a good inquiry?

Throughout the chapter you have developed knowledge and understanding of water as a resource. Background knowledge is important as it helps you make connections to new information, ask better questions and consider different perspectives. As you were progressing through the chapter you have been gathering information through highlighting, note taking or responding to the Learning ladder. It is now time to start planning your inquiry! Refer to pages 452–8 for a step-by-step guide to this process.

Throughout the chapter, a range of case studies was presented to apply your learning to real-life events. Review these pages and select a case study to build your inquiry around.

- How does the Nile River connect places?, page 252
- How has the Murray River changed?, page 260
- How do First Nations Peoples value water?, page 264
- Who has a spiritual connection to Birrarung?, page 266
- Why is the Ganges an important river?, page 268

For your selected case study, complete a 'see, think, wonder' to help build curiosity and develop ideas you may cover in your inquiry.

Remember: A good inquiry will be focused on an aspect of the topic that interests you. It is more than just a research task that you present as a PowerPoint; it is a genuine investigation into something you are wondering about.

See
What do you see?
What are the human and physical characteristics?

Think
What do you think about that?
Where is it?
Why is it there?
When did it occur?

Wonder
What questions does this raise in your mind?
What else do you need to know to understand what is happening here?
What are other people saying about this?

Write down five observations you make when viewing the data presented.

The following is a list of example open-ended questions which may help you to develop your inquiry.

Water as a resource

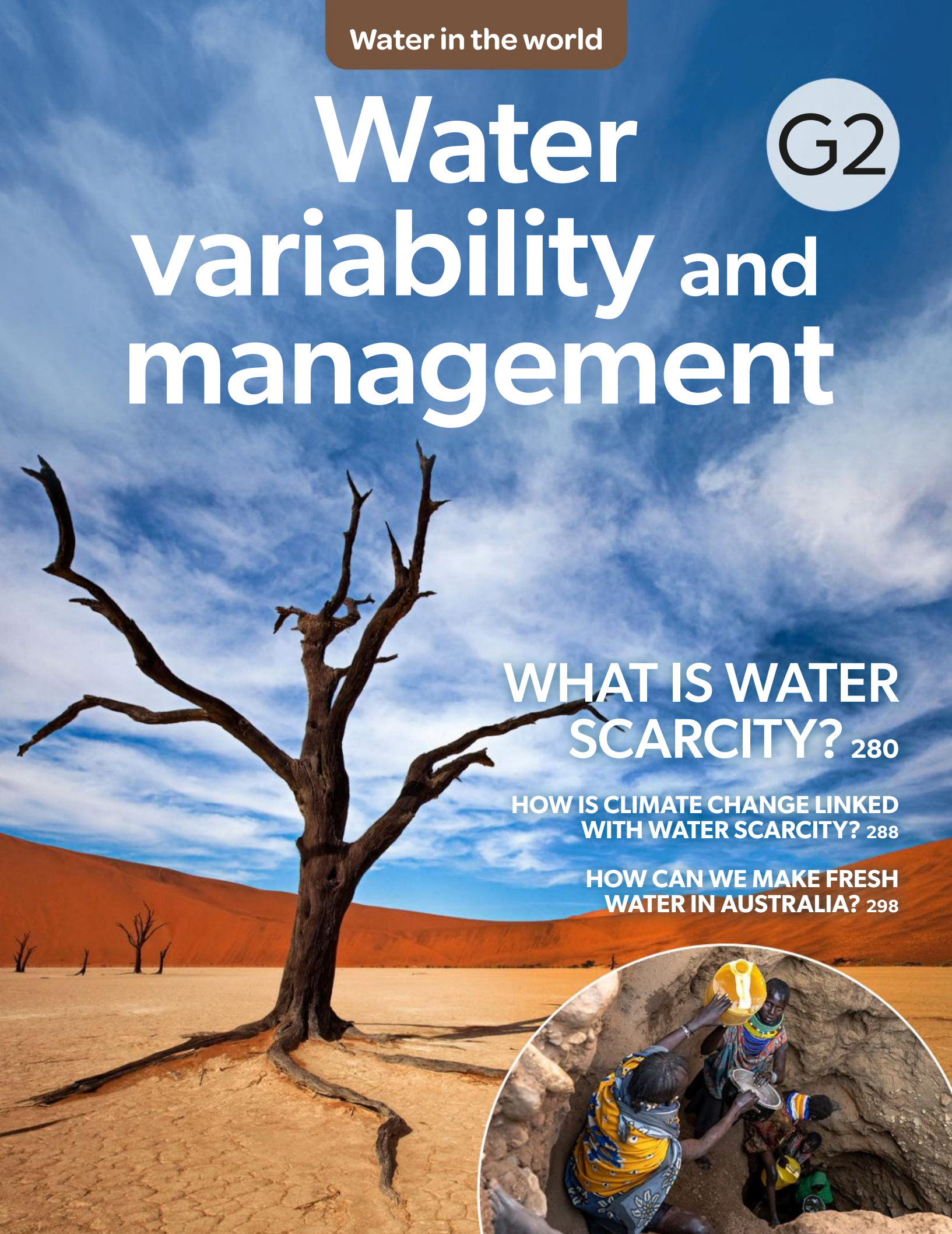
- **Descriptive question:** *What are the main uses of water in my community?*
- **Procedural question:** *How is drinking water treated before it reaches our taps?*
- **Comparative question:** *How does water use in rural areas compare to water use in cities?*
- **Evaluative question:** *How effective are current water conservation practices in my area?*

Level up!

Throughout the chapter you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to attempt new skills. When planning your inquiry, consider how you may integrate geospatial technology into your fieldwork or how you may explore a range of perspectives. Use the How-to chapter to support you in planning and research.

Water variability and management

G2



WHAT IS WATER SCARCITY? 280

HOW IS CLIMATE CHANGE LINKED WITH WATER SCARCITY? 288

HOW CAN WE MAKE FRESH WATER IN AUSTRALIA? 298

G2.0

How can I understand water variability and management?

Without water, life as we know it could not exist on Earth. Freshwater resources are not evenly distributed across the globe and within regions. Access to water resources can vary at different times and is changing in response to global warming. As populations grow, the demand for water increases, and the way we use and preserve water is important to ensure a sustainable future.

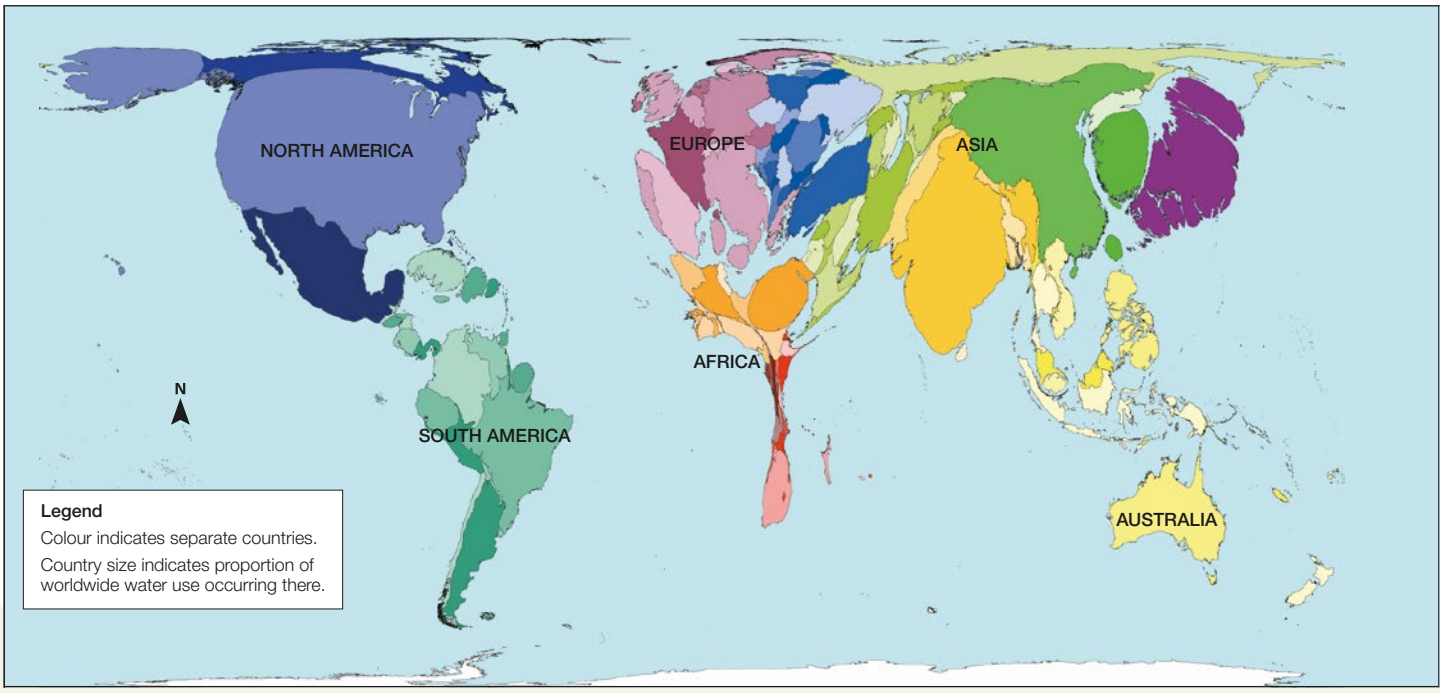
Learning ladder

The Learning ladder lists the knowledge and skills you will develop throughout the year, with five levels of increasing difficulty. By mastering foundational knowledge and skills at the lower levels, you will build a solid understanding that prepares you to tackle more advanced concepts and skills as you progress towards the top.

Steps in knowledge progression	Water distribution	Water scarcity	Water case studies	Planning and collecting	Representing information
5	I can predict the impacts of climate change on water variability.	I can evaluate water management strategies.	I can predict water scarcity.	I can use geospatial technology to record data.	I can follow ethical practices when working with data.
4	I can explain the impact of water variability.	I can discuss water management challenges.	I can discuss competing uses for water leading to scarcity.	I can gather primary data.	I can use geospatial technologies to create maps.
3	I can explain the factors that contribute to water variability.	I can explain water management.	I can compare water scarcity between places.	I can gather information from reliable secondary sources.	I can use geographic conventions to construct maps.
2	I can describe water resource distribution.	I can describe the causes of water scarcity.	I can explain water scarcity in places.	I can plan an inquiry.	I can represent data and information.
1	I can identify water resources.	I can describe water scarcity.	I can identify places vulnerable to water scarcity.	I can ask open-ended questions.	I can select data relevant to a question.
	Water variability and management			Geographical inquiry	

Global domestic water use

Source: Matilda Education Australia



▲ **Source 1:** The world – but not quite as you expect! In this map, the size of each country shows the proportion of the world's water that is used in households there.

I can use geographical concepts to structure data analysis.	I can evaluate ethical considerations.	I can consider perspectives to evaluate strategies.	I can analyse the implications of phenomena.	5
I can predict change to patterns.	I can assess the reliability of data.	I can design strategies.	I can explain interconnections with data.	4
I can explain distributions and patterns.	I can write evidence-based conclusions.	I can predict the impact of a strategy.	I can support explanations with data.	3
I can describe distributions and patterns.	I can describe the impact of geographical phenomena.	I can explain a strategy.	I can explain the relevance of information.	2
I can read graphs and maps.	I can answer geography questions.	I can describe a strategy.	I can describe phenomena using geographical terms.	1
Interpreting information	**Making conclusions**	**Strategies for action**	**Presenting ideas**	Steps in skill progression
	Concluding and decision-making		**Communicating**	

How does access to water vary?

Clean water is essential for survival, yet the access people have to water varies greatly, depending on where in the world they live. More than 785 million people around the world don't have access to a safe supply of water.

Supplying the world with water

In the 1900s, the world's population tripled and water usage increased by six times. Agriculture accounts for 70 per cent of all water consumed, compared to 20 per cent for industry and 10 per cent for home use.

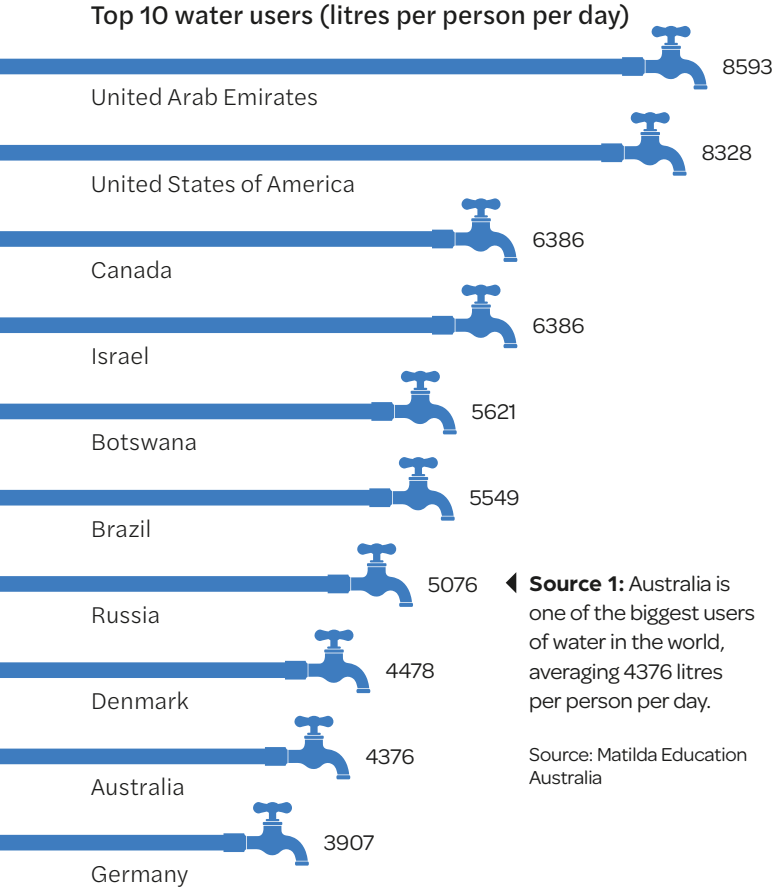
Supplying the world with enough water is now a huge issue. In Australia in 2022, we consumed 79 000 gigalitres of water – that's enough water to completely fill Victoria's Port Phillip Bay more than three times.

Throughout the world there are places that are water rich and places that are water poor. Australia is water poor. It is the world's driest inhabited **continent**, and the quantity of water resources varies greatly across the continent.

However, Australia is a high-income country, so nearly everyone can access **safe water** to drink. Many other countries in the world are not so lucky. One in nine people in the world don't have access to safe water, and millions of people get sick or die from drinking dirty water.

Per person, Australians are one of the biggest users of water in the world. We need to manage our valuable water resources carefully, so that we balance the needs of different users in homes and on farms, as well as the needs of industry. By making a few simple changes, we can all help save precious water resources.

Top 10 water users (litres per person per day)



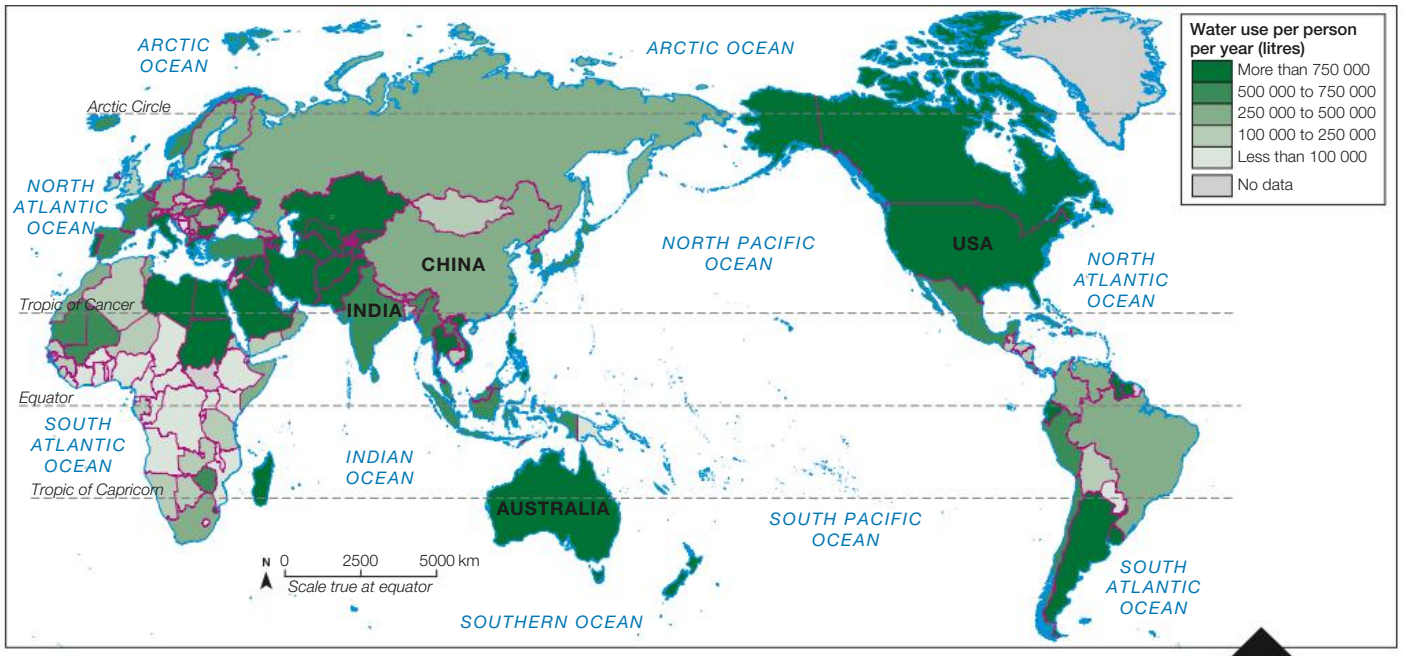
Source 1: Australia is one of the biggest users of water in the world, averaging 4376 litres per person per day.

Source: Matilda Education Australia

Source 2: Since 1967, Morocco has used 140 large dams and numerous wells to manage water resources, supporting a large irrigation system and securing drinking water. About 75 per cent of groundwater supports irrigation and industry accessed through boreholes and wells.

World water use

Source: Matilda Education Australia



Source 3: World water use per person per year

Learning ladder G2.1

Water distribution

1. Source 2: Identify the water resources this man may have access to in this place.
2. Source 3: Use PQE to describe the global pattern of water use.
3. Sources 1 and 3: Suggest reasons why Australia has a high level of water use.
4. Explain the impact of water variability.

Planning and collecting

1. Source 2: Think about your daily access to and use of water. Write three things in this photo that make you wonder about the access to and use of water in this place.
2. Imagine you were studying water use in Australia. What fieldwork methods may be useful for collecting relevant data?
3. Sources 1 and 3: The United Arab Emirates is one of the most water-poor places in the world. What information from the sources supports this statement?
4. Gather data on water variability in your community. Does it vary between groups, uses or seasons?

Make it spicy

How can humans *sustainably* use water?

HOW TO

Planning and collecting, page 410; PQE, page 438; SHEEPT, page 440; sustainability, page 234

What is water scarcity?

Water scarcity happens when there's not enough fresh water to meet people's needs. Water scarcity can be caused by natural factors such as arid climates and low rainfall, or human factors such as the overuse or polluting of resources.

Nearly 4000 cubic kilometres of fresh water are taken from the world's lakes, rivers and aquifers each year. This amount of water would fill Sydney Harbour 7000 times. World water withdrawals have doubled in the last 50 years. It is estimated that by 2050, an additional 1 billion people will live with extreme **water stress**.

Water stress is a way to measure how much water a country uses compared to how much fresh water it gets from natural sources like rainfall. It doesn't mean the country is going to run out of water, but it shows how close it might be to using more water than is naturally available in the region. If a country uses more water than is replenished (more than 100 per cent), it could mean they are using water faster than it can be replaced or they are heavily relying on alternative water sources like **desalination** (turning seawater into fresh water).

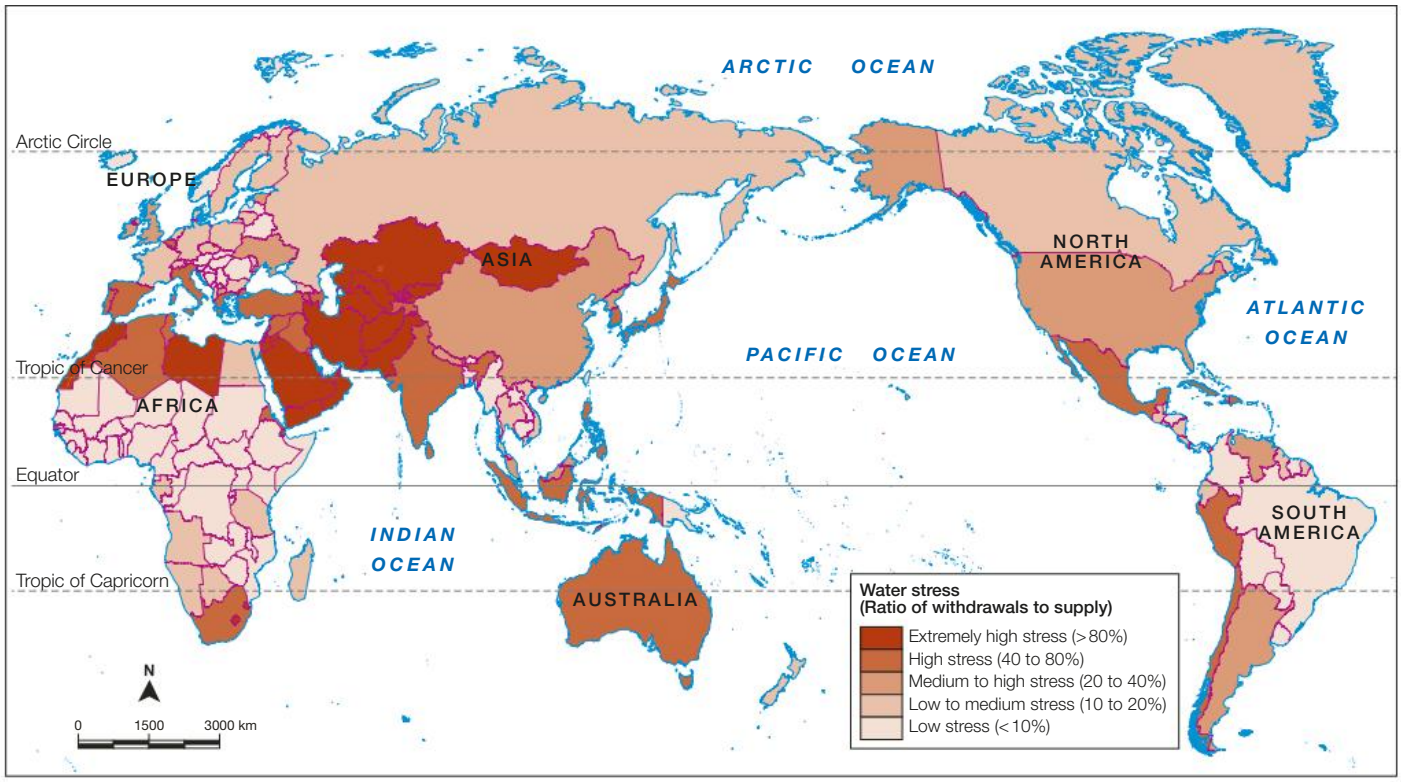
In the Middle East and North Africa, 83 per cent of the population faces water stress. Approximately 80 per cent of the region's water is used for irrigation, industry and domestic needs. This high consumption, combined with frequent droughts, makes these areas highly vulnerable to water shortages. In 2020, some of the most water-stressed countries in the world were withdrawing well over 100 per cent of resources or heavily relying on desalination: Libya (using 817 per cent) and Saudi Arabia (using 974 per cent).

Water scarcity is one factor that affects water stress. A region might be highly water stressed but not necessarily water scarce. A region can be water stressed if demand is high or management is poor, even if it has enough water overall. Water scarcity means there is not enough water to meet needs of the population.

Source 1: Urmia Salt Lake in Iran. Iran is facing water stress, with over 90 per cent of the country's available water used for agriculture.

World water stress

Source: Matilda Education Australia



Source 2: Water stress gauges how a country's water use compares to its natural supply, indicating how close it might be to overusing available resources. Countries under a high level of water stress struggle to meet the demands for water from agriculture, industry and homes.

Learning ladder G2.2

Water scarcity

1. Define 'water scarcity'.
2. Source 1: How might human activities such as agriculture or urbanisation affect water availability?
3. What is desalinisation and how does it help manage water scarcity?
4. Why is the management of water challenging, particularly in arid regions?

HOW TO

Interconnection, page 227; layers, page 427; mapping with BOLTSS (NA), page 424; representing information, page 420

Representing information

1. Source 1: How is the reduction in water volume in Urmia Salt Lake an example of Iran's water stress?
2. Draw a diagram that explains the difference between water stress and water scarcity.
3. Source 2: Using tracing paper, create a new layer illustrating the distribution of regions with the lowest annual rainfall.
4. Access: https://mea.digital/chw and explore the various data layers and comment on the interconnection between water demand and irrigation over time in one place.

Make it spicy

How is water scarcity *interconnected* with unsustainable water use?

G2.3

Case study

What has led to water scarcity in North Africa?

The Middle East and North Africa are the world's most water-scarce regions, with 15 of the 20 most water-scarce countries. Climate change, population growth, rapid economic development and unsustainable farming practices increase risk of water scarcity.

Growing populations

The Middle East and North Africa have only 2 per cent of the world's renewable fresh water but account for over 6 per cent of the global population. In North Africa, the average renewable water per person is less than 1000 cubic metres annually, highlighting severe water stress.

North Africa's urban population has grown from 34 per cent in the 1960s to 56 per cent in 2019, with many cities located far from water sources, putting a strain on groundwater sources. In Libya, the Great Man-Made River project transports groundwater from desert aquifers to coastal cities like Tripoli. However, this project has been criticised as costly, inefficient and unsustainable. In Morocco, coastal cities use desalination plants and technology, but there are still challenges, including managing costs, water and energy needs for different groups.

Climate change

In Morocco and Algeria, the Atlas Mountains are a key source of rainfall, but the amount of water is inadequate. In recent years these countries have experienced extreme droughts and wildfires. Less than 10 per cent of the region receives over 300 millimetres of rainfall per year.

Farming practices

In Morocco and Tunisia, agriculture employs 20–33 per cent of workers and contributes 10–20 per cent of GDP. However, it is also very water-intensive, accounting for around 85 per cent of the available fresh water in Morocco alone.

Due to the arid climate, many farmers rely on irrigated agriculture. When combined with pesticides and fertilisers, intensive irrigation can have negative impacts on the environment. In Tunisia, the area of irrigated land almost doubled from 1990 to 2010, leading to decreased soil fertility and increased erosion.

UNESCO and the UN Food and Agriculture Organization have suggested that a return to traditional irrigation methods in North Africa may be a more sustainable way to manage water use for

North Africa available fresh water 2001–25 (predicted)

	Population (millions)		Per capita annual renewable fresh water (sq metres)		% of population with access to safe water	% of population with access to adequate sanitation
	2001	2025 (predicted)	2001	2025 (predicted)		
Algeria	31	43.2	462	331	89	92
Egypt	69.8	96.2	1243	903	97	98
Libya	5.2	8.3	114	72	72	97
Morocco	29.2	40.5	1027	741	80	68
Tunisia	9.7	12.5	422	327	80	84

Source 1: Available renewable fresh water is predicted to decrease in the future as a result of overuse and climate change.

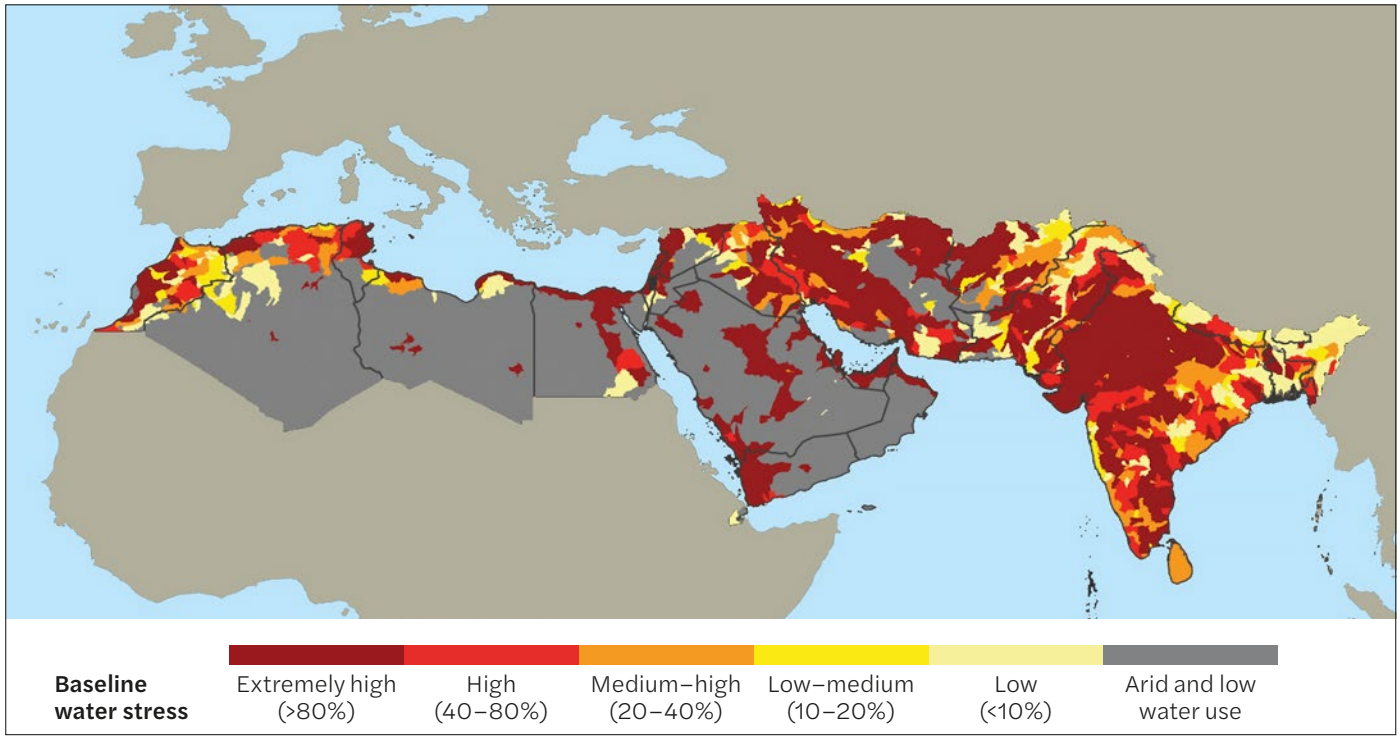
Source: PRB

farming. In Algeria, the Adrar oasis uses a **foggaras**, underground pipes stretching for more than 2000 kilometres, which takes fresh water from aquifers to local palm groves.

Changing crop species to those that are more resilient to the arid climate may also be a sustainable solution for the reduction of water use, while also increasing crop yields. In 2022, the International Centre for Agricultural Research in Dry Areas opened a **gene bank** in Morocco. Gene banks store living things or parts of them, like seeds, which hold the unique genetic material that make each plant or animal special. Gene banks keep this genetic information safe so it can be used in the future. The centre aims to research drought-resistant crops and explore other sustainable agricultural methods for North Africa.

Water stress across the North African region

Source: World Resources Institute



▲ **Source 2:** Water stress is widespread in the Middle East and North African regions.

Learning ladder G2.3

Water case studies

1. List three African nations facing water scarcity.
2. Explain how climate change will impact water scarcity.
3. Source 2: Explain why some countries in this region may be experiencing greater water scarcity than others.
4. How may competing water uses lead to water scarcity in North African countries?

Representing information

1. Source 1: How is Egypt's per capita access to annual renewable fresh water expected to change?
2. Source 1: Create a suitable bar graph to display the 2025 predicted population, per capita annual renewable freshwater for two selected countries.
3. Source 1: Using a suitable legend, map the distribution of percentage of population with access to safe water and adequate sanitation for the countries listed.
4. Access: https://mea.digital/tfh and create a map with a layer that visualises 'all time surface water' for North Africa or a country in North Africa. Comment on the change over time. What does this data mean?

Make it spicy

Explain the process of climate *change*.

Change, page 228; graphing, page 423; representing information, page 420; SHEEPT, page 440

HOW TO

How does water scarcity impact Australia?

Water scarcity is a persistent issue in Australia due to our dry and variable climate. Scientists have warned that global warming is resulting in an even hotter and drier climate in Australia, which will drive more frequent droughts and severe bushfires.

Water scarcity

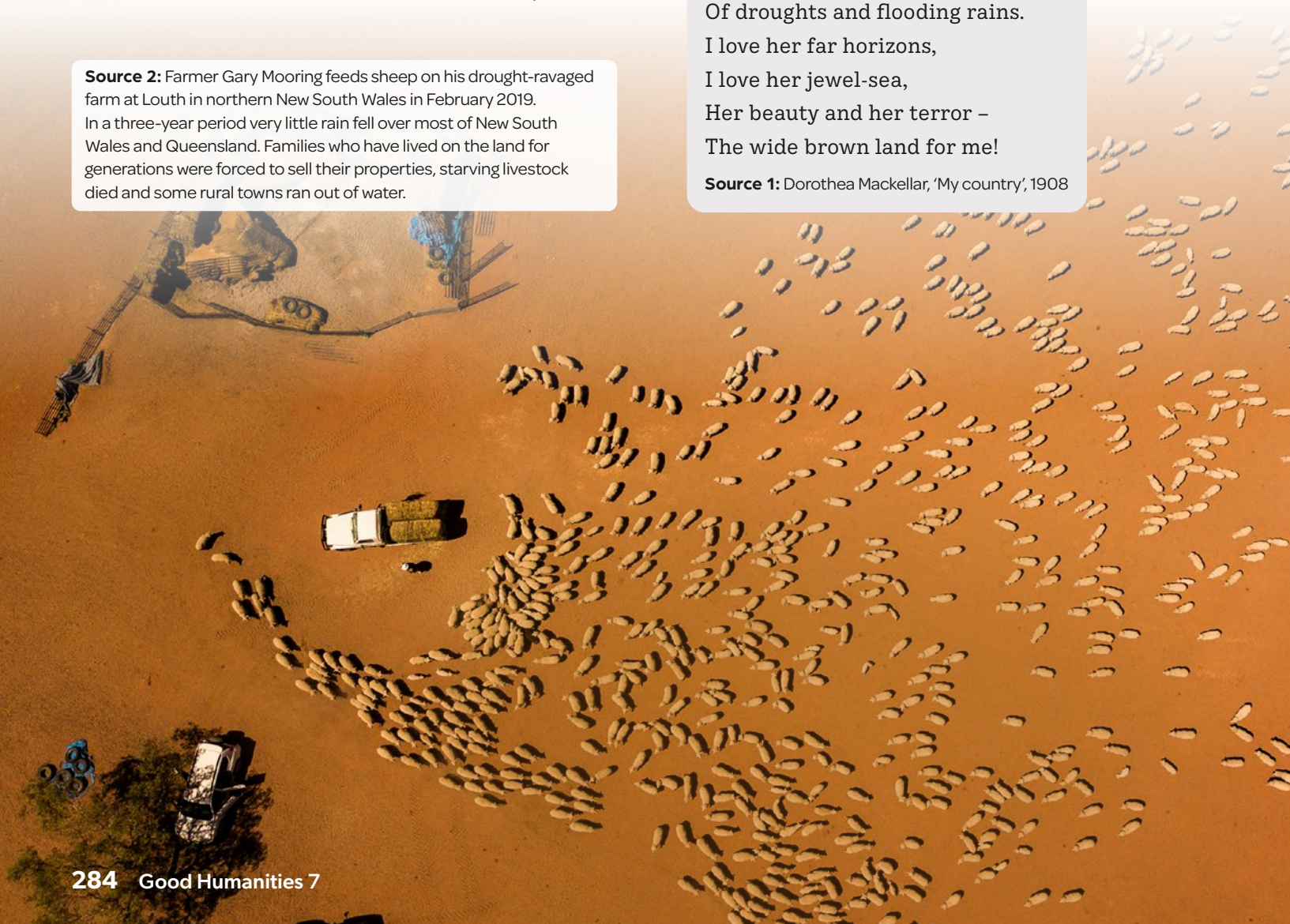
Physical water scarcity occurs when a region's demand for water resources is higher than the limited water resources found there. Economic water scarcity occurs when water resources are adequate, but they are not available to people due to a lack of infrastructure such as wells, pipes, pumps and water sanitation.

Physical water security in Australia is a consistent and growing issue. Australia is the driest inhabited continent in the world, with one of the most variable rainfall patterns.

The dry and variable nature of Australia's climate was well captured by Dorothea Mackellar in her famous poem, 'My country', written in 1908:

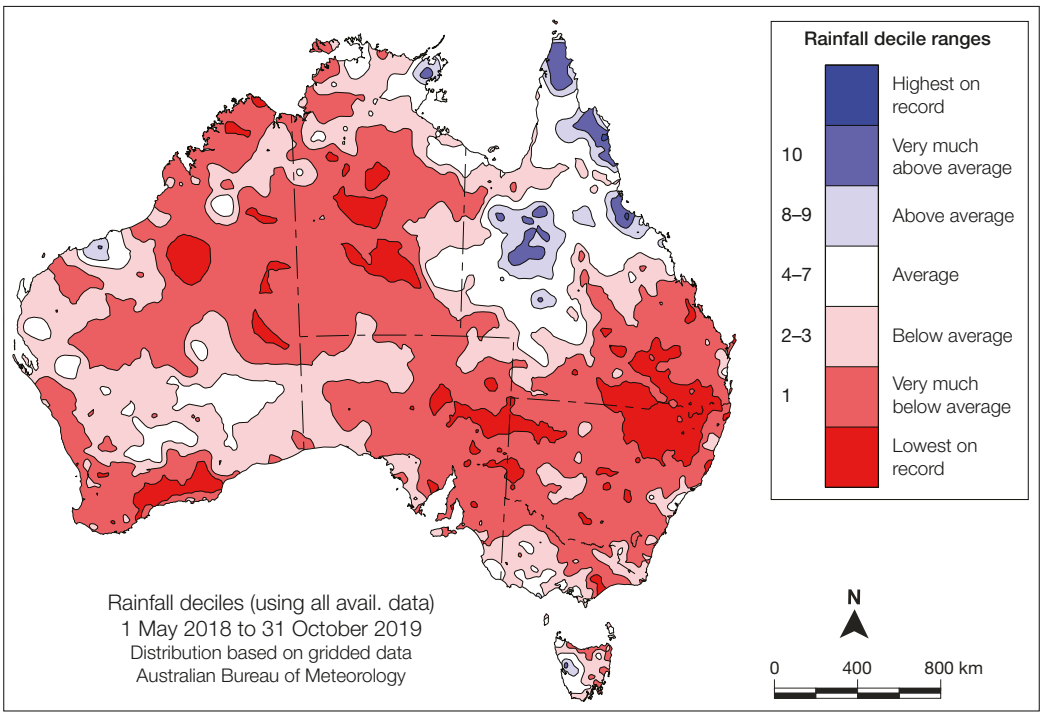
I love a sunburnt country,
A land of sweeping plains,
Of ragged mountain ranges,
Of droughts and flooding rains.
I love her far horizons,
I love her jewel-sea,
Her beauty and her terror –
The wide brown land for me!

Source 1: Dorothea Mackellar, 'My country', 1908



Source 2: Farmer Gary Mooring feeds sheep on his drought-ravaged farm at Louth in northern New South Wales in February 2019. In a three-year period very little rain fell over most of New South Wales and Queensland. Families who have lived on the land for generations were forced to sell their properties, starving livestock died and some rural towns ran out of water.

Australian rainfall shortages in 2018 and 2019



Source 3: Australian rainfall shortages in 2018 and 2019

Source: Australian Bureau of Meteorology

Hotter and drier averages

In 2019, Australia recorded its driest year ever, with the lowest annual rainfall the country has ever seen. Rainfall shortages were most extreme in the northern half of New South Wales and southern Queensland, where rainfall totals were the lowest ever recorded.

Globally, 2023 was the hottest year on record, with warmer than average ocean temperatures resulting in record low Antarctic sea ice. In 2023, Australia experienced its hottest ever winter, with temperatures 1.53°C above average.

Rainfall variability

Rainfall variability refers to changes in rainfall frequency, amounts and spatial distribution over time. The rainfall variability is higher in inland areas of Australia, where rainfall is irregular, with heavy rainfall in some years and little rain in others. Many coastal areas experience lower rainfall variability, with more consistent rainfall.

Learning ladder G2.4

Water case studies

1. Source 3: List three places in Australia which had low rainfall in 2018–19.
2. Explain what is meant by physical and economic water scarcity in Australia.
3. Compare the climate of Australia and a country outlined in G2.3. How is climate interconnected with water scarcity?
4. How might agriculture lead to water scarcity in Australia?

Making conclusions

1. Why has Australia been recording drier than average years in recent history?
2. Source 2: Farmers in Australia are often impacted by drought. Is this as a result of physical or economic water scarcity?
3. Write a summary using examples or data for the following statement: 'Rainfall variability and climate change will increase physical water scarcity in Australia.'
4. How reliable are poems, songs and other forms of art in describing the conflict that exists between water scarcity and use of the landscape?

Make it spicy

How would Australia's environment *change* if rainfall was to dramatically increase in the future?

Change, page 228; interconnection, page 227; making conclusions, page 443

HOW TO

How does access to water in Australia vary?

Many factors influence water availability in a place, such as the amount of precipitation received or the overuse of water by farms, businesses and communities. Access to fresh water in Australia varies depending on the region.

Data on the amount of rainfall a location receives helps us understand how much water is accessible for that area across the year. Areas that have high rainfall tend to have a surplus of water, and authorities use that data to plan for infrastructure that prevents flooding and supports high water storage. Places with low rainfall tend to have a water **deficit**, where the demand for water exceeds supply. Authorities in these areas often spend more money on transporting water, or they rely on lower-quality recycled or desalinated water.

Central and western regions

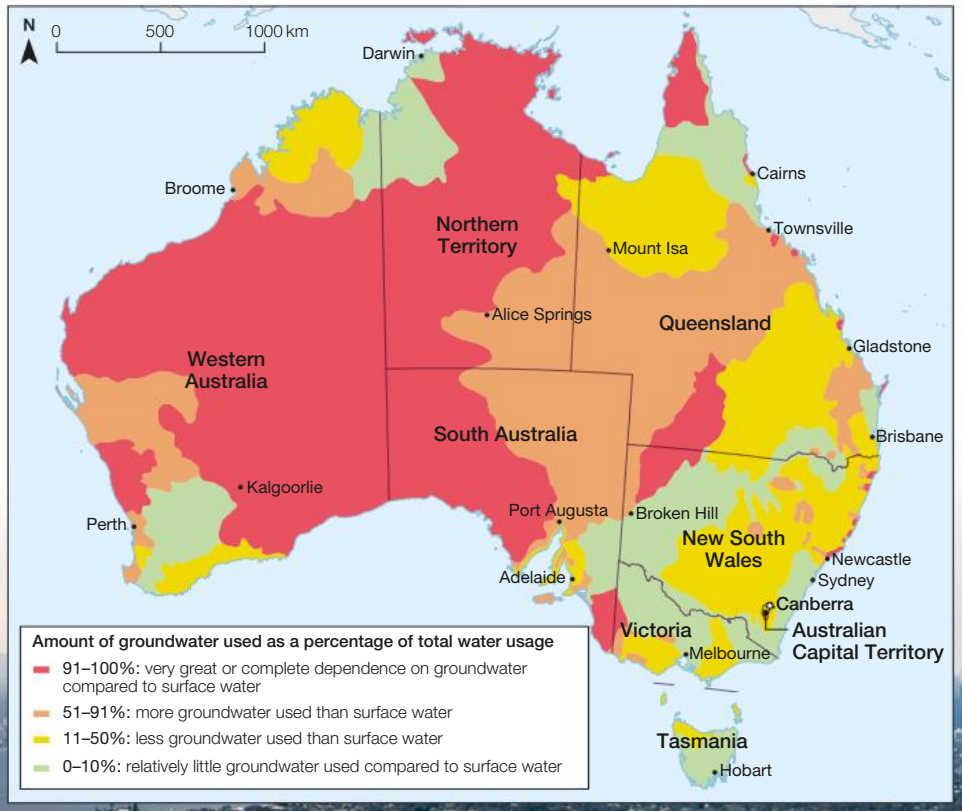
These areas of Australia are much drier, with average annual rainfall often below 350 millimetres compared to more than 1000 millimetres in the east. Groundwater is a key water source here, supplying up to 30 per cent of Australia's total water used. However, groundwater levels rely on river flows and rain to replenish them, so overuse has led to issues like declining water tables and salinisation.

Eastern and south-eastern regions

Cities including Sydney and Brisbane have relatively good access to fresh water because they receive more consistent rainfall than other areas of Australia. Major river systems, such as the Murray–Darling Basin, provide a significant water supply for both urban and agricultural use. However, even in these regions, water availability can be affected by seasonal droughts and climate change.

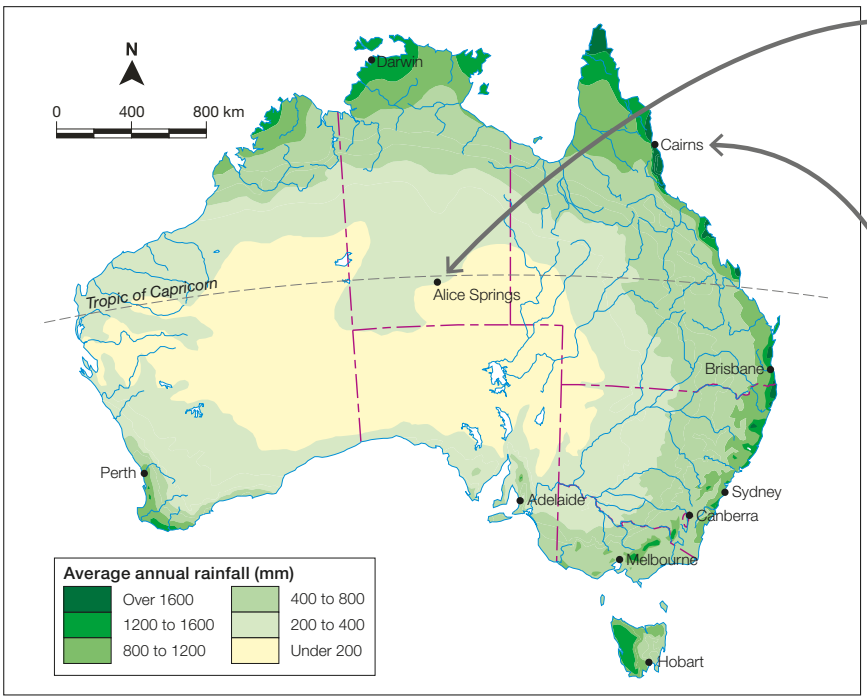
Source 1: Groundwater supplies around 30 per cent of Australia's fresh water, supporting agriculture in arid regions.

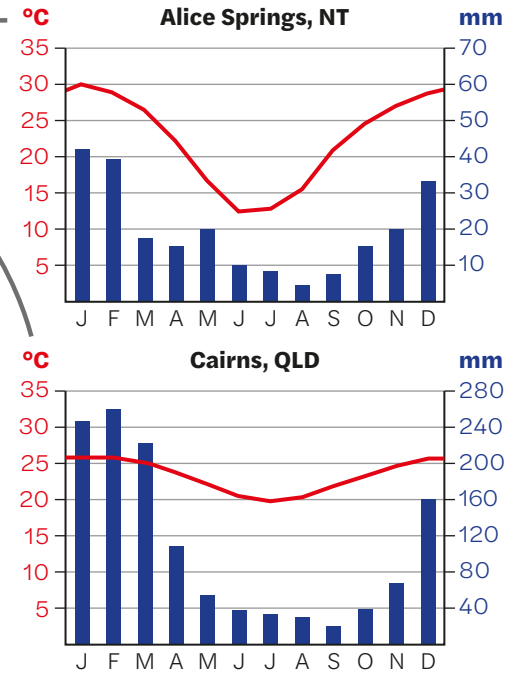
Water resources around Australia



Source: Matilda Education Australia

Australia average rainfall (millimetres) Source: Matilda Education Australia





Source 2: Average precipitation each year across Australia. Climate graphs display the average rainfall and temperatures in a place across a year. The line graphs reflect temperature, and the bar graphs reflect rainfall. Alice Springs has an average temperature of 30°C in January and an average precipitation of 42 millimetres. This access to rainfall is vastly different from Cairns, which has a much higher average of 245 millimetres of rainfall in January.

Rural and remote areas

Remote and First Nations communities in Australia face major water challenges, with limited access to safe and reliable water. It has been reported that 400 remote communities struggle with access to clean water because of outdated infrastructure, water contamination and high treatment costs.

Source 3: Urban areas such as Melbourne benefit from better infrastructure and more reliable freshwater supplies.

Learning ladder G2.5

Water distribution

1. How do major river systems like the Murray–Darling Basin contribute to water supply in Australia?
2. How does the distribution of water resources in major cities like Sydney and Brisbane compare to central and western regions?
3. Explain why remote Australian regions face higher levels of water scarcity than coastal cities.
4. Describe the impact of water scarcity on First Nations communities in remote regions.

Interpreting information

1. Source 1: Which regions in Australia are most reliant on groundwater?
2. Source 2: Describe the climate in Alice Springs, NT.
3. Source 2: Explain how natural factors are interconnected with water scarcity in Alice Springs.
4. Predict how a rise in city populations may change water demand over time.

Make it spicy

Describe the location of three remote *places* in Australia.

HOW TO

Interpreting information, page 428; place, page 226; PQE, page 438; SHEEPT, page 440

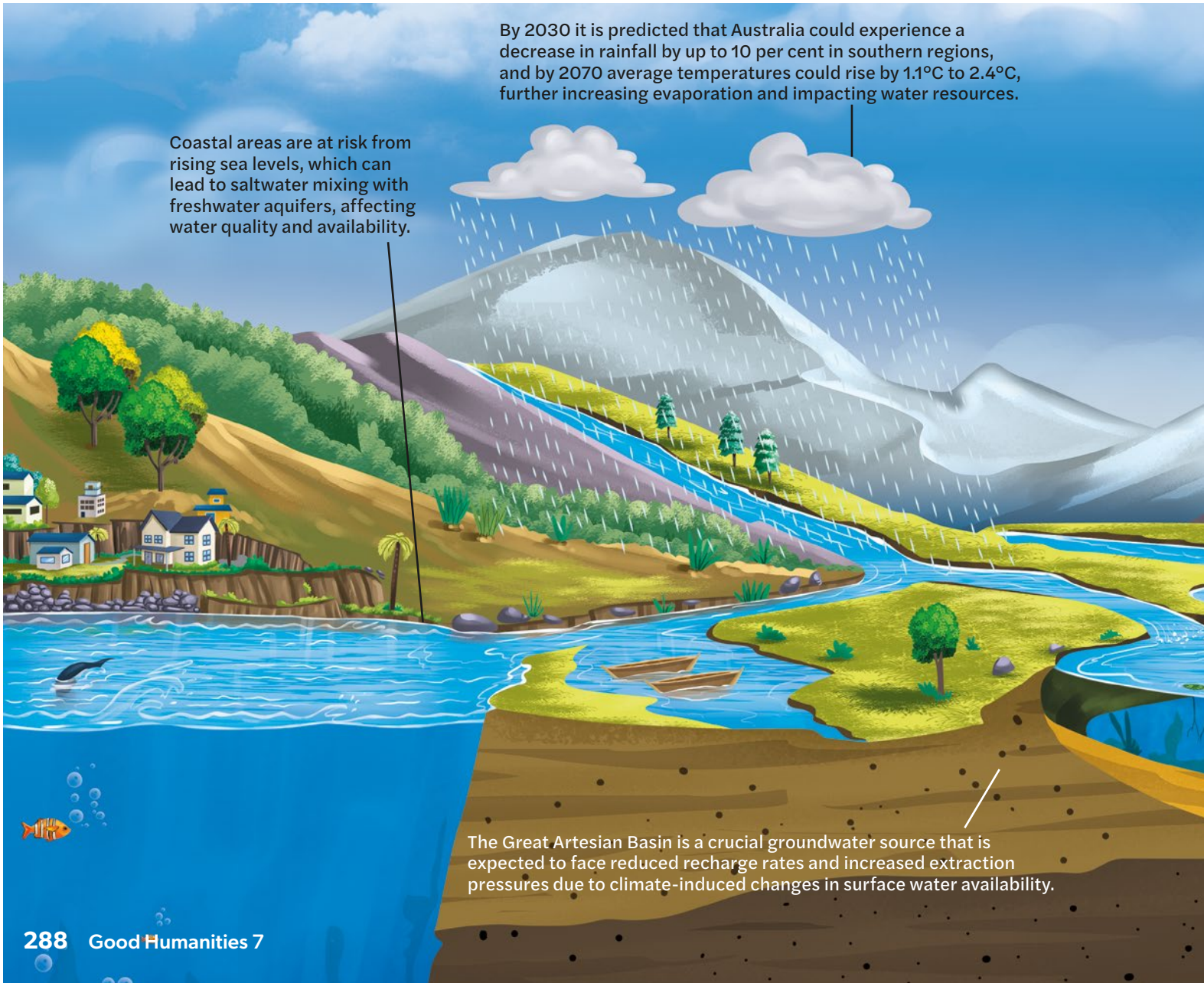
How is climate change linked with water scarcity?

Climate change refers to long-term alterations in temperature, precipitation and weather patterns due to increased greenhouse gases like carbon dioxide in the atmosphere. Climate change intensifies water scarcity and variability in Australia by altering natural weather patterns and events.

Changes in precipitation

Climate change is altering precipitation patterns across Australia. Forecasts indicate a shift in rainfall, with some northern regions experiencing more intense and frequent storms, while others such as southern Australia are expected to see a decline in winter rainfall, impacting water availability in crucial river basins like the Murray–Darling Basin.

Source 1: Climate change is already affecting many parts of the water cycle and water supply.



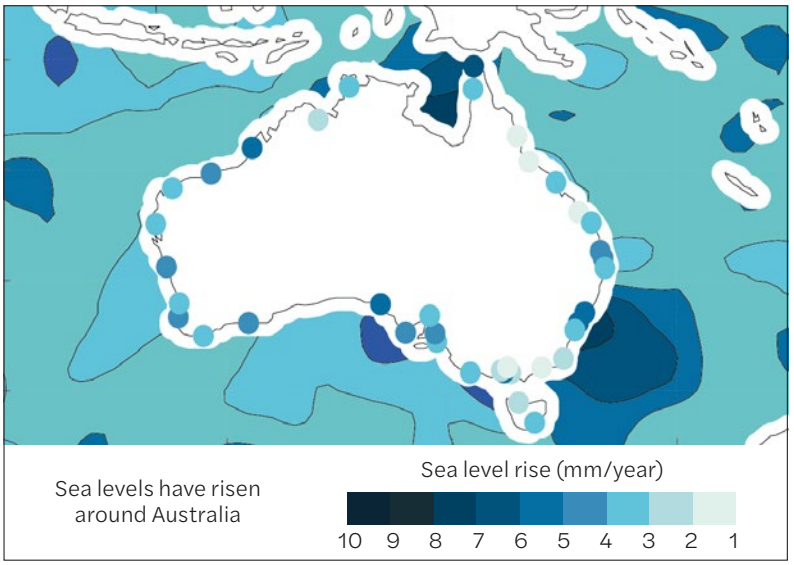
Increased evaporation

As temperatures rise, so do evaporation rates, which reduces water levels in rivers, lakes and reservoirs. In Australia, average temperatures have already increased by approximately 1.5°C since 1910, resulting in increased water stress, especially for regional and remote regions.

More extreme weather events

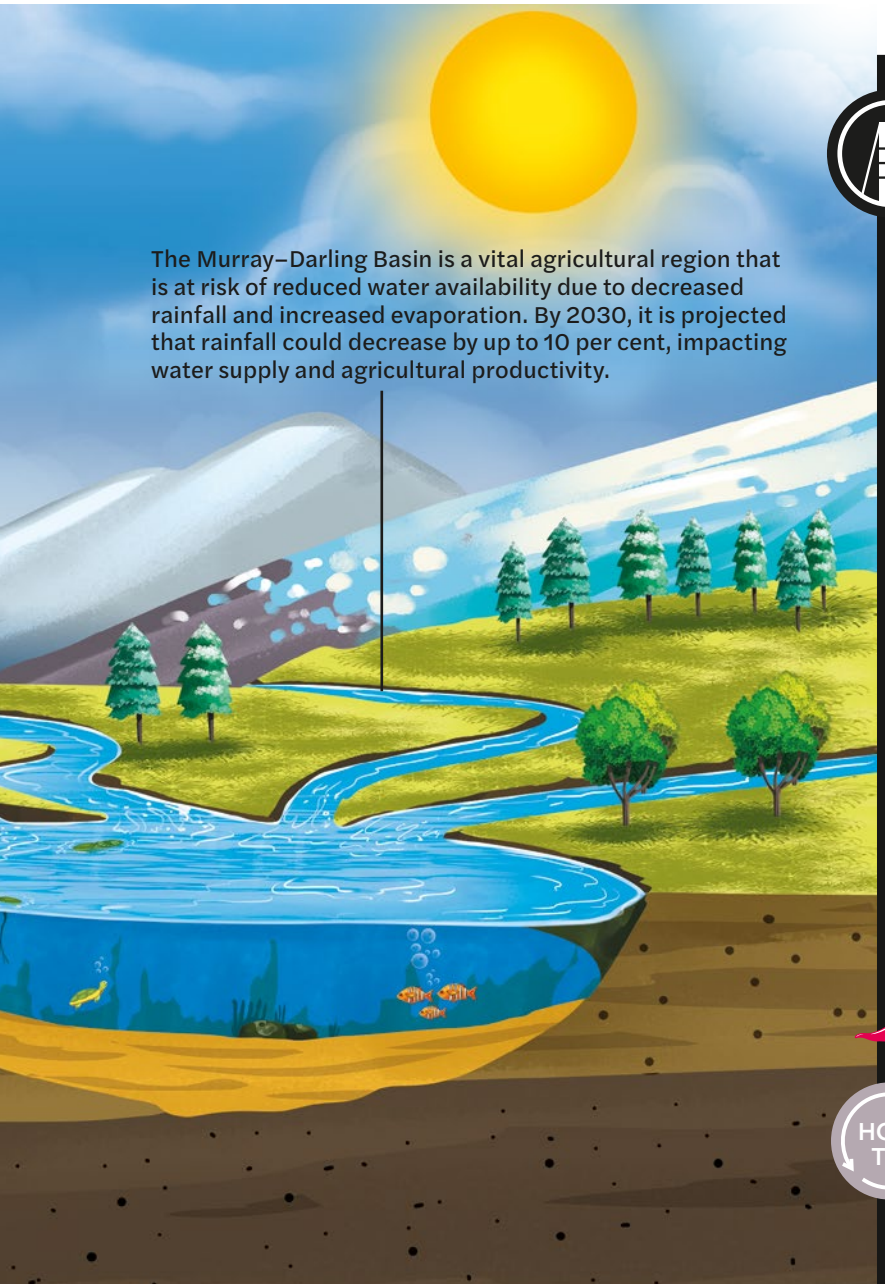
Climate change is likely to increase the frequency and severity of extreme weather events, such as droughts and floods. Between 2017 and 2020, New South Wales experienced a record-breaking drought that was the hottest and driest on record in over 120 years. This drought resulted in water shortages across the state and had significant social, economic and environmental impacts.

Australia measured rates of sea level rise 1993–2020



Source: Bureau of Meteorology and CSIRO

▲ **Source 2:** Rising sea levels are a result of factors such as increasing ocean temperatures, which impact freshwater supplies by contaminating our freshwater stores with salt. It will alter our ability to use and live near coastlines.



The Murray–Darling Basin is a vital agricultural region that is at risk of reduced water availability due to decreased rainfall and increased evaporation. By 2030, it is projected that rainfall could decrease by up to 10 per cent, impacting water supply and agricultural productivity.

Learning ladder G2.6

Water scarcity

1. Identify two different types of precipitation.
2. Describe how drought is interconnected to water stress.
3. How might climate change impact water management in the future.
4. What are some ways we can improve water management in the future?

Presenting ideas

1. What is climate change?
2. Explain why understanding evaporation rates is important when researching water scarcity.
3. Source 2: Explain how rising sea levels may have an impact on freshwater availability in coastal regions of Australia.
4. Explain how climate change is interconnected with both water scarcity in some regions and the increase of flooding events in others.

Make it spicy

How will rising sea levels *change* Australia's environment?

HOW TO Change, page 228; presenting ideas, page 449

G2.7

How do climate patterns affect Australia's rainfall?

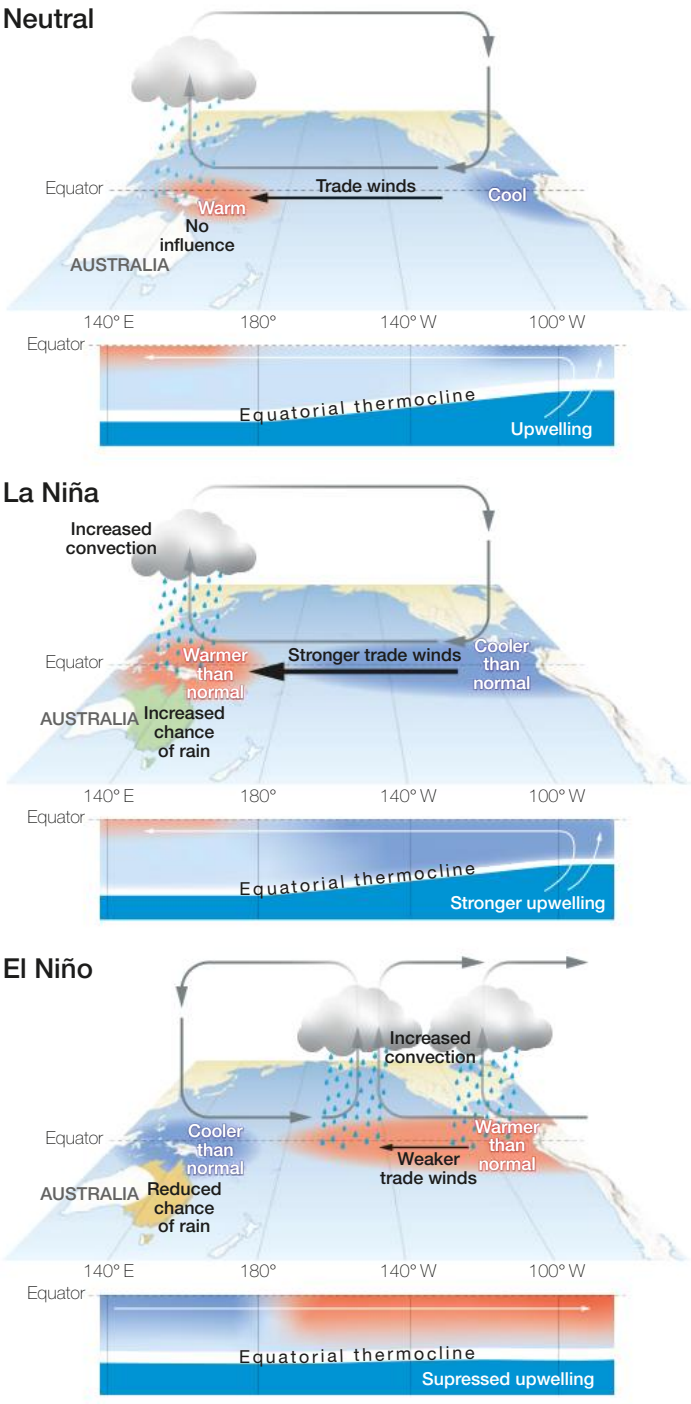
The atmosphere is full of circulations that transport air and energy around the world and influence global weather patterns.

Walker Circulation

The Walker Circulation occurs between South America and Australia in the Pacific Ocean. It is caused when air rises above the warm waters near northern Australia and over the Pacific Ocean, to descend near South America, before being pushed back across the Pacific Ocean as large trade winds, shown as 'neutral' in Source 1. This circulation results in rainy low-pressure systems above Australia and South-East Asia, and dry high-pressure systems near South America. The Walker Circulation cycles between periods of La Niña and El Niño, known as the El Niño-Southern Oscillation (ENSO). El Niño and La Niña events typically last nine to 12 months, but can sometimes last for years. Both have global impacts on weather, wildfires and ecosystems, and can affect communities and economies.

La Niña

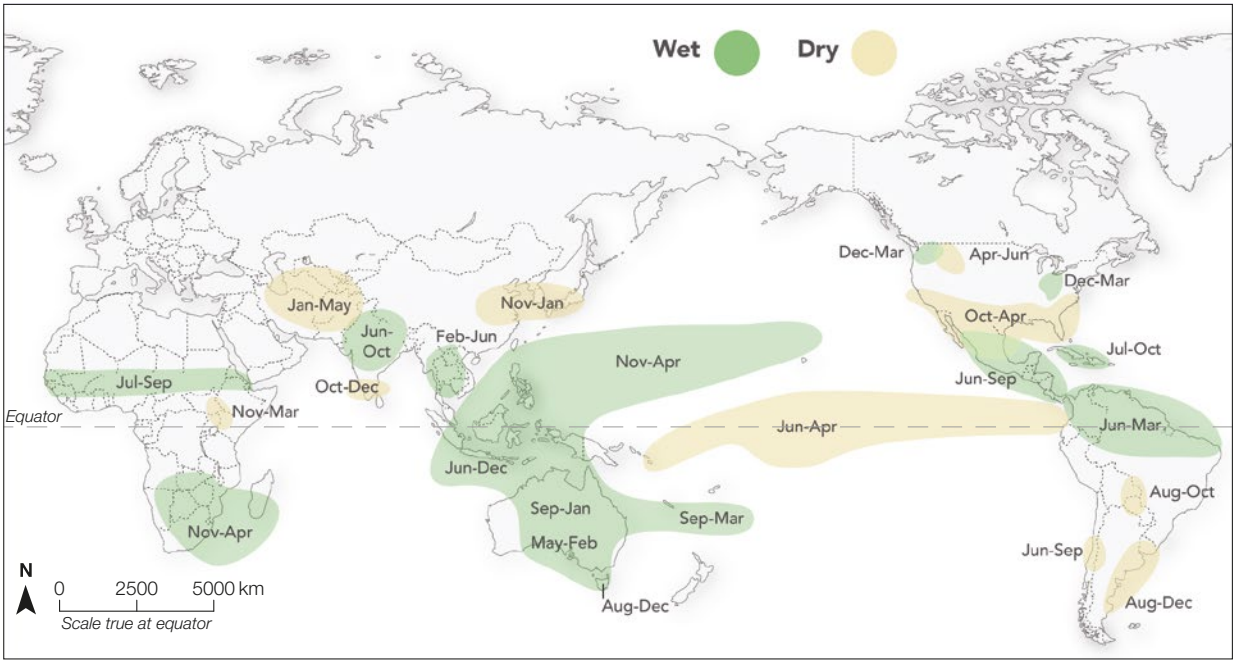
When western Pacific Ocean surface temperatures are warmer than usual, it results in a more intense Walker Circulation called La Niña. The warmer water causes more air to rise faster above the western Pacific Ocean, resulting in increased trade winds from South America as the air attempts to 'fill' the new gaps in the atmosphere. Trade winds move ocean currents with them, increasing upwelling around South America as deep cold ocean water rises to the surface to replace the moving water. This intensified Walker Circulation leads to heavier rainfall across the north and east of Australia, and increased frequency and intensity of floods and tropical cyclones. The severe floods of 1955, 1988, 1998, 2010 and 2022 in Australia were all associated with La Niña. The increase in cloud cover also lowers the average maximum temperatures across Australia, and insulation caused by the clouds increases the minimum temperatures.



▲ **Source 1:** A diagram of the El Niño-Southern Oscillation (ENSO) when it is neutral or in an El Niño or a La Niña event.

La Niña and rainfall

La Niña conditions in the tropical Pacific are known to shift rainfall patterns in many different parts of the world. The regions and seasons shown on the map below indicate typical but not guaranteed impacts of La Niña. For further information, consult the probabilistic information that the map is based on.



Source: International Research Institute for Climate and Society/Earth Institute/Columbia University

iridl.ldeo.columbia.edu/expert/home/.lenssen/.ensoTeleconnections/

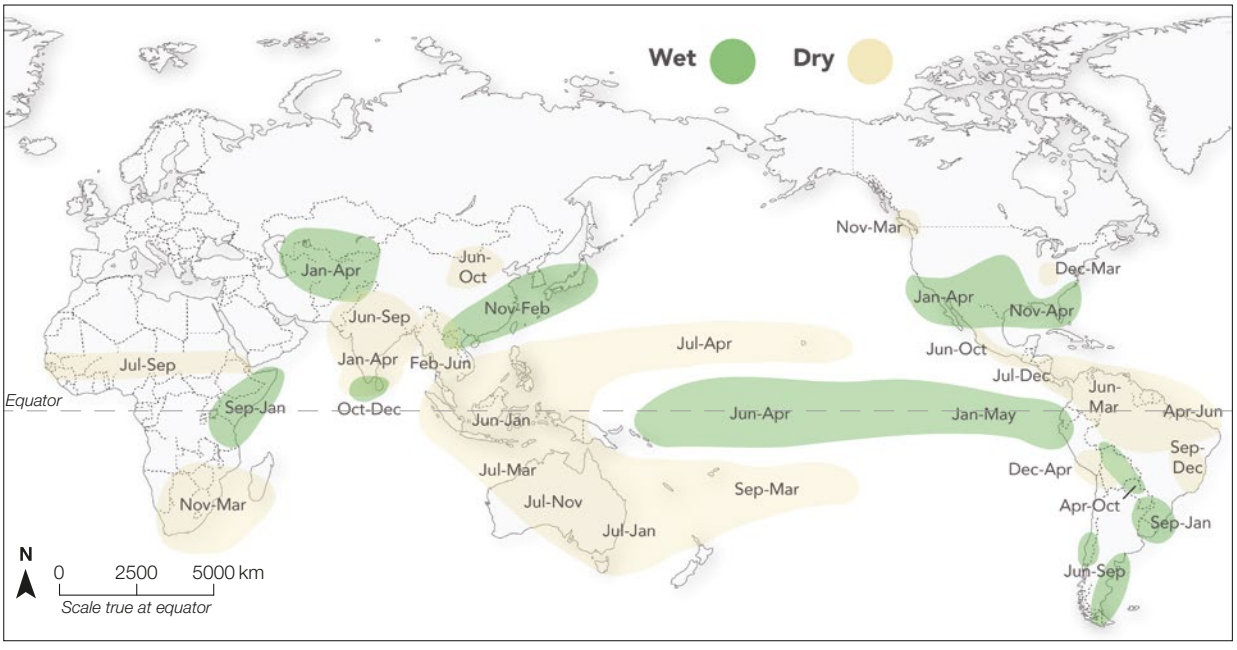
For more information on El Niño and La Niña: iri.columbia.edu/enso

Sources:

1. Lenssen, Goddard and Mason, 2020. Seasonal Forecast Skill of ENSO Teleconnection Maps. Weather Forecasting, 2387–2406.
2. Mason and Goddard, 2001. Probabilistic precipitation anomalies associated with ENSO. Bull. Am. Meteorol. Soc. 82, 619–638.

El Niño and rainfall

El Niño conditions in the tropical Pacific are known to shift rainfall patterns in many different parts of the world. The regions and seasons shown on the map below indicate typical but not guaranteed impacts of El Niño. For further information, consult the probabilistic information that the map is based on.



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2. Mason and Goddard, 2001. Probabilistic precipitation anomalies associated with ENSO. Bull. Am. Meteorol. Soc. 82, 619–638.

Source 2: Maps displaying the impact La Niña (top) and El Niño (bottom) have on global rainfall patterns

El Niño

When the surface temperatures in the central and eastern Pacific Ocean become substantially warmer than average, it can weaken or reverse the Walker Circulation and result in El Niño. Air instead rises in the east near South America and descends in the west near Australia and South-East Asia, resulting in drier conditions across northern Australia. On average 30 per cent less rain falls in Australia throughout El Niño, and the drier and warmer conditions increase the risk of droughts and fire. The severe droughts of 1982, 1994, 2002, 2006 and 2015 and many severe summer fires are associated with El Niño events.

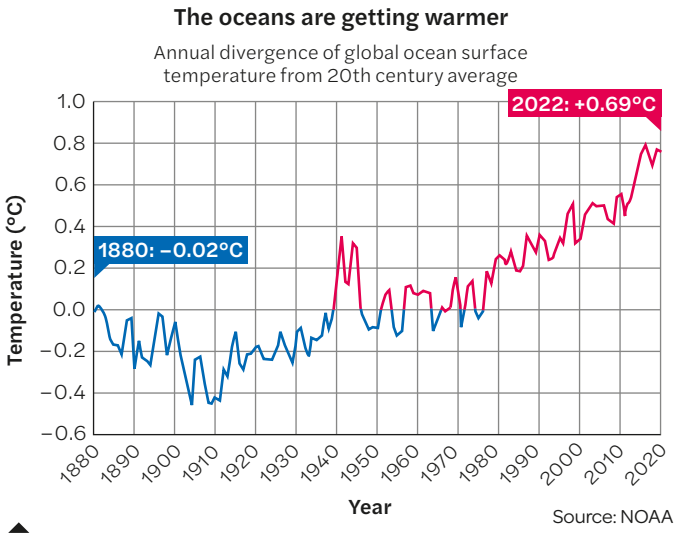
Source 3: Firefighters mopping up near Sussex Inlet, Sydney, on 31 December 2019. The dry conditions in El Niño events increase the frequency and intensity of bushfires.

Human impacts of ENSO

Human activities can affect the ENSO cycle. Climate change can influence the frequency, intensity and length of El Niño and La Niña events. Climate change can also lead to shifts in sea ice concentration, snow cover and permafrost. This can change the heat exchange between Earth and the atmosphere, influencing global and regional climate patterns that are connected to ENSO. Further, human changes to land use and water management can affect natural precipitation and temperature patterns, further affecting ENSO cycles or the impact of El Niño and La Niña events. Deforestation can lead to fewer trees to intercept rainfall, leading to more water running off into rivers and streams. This also increases the risk of flooding during La Niña events.

Source 4: A flooded residential area in Queensland during the 2011 floods. La Niña events and land use changes can increase the frequency and intensity of flood hazards.

In addition to influencing the strength and frequency of ENSO events, human activities are also changing their timing. This could mean changes in length of El Niño or La Niña phases and the indicators that **meteorologists** use to predict them. This complicates efforts to predict and prepare for ENSO effects. These changes in ENSO patterns can have significant economic implications, affecting agriculture, fisheries, tourism and water resources management. Communities dependent on these sectors may face increased vulnerability and economic instability due to the unpredictability and severity of ENSO-driven climate events.



Source 5: As global temperatures rise, our oceans are absorbing more heat, resulting in an increase in ocean surface temperatures. Changes in ocean temperatures can intensify, delay or extend the impact of El Niño and La Niña events.

Learning ladder G2.7

Water distribution

1. What is meant by 'air circulation' when discussing ENSO?
2. In El Niño conditions, describe Australia's rainfall patterns.
3. In La Niña conditions, explain why Australia's east coast can expect heavier rainfalls.
4. Explain the impacts of ENSO in different world regions.

Planning and collecting

1. Sources 3, 4 and 5: How are all these events interconnected?
2. What data may indicate to climate authorities like the Bureau of Meteorology that Australia is facing La Niña conditions?
3. Research if Australia is currently in a La Niña or El Niño year. Explain what that may mean for rainfall and water stress in northern and eastern regions this year.
4. Suggest what fieldwork methods would be useful to collect data on the following inquiry question: 'How do global climate patterns impact water availability in my local place?'

Make it spicy

How are the processes ENSO and climate change *interconnected*?

HOW TO
Interconnection, page 227; planning and collecting, page 410; PQE, page 438; SHEEPT, page 440

How do we manage water?

Water resources need to be carefully managed to make sure there are reliable supplies of safe water and a healthy environment. There is great competition for water use from farms, factories and cities.

Maintaining water balance

Water balance describes the flow of water in and out of a system. Managing our water supply requires having an understanding of all of the water that comes in and out of that system (Source 2).

Inputs refer to water coming *into* the system. This includes rainfall, run-off into rivers and lakes, and water flowing into underground reserves, as well as additional water piped in from outside the system.

Outputs refer to water going *out* from a system. This includes evaporation from land and bodies of water, **transpiration** from plants, and our use surface water and groundwater.

Governments and water authorities estimate the size of future water resources in a region. To do this, they have to calculate all of the inputs and all of the outputs.

Reliable water supply

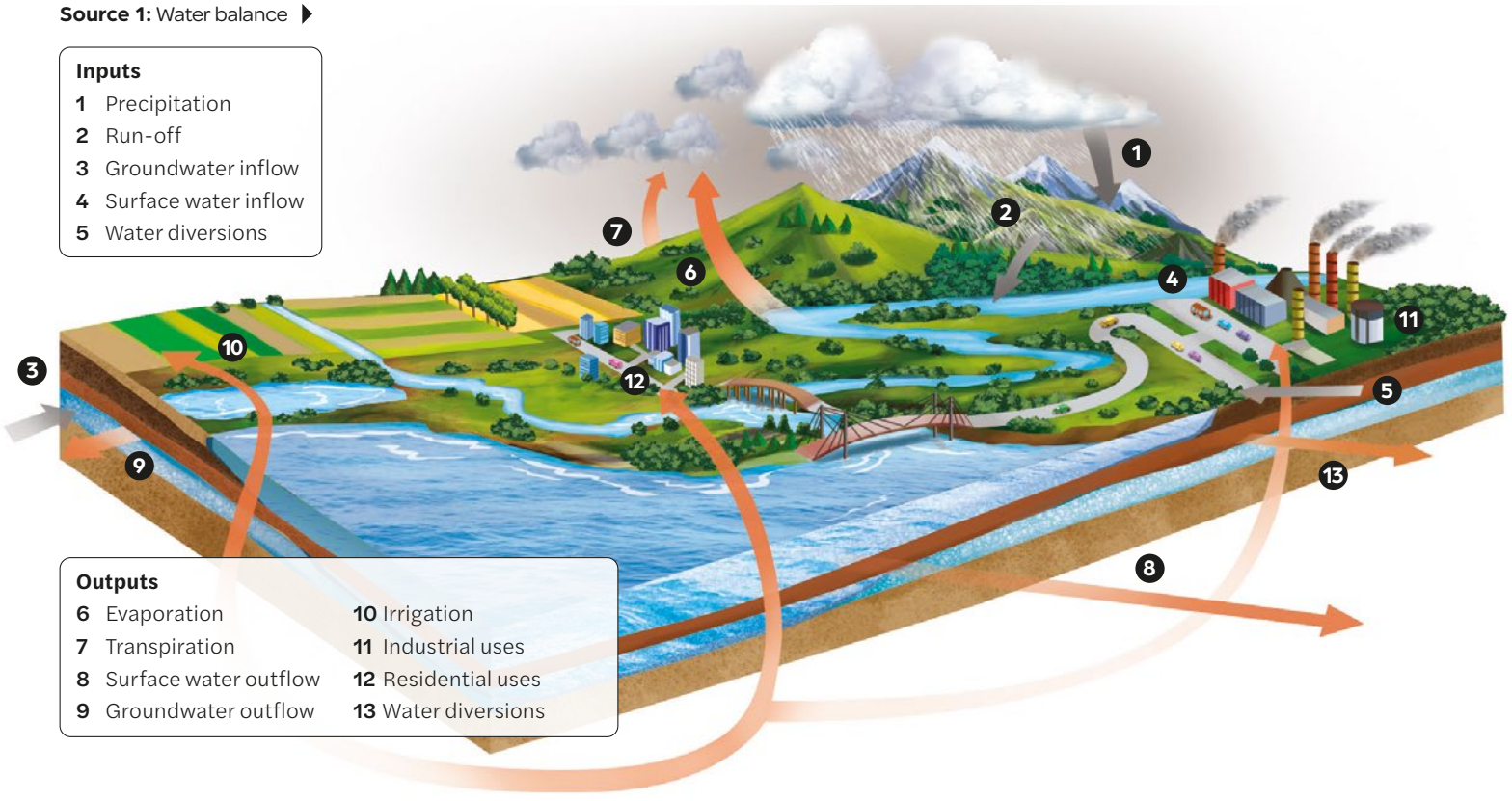
Managing our precious fresh water supply is not easy, because:

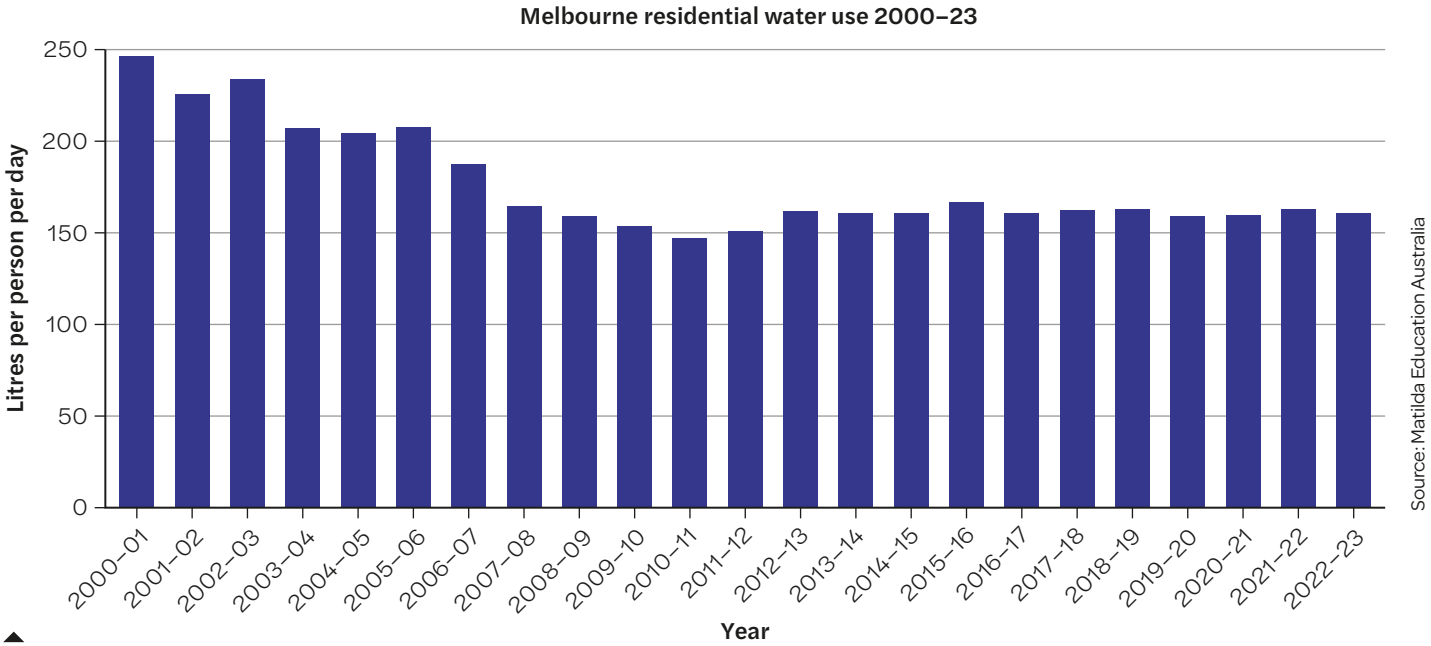
- it is an essential resource for all
- water availability changes depending on rainfall, usage and evaporation
- water resources are shared among many competing users.

Water storages, called dams or reservoirs, provide a reliable water supply for irrigation, hydroelectricity and urban use. Water authorities monitor storage levels to make sure that there is enough water available.

Melbourne's water supply system is made up of water supply reservoirs and a desalination plant. When the water supply drops below 60 per cent, the government will order water from the desalination plant and bring in water restrictions to reduce how much water people use – the outputs – from the water storages.

Source 1: Water balance ▶





Source 2: Melbourne's residential water use per person per day, 2000–23

Competition for Murray–Darling River water

Our largest river system, the Murray–Darling, does not carry much water compared to other rivers in the world. The **drainage basin** that supplies water to the Murray–Darling system receives about 530 000 gigalitres of water as rainfall – but then loses 94 per cent of this to evaporation and transpiration. Because Australia's climate varies so much, the actual amount of water in the river system can vary from less than 7000 gigalitres (in 2006) to almost 118 000 gigalitres (in 1956).

To ensure a regular supply of water from the Murray–Darling system, a series of water storages have been built: four major dams, 16 storage **weirs** and 15 navigable locks. The amount of water released from these dams depends on the amount of water entering the Murray–Darling system.

There are many competing uses for water from the Murray–Darling River system, including irrigation, recreation, navigation, hydroelectricity and water storage, along with water for cities, industry and maintaining the natural environment. Competition also exists between upstream and downstream users of water from the Murray–Darling River system and users in different states.

The Murray River spans three states: Victoria, New South Wales and South Australia. As a downstream user of the Murray River, South Australia is always affected by how the water is used upstream. To ensure fairness in management, the river system is controlled by the independent Murray–Darling Basin Authority.

Learning ladder G2.8

Water distribution

1. Define 'water balance'.
2. How is fresh water stored and transported around Melbourne?
3. How is water balance interconnected to the water cycle?
4. Explain the impact of water use on the Murray–Darling Basin.

Strategies for action

1. What strategies are used in the Murray–Darling Basin to maintain an adequate water supply?
2. Explain how governments calculate water balance.
3. Explain how competing uses of water in the Murray–Darling Basin affect upstream and downstream water management.
4. Refer to G1.12. Design a new strategy or alter an existing one to manage the water in the Murray–Darling Basin that takes into account the various competing needs of the community and environment.

Make it spicy

Analyse the challenge of managing water within a *space* when there is a range of competing uses and priorities.

HOW TO

Space, page 224; strategies, page 446

G2.9

Case study

Who built the world's largest water pipeline?

Libya is a highly water-stressed country in North Africa that built a pipeline nearly 3000 kilometres long to supply water from aquifers to its growing cities.

Great Man-Made River

The Great Man-Made River is a network of pipes stretching 2820 kilometres across Libya that make up the world's largest irrigation project. Fresh water travels up to 1600 kilometres from the Nubian Sandstone Aquifer System to supply Libya's main cities on the Mediterranean coast. It is the largest **fossil aquifer** in the world, covering an estimated 2.6 million square kilometres and providing 70 per cent of all fresh water used in Libya. Fossil aquifers are large underground reserves of water that formed more than 10 000 years ago, when surface conditions were very different from today.

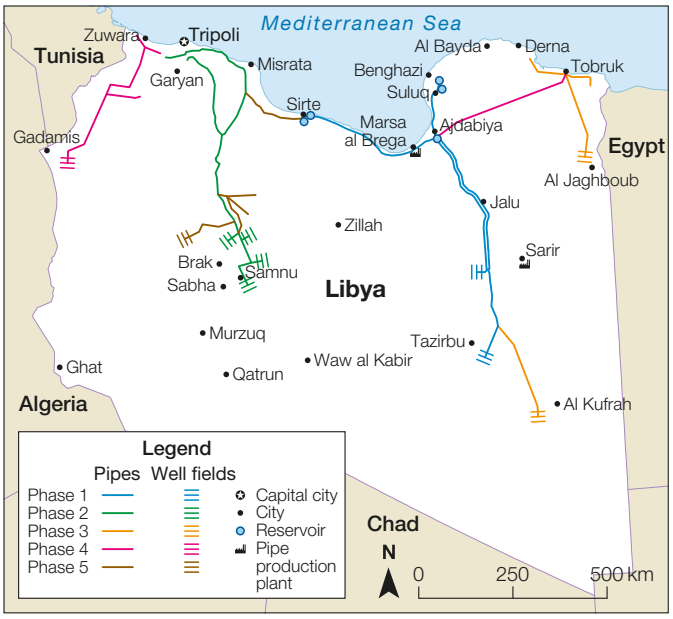
The Great Man-Made River supplies water from more than 1300 wells, most of which are drilled more than half a kilometre into the ground. The irrigation system supplies 6.5 million cubic metres of fresh water every day to the large cities of Tripoli, Benghazi and Sirte on the northern coast and other settlements on its path.

Why did they build it?

Libya suffers greatly from water scarcity and is one of the most water-stressed countries on Earth. Water stress occurs when the demand for water exceeds the available supply. The key drivers of water scarcity in Libya are:

- Ninety per cent of its land is desert with an average annual rainfall of just 56 millimetres, leading to almost complete reliance on desalinated water and non-renewable aquifers.
- Withdrawal rates are extremely high, driven by population growth and increasing water demands, particularly from agriculture, which accounts for 83 per cent of freshwater use.
- Groundwater supply is depleted due to over-extraction, inefficient use of irrigation water and contamination.

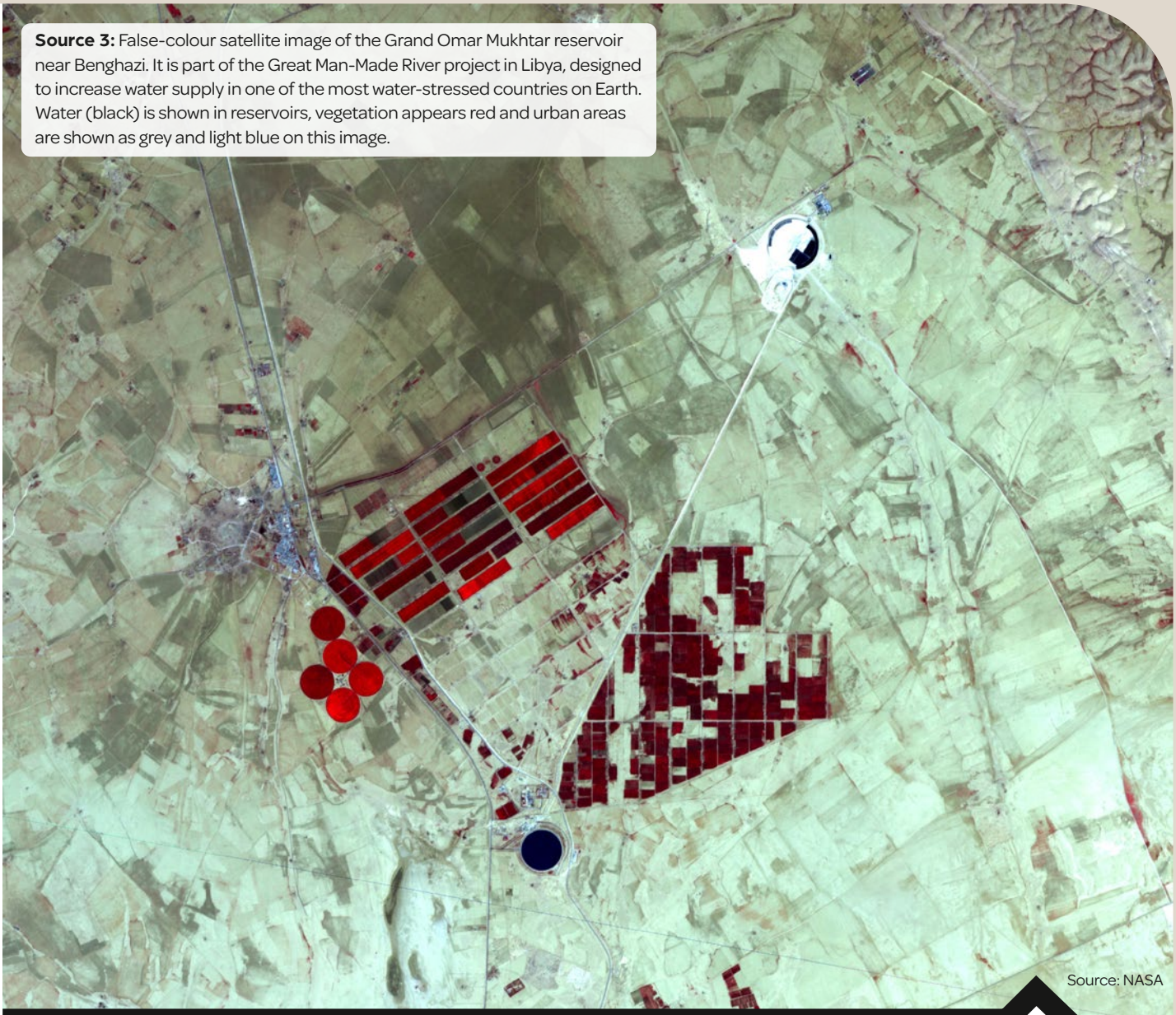
The Great Man-Made River project in Libya



Source: Matilda Education Australia

▲ **Source 1:** Map of the Great Man-Made River project in Libya in North Africa. The 2820 kilometres of pipes constitute the world's largest irrigation project.

▲ **Source 2:** Enormous pipes are transported across the Libyan desert to pipe water from the Nubian Sandstone Aquifer System to help overcome the severe water scarcity of this North African nation.



Source 3: False-colour satellite image of the Grand Omar Mukhtar reservoir near Benghazi. It is part of the Great Man-Made River project in Libya, designed to increase water supply in one of the most water-stressed countries on Earth. Water (black) is shown in reservoirs, vegetation appears red and urban areas are shown as grey and light blue on this image.

Source: NASA

Learning ladder G2.9

Water case studies

1. Describe the relative location of Libya.
2. Source 3: Explain the characteristics of Libya that make it vulnerable to water stress.
3. How does the Great Man-Made River compare to other strategies for managing water stress? Conduct some research to support your answer.
4. Create a diagram illustrating the competing uses of water in Libya and annotate the diagram explaining how these uses impact management of water resources.

Strategies for action

1. Why is the pipeline called the Great Man-Made River? What does this tell you about Libya's environment?
2. Describe how the Great Man-Made River aims to reduce water stress in Libya.
3. Predict how the pipeline may have impacts on water supply and availability in the future.
4. Design another strategy, other than pipelines, that would help Libya manage water stress.

Make it spicy

Describe the place where Libya's Great Man-Made River starts.

Place, page 226; strategies, page 446

HOW TO

G2.10

Case study

How can we make fresh water in Australia?

Australia's largest desalination plant is the Dalyston facility in Victoria. A desalination plant removes salt and impurities from seawater and turns it into fresh water.

Planning for the **desalination** plant started in 2007, when Melbourne's dam water storages fell below 30 per cent – their lowest level ever. The plant was built to supply Melbourne with water in times of drought. It was completed in 2012, but not used until 2017.

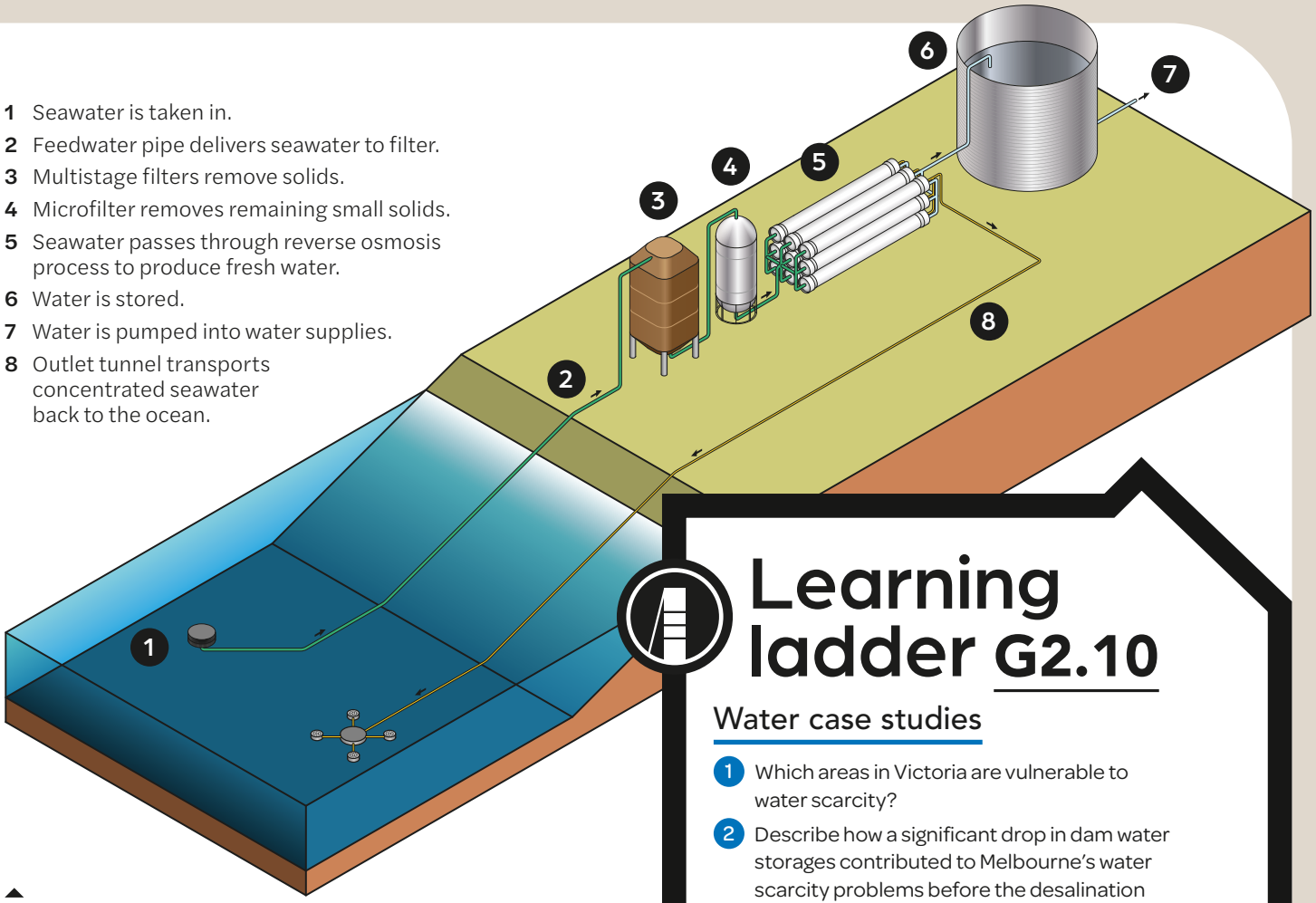
The desalination plant costs over $600 million per year to run and can produce up to 150 gigalitres (150 billion litres) of water each year. It is powered by 100 per cent renewable energy. The desalination plant has supplied 455 gigalitres of water since 2017.

The plant takes in seawater through a pipeline that is 1.2 kilometres long. Seawater passes through filters and then through two stages of a process called **reverse osmosis**, where it is pushed under high pressure through ultra-fine filters (called membranes). Fresh water passes through the membranes and leaves the salt and other impurities behind.

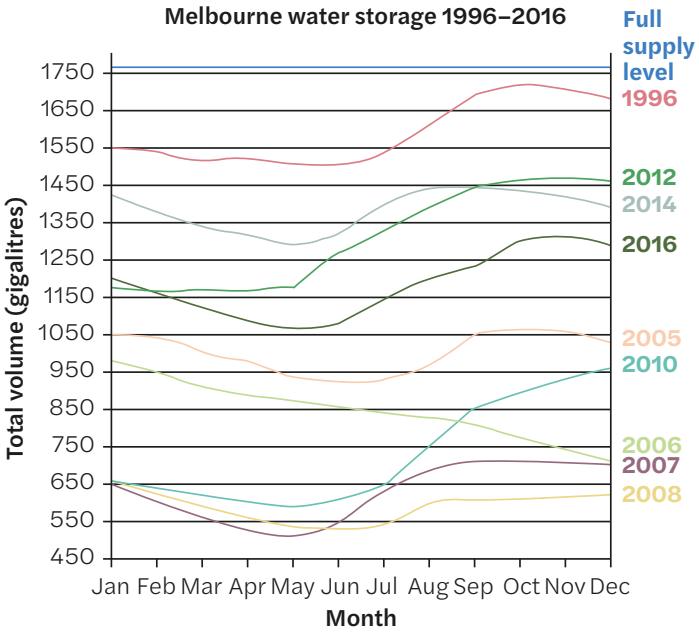
Drinking water is then pumped via an 84-kilometre pipeline from the Dalyston plant to Cardinia Reservoir, near Melbourne.

Source 1: Oblique aerial view of the Dalyston desalination plant. The long intake and outlet tunnels are buried beneath the ground and are not visible in this image.

1 Seawater is taken in.
2 Feedwater pipe delivers seawater to filter.
3 Multistage filters remove solids.
4 Microfilter removes remaining small solids.
5 Seawater passes through reverse osmosis process to produce fresh water.
6 Water is stored.
7 Water is pumped into water supplies.
8 Outlet tunnel transports concentrated seawater back to the ocean.



Source 2: How a reverse-osmosis water desalination plant works



Source 3: Total volume of water in Melbourne water storage, 1996–2016

Source: State Government of Victoria, Department of Environment, Land, Water and Planning, 2017

Learning ladder G2.10

Water case studies

1. Which areas in Victoria are vulnerable to water scarcity?
2. Describe how a significant drop in dam water storages contributed to Melbourne's water scarcity problems before the desalination plant was operational.
3. Compare the water scarcity issues faced by Melbourne before the desalination plant was built with the situation in other Australian cities that do not have similar facilities.
4. What challenges could arise in balancing the desalinated water needs of urban areas like Melbourne with the requirements of agricultural and industrial uses?

Presenting ideas

1. Describe the process of desalination. Use terms like 'reverse osmosis', 'seawater intake' and 'freshwater production'.
2. The Dalyston desalination plant is powered by 100 per cent renewable energy. How does this information contribute to understanding the plant's environmental impact?
3. How does the data on the Dalyston desalination plant's capacity (150 gigalitres per year) support the explanation of its role in alleviating Melbourne's water scarcity?
4. Explain the interconnection between the location of the world's desalination plants and climate.

Make it spicy

Describe the *place* the desalination plant was built. Why was it built in that environment?

HOW TO
Place, page 226; presenting ideas, page 449

G2.11

First Nations Peoples

How do First Nations Peoples care for water Country?

First Nations Peoples have long understood the importance of water. Water has always been considered a precious resource and one that is crucial for life to survive and thrive.

Source 1: This is an example from Erub (Darnley) island, Torres Strait, of intertidal fish traps that were once common across Australia's coastline. The effects of colonisation have caused significant damage to many of these traps. The trap was designed with the contours of the coastline and allowed for sustainable fishing for millennia.

Stories of water

There are many First Nations Dreaming stories focused on the importance of water and why it should be managed as part of caring for Country. One of the more well-known stories is about Tiddalik the frog, who drank all the water in the landscape. This Dreaming story highlights, among other aspects, the importance of managing water across Country to ensure that it is used sustainably and there is enough for everyone. For many First Nations communities, there has always been an understanding that water is life, and as such, it needs to be considered when caring for Country.

Freshwater and Saltwater

Broadly, First Nations Peoples' relationships with water can be split into two main groups: Saltwater people, from coastal regions of Australia, and Freshwater people, mostly from inland riverine systems. In these places much of the law and lore regarding water is unique to the local geography, meteorology, biodiversity and cultural contexts, but a consistent theme is caring for water and waterways for sustainability.

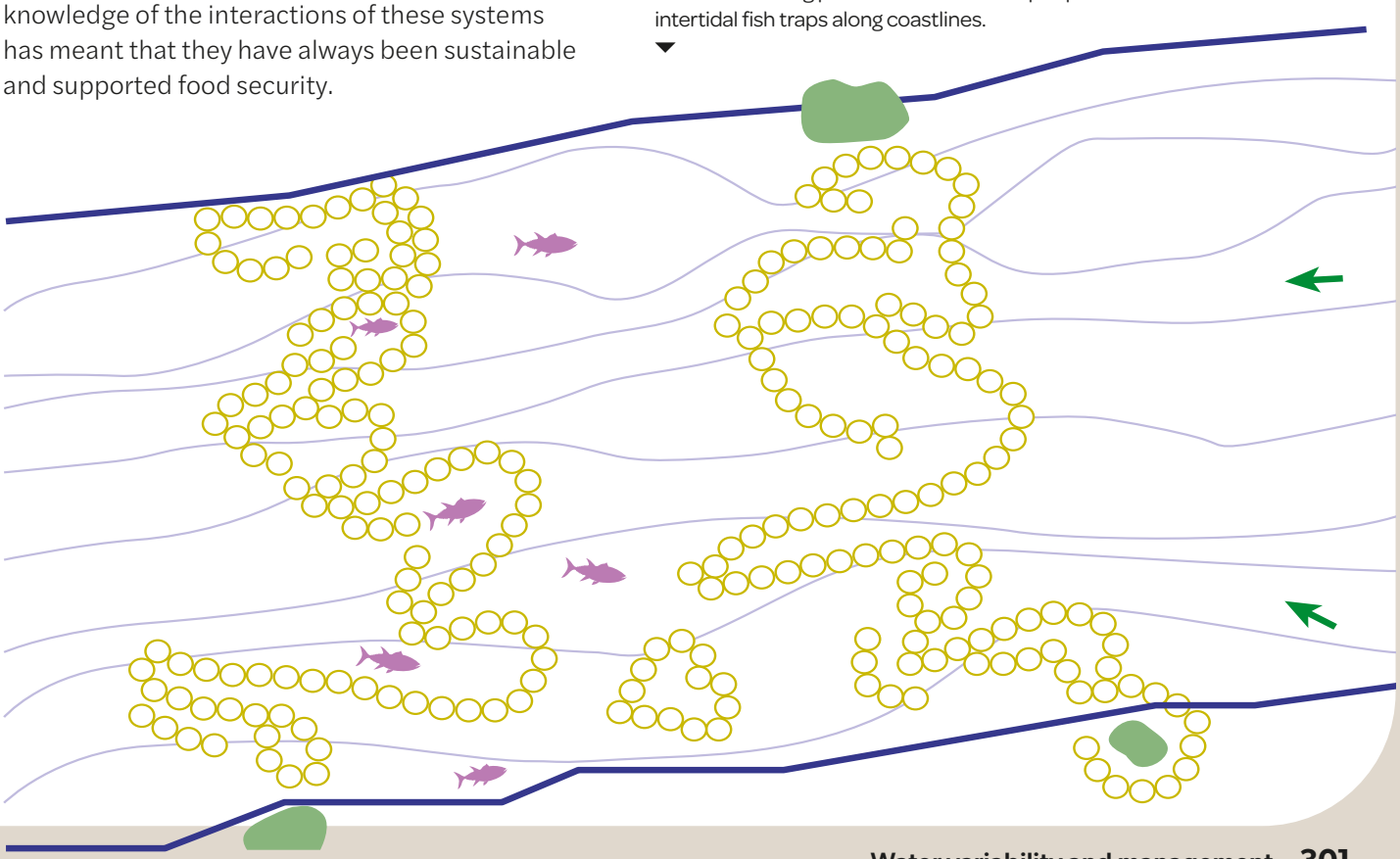
For all First Nations groups, caring for water is influenced by many factors such as geographical formations, weather patterns and seasons, reproductive cycles of plants, animals and fish, tidal cycles, and migration cycles. An intimate knowledge of the interactions of these systems has meant that they have always been sustainable and supported food security.

Aquaculture in Freshwater and Saltwater contexts

In a Freshwater context, fish traps are constructed in the river in partnership with the river bed and the water flow to allow freshwater fish to be gathered in semi-circular stone weirs. The fish are captured by these traps and can be held there for some time before they are caught and eaten. To maintain sustainability, the rocks can be removed to allow freshwater fish to migrate to spawning places.

In a Saltwater context, tidal movements and water flows are modified and incorporated into aquacultural farming practices. In one example, large rocks were moved into position adjacent to some naturally occurring rock pools off the coast of northern Lutruwita/Tasmania. This allowed the water to flow into the rock pools at high tide as well as providing channels for the fish to enter to eat the carefully cultivated food sources in the pools; when the tide lowered, the fish were unable to leave and were easily caught. Part of this process was also an understanding that Country and the fish had to be honoured by only taking what was needed. Any remaining fish were able to leave once the tide came in again. This practice was common across many places around the Australian continent and adjacent islands.

Source 2: Freshwater people built fish traps across rivers. These were stone walls created to guide fish swimming upstream into holding ponds. Once the fish was contained, Aboriginal people would catch them in their hands or spear them. Rocks could also be placed to block them in a holding pen for later. Saltwater people built intertidal fish traps along coastlines.



Managing water in the landscape

In addition to the fish traps themselves, another important way that freshwater systems were managed was through constructing rock and earth weirs from alternating points in the riverbanks. This would force the water into a slower flowing, zigzag motion. This meant it would remain in the river system for longer and a greater volume would be absorbed into the soil to support the plant, animal and bird life further from the river. The stone and earth weirs were usually reinforced by planting eucalyptus trees in close proximity. Their root systems would prevent the weirs from being washed away and would also provide valuable fishing tools and shade along the river banks. Many of these were destroyed to make way for the large paddle steamers that used the extensive Murray-Darling River system to support inland trade routes.

In addition to slowing the water in the landscape, First Nations Peoples have long understood that flooding has been an important part of the Australian seasonal weather cycle. As such, dwellings and buildings would be constructed in places where the floodwaters would be less likely to pool and rise. This meant that when the floods did eventually arrive, there would be a limited loss of property and life because few buildings were impacted.

By allowing the floodwaters to run their course, this also provided important opportunities to refresh inland and riverine areas, which otherwise wouldn't receive much rainfall, and would also support the healthy inland freshwater fish populations.

When things go wrong

Climate change is seriously affecting freshwater riverine systems globally. At the end of 2018 and the beginning of 2019, there was a mass fish-kill event across a 40-kilometre stretch of the Darling River. During this event it is estimated that more than 1 million fish died from a lack of oxygen in the water system. This event was caused by drought, a sudden drop in the temperature, bushfire runoff, algal blooms, and too much water being taken from the system for unsustainable farming practices and water-intensive crops.

Food and water resources of many riverine First Nations communities were impacted by this event. While many factors were outside of human control, the fish-kill was made more severe due to unsustainable water-usage practices and human-caused global heating.

Source 3: This is an image from the mass fish-kill event near Menindee, NSW. This was caused by low oxygen levels in the river water and was worsened by the mismanagement of the river system and global heating.

First Nations knowledge leading the way

There has been much debate focused on more sustainable water management practices in Australia, and one way forward is better integration of First Nations knowledge and leadership when making decisions on matters relating to water. An example of how effective this approach has been is the establishment of the Aboriginal Ranger Program in NSW.

This program has been successful in several important ways. It has provided opportunities for First Nations people to gain valuable experience and qualifications in land management, it has provided opportunities to strengthen cultural knowledge, and has begun to impact the landscape directly to **offset** the impacts of global heating and biodiversity loss caused by colonisation.

Source 4: This is an artwork by Gidabul Doobay, a First Nations artist. This painting depicts the Githabul Country with the river in the centre of the canvas. The river is sacred and an important part of life. Paintings and other images have been used for tens of thousands of years to teach about and connect with important and sacred parts of Country.

Source: © Gidabul Doobay, reproduced with permission

Learning ladder G2.11

Water scarcity

1. What are the two main distinctions made between coastal and non-arid inland First Nations Peoples?
2. What is one story that has been used to teach First Nations children about the importance of water?
3. Explain how stories are used to teach water management.
4. What are the challenges with managing water in contemporary Australia?

Interpreting information

1. Source 1: What are the renewable sources of food that can be caught from intertidal traps?
2. Source 1: How were the fish traps designed to ensure that surplus fish caught in them didn't die?
3. How do First Nations Peoples understand water, and what does this mean for future generations?
4. Explain how the water management practices in the Murray-Darling system differ between First Nations and non-Indigenous communities. How would these practices have impacted, for better or worse, the fish-kill event?

Make it spicy

How do First Nations peoples manage the *environment sustainably*?

Environment, page 230; interpeting information, page 428; sustainability, page 234

HOW TO

How can we save water at home?

Most Australians are lucky to have instant access to clean, safe water at home. Per person, Australia is one of the biggest users of water in the world – but we can all help save water in the home with a few simple changes.

Domestic water use

Most Australian homes have good access to a reliable supply of clean water. As the country's supply of fresh water is low and varies a lot, Australian governments have encouraged water conservation and introduced water restrictions during times of drought.

Domestic use of water only accounts for 12 per cent of Australia's total water use, but Australia has one of the highest rates of water consumption per person in the world. The average daily water use for Sydney in 2023 was 200 litres per person. Average water consumption ranges from 100 litres per person in some coastal areas to more than 800 litres per person in the **arid** inland areas.

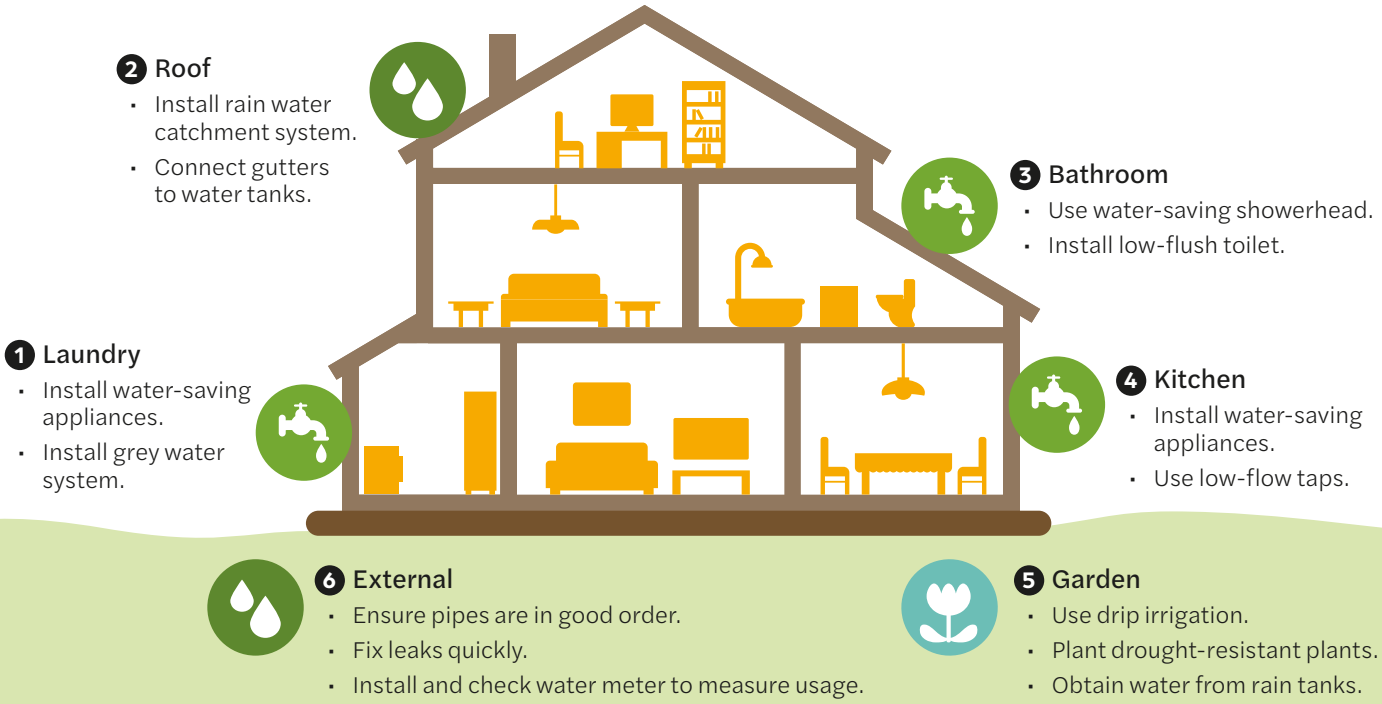
Most homes have a water meter at the front of the property. You can measure how much water your home uses in a day by recording the difference between meter readings, 24 hours apart. The red numbers show water use in litres.

Saving water in the home

More than 1.7 million Australian households have installed rainwater tanks – saving both water and money. Water collected in rainwater tanks is usually used for watering the garden and flushing toilets. It also provides an alternative supply of water during times of drought.

To improve water management in the home, we can capture water, **recycle** water or use less water. We can select water-saving appliances such as low-flush toilets and water-efficient showerheads to reduce the amount of water we use.

Source 1: Water-saving measures at home help to save our valuable water. Between water restrictions and changes in water use, the amount of water used by Australian households fell 12 per cent between 2003 and 2009 – despite a population increase of 7.7 per cent.

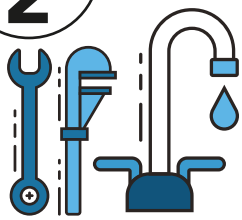


TOP TIPS FOR SAVING WATER

TIP 1

Install a dual-flush toilet and do not dispose of rubbish in toilets.

TIP 2



Check and repair all leaks.

TIP 3

Do not leave water running when brushing your teeth, shaving or washing dishes.

TIP 4

Install water-saving showerheads and limit showers to four minutes.

TIP 5

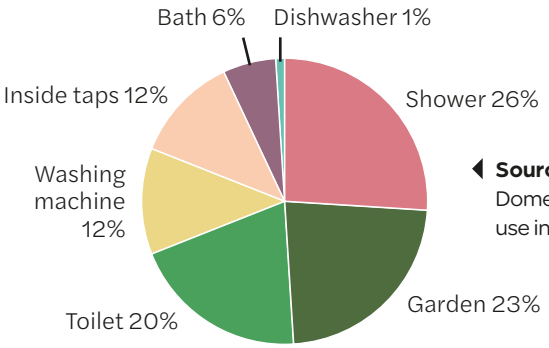
Use full loads in the dishwasher and washing machine. Use an eco setting where possible.

TIP 6

Other ways you can save water include watering the garden in the early morning and late evening, installing a rainwater tank, and using buckets of water for cleaning.

Source 2: Tips for saving water

Australia: Domestic water use



Source: Matilda Education Australia

Source 3: Domestic water use in Australia

Learning ladder G2.12

Water distribution

1. Source 1: List water-saving appliances that can reduce the amount of water you use.
2. Source 3: Examine the pie chart.
   - **a** Where is most domestic water used? List three ways we can reduce domestic water use.
   - **b** Which is the most water-hungry appliance inside the house? How can we reduce water use in this area?
3. Research how much water is used for recreational use, like filling your swimming pool or washing your car. How might these activities lead to water stress over time?
4. Create a photo essay that illustrates all the ways you use water in your home or school. Annotate each photo with a suggestion of how water could be better conserved in this area.

Making conclusions

1. Source 1: Which of the water-saving measures shown here do you use at your home?
2. Source 2: What impact might water conservation on a local scale have on water stress in Australia?
3. Sources 2 and 3: Which type of savings will make the greatest difference in home water usage and why?
4. How reliable is domestic water data in Australia? Why is reliability of data important to water managers and policymakers?

Make it spicy

Research how our water used has *changed* over time in Australia.

HOW TO

Change, page 228; making conclusions, page 443; photo essays, page 422

Case study

What happens when the water runs out?

Cape Town in South Africa nearly became the world's first major city to run out of water when drought brought the large city of 4.5 million people to its knees, with people queuing for water rations.

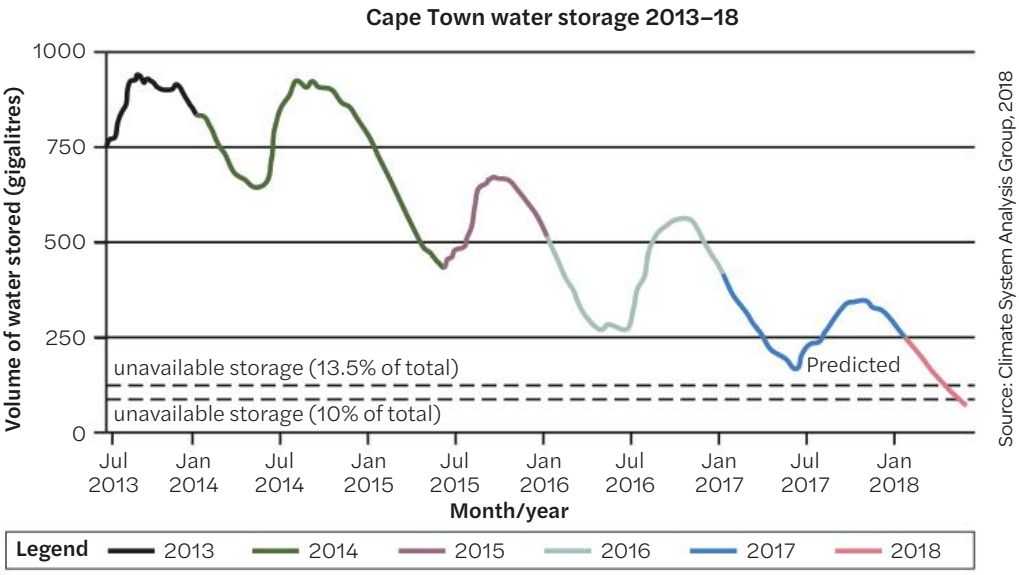
Water crisis

On 23 February 2018, Cape Town had just 100 days of water left. Day Zero for Cape Town was 4 June, when the city's taps would run dry, cutting off water to its 4.5 million residents. At the time, the city's largest water supply, the Theewaterskloof Dam, held just 12 per cent of its massive 480 000 million cubic metre capacity.

At the start of 2018, Cape Town residents faced Level 6B water restrictions, which meant a limit of just 50 litres of water per person, per day. Queues formed at natural springs around Cape Town as people filled up water containers to build up their emergency supplies. Shops sold out of bottled water.

If Day Zero arrived, all water to homes would have been shut off and diverted to 200 distribution centres, where people would have to collect their daily rations of 25 litres of water.

Thankfully, Day Zero never eventuated. In response to the crisis, the people of Cape Town became extremely water wise: households using too much water were fined, and limits on water use for agriculture were introduced. Finally, in June 2018, the region experienced average rainfall for the first time in four years. As of April 2025, Cape Town's dam levels were reported to be over 60 per cent.



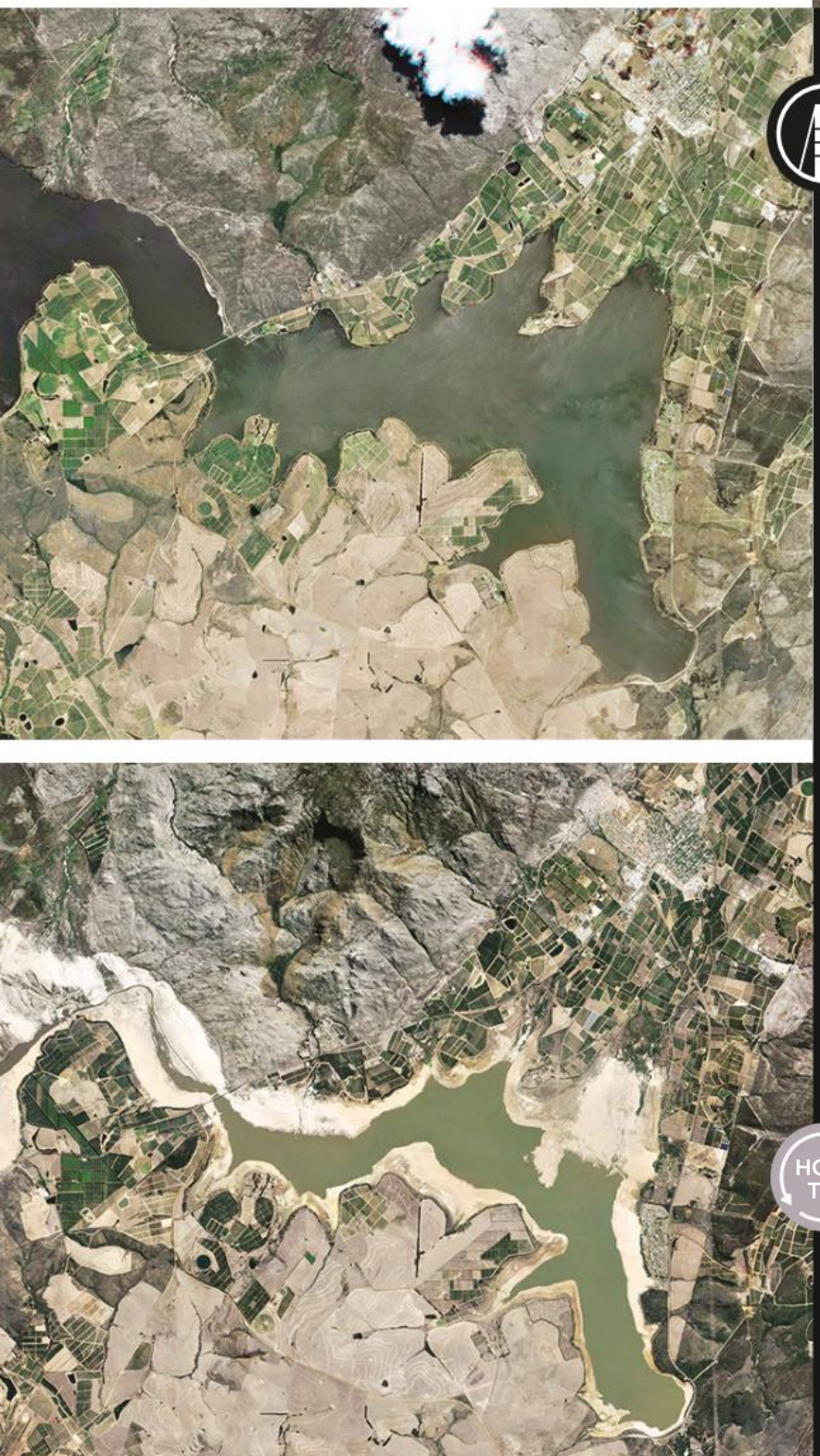
Source 1: This graph shows Cape Town's water storage levels during the period 2013–2018.

Source: Planet Labs Inc.

Causes of the problem

The twin problems behind Cape Town's water crisis were drought and massive population growth. The year 2017 was the driest on record for Cape Town, and 2015–2017 was the driest three-year period since 1933. In May 2017, the drought was declared the city's worst in a century. Since 1915, Cape Town's population has grown by nearly 80 per cent, but dam water storage has increased by only 15 per cent.

Source 2: Satellite images of Theewaterskloof Dam in 2013 and 2018



Source 3: Cape Town residents queue for free water from a well in February 2018.

Learning ladder G2.13

Water case studies

1. Why was Cape Town at risk of running out of water in 2018? Name two causes that made the city vulnerable.
2. Use Source 2. Draw a map showing how the amount of water in Theewaterskloof Dam changed from 2013 to 2018. Use a key to label very deep water, deep water, shallow water, and areas with no water.
3. How did the drought affect Cape Town between 2015 and 2018? Compare this drought with another place that has faced water shortages. What was similar or different?
4. How did both natural events and human activities affect Cape Town's water supply?

Strategies for action

1. Describe the main strategies used by Cape Town during the 2018 water crisis to reduce water use.
2. Research and explain how public communication and community behaviour helped support these strategies during the crisis.
3. Predict how the changes in dam levels shown in Source 1 could affect which strategies Cape Town chooses in the future.
4. Design two new strategies Cape Town could use to build a more secure water future. Consider technology, infrastructure, or community actions.

HOW TO

Sustainability, page 234

How do I conduct a good inquiry?

Throughout the chapter you have developed knowledge and understanding of water variability and management. Background knowledge is important as it helps you make connections to new information, ask better questions and consider different perspectives. As you were progressing through the chapter you have been gathering information through highlighting, note taking or responding to the Learning ladder. It is now time to start planning your inquiry! Refer to pages 452–8 for a step-by-step guide to this process.

Throughout the chapter, a range of case studies was presented to apply your learning to real-life events. Review these pages and select a case study to build your inquiry around.

- What has led to water scarcity in North Africa?, page 282
- Who built the world's largest water pipeline?, page 296
- How can we make fresh water in Australia?, page 298
- How do First Nations Peoples care for water Country?, page 300

For your selected case study, complete a 'see, think, wonder' to help build curiosity and develop ideas you may cover in your inquiry.

Remember: A good inquiry will be focused on an aspect of the topic that interests you. It is more than just a research task that you present as a PowerPoint; it is a genuine investigation into something you are wondering about.

See
What do you see?
What are the human and physical characteristics?

Think
What do you think about that?
Where is it?
Why is it there?
When did it occur?

Wonder
What questions does this raise in your mind?
What else do you need to know to understand what is happening here?
What are other people saying about this?

Write down five observations you make when viewing the data presented.

The following is a list of example open-ended questions which may help you to develop your inquiry.

Water variability and management

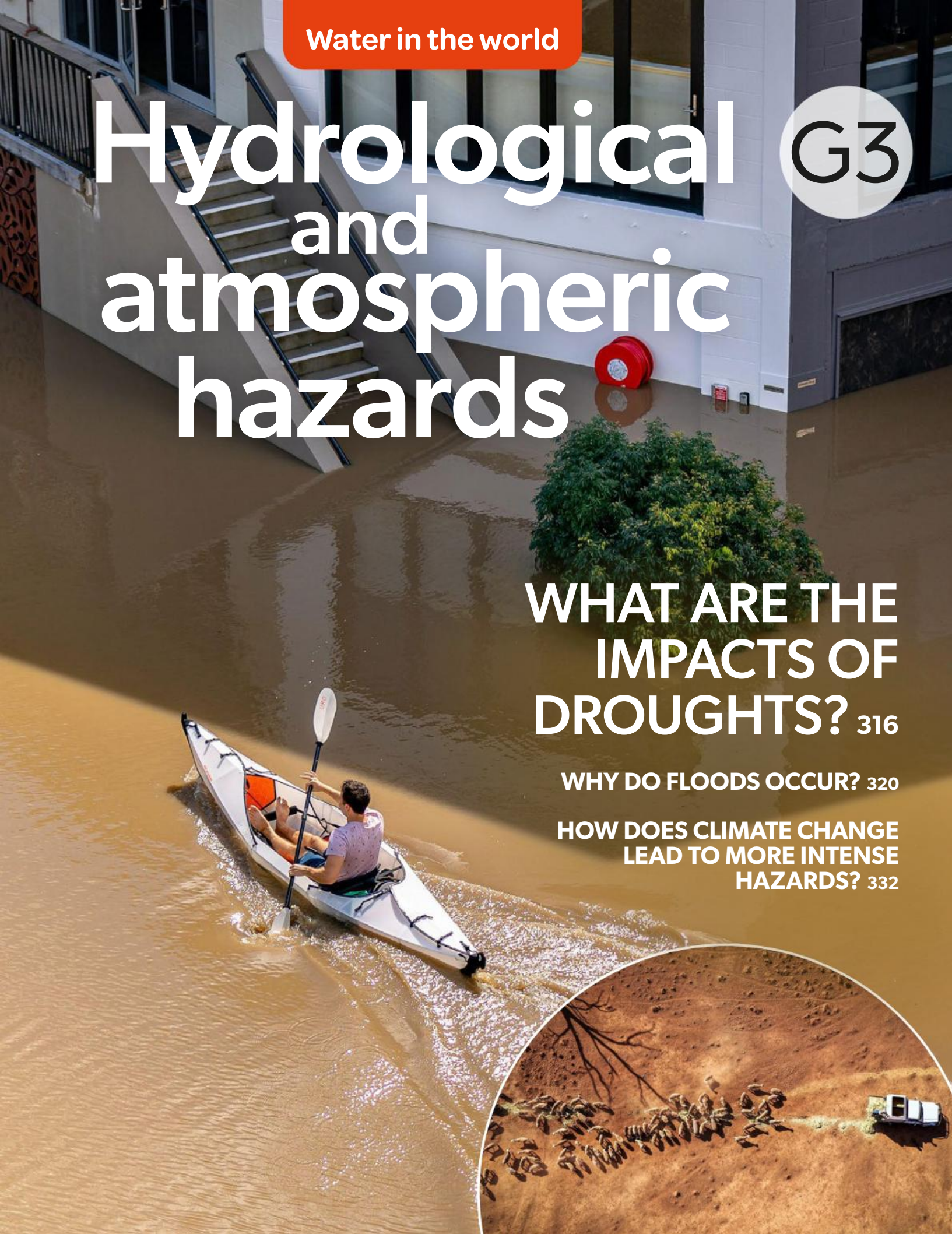
- **Descriptive question:** *What is water variability and how does it affect different regions?*
- **Procedural question:** *How do seasonal changes impact water availability?*
- **Comparative question:** *How is water managed differently in drought-prone areas compared to flood-prone areas?*
- **Evaluative question:** *How successful are water management strategies in reducing water shortages?*

Level up!

Throughout the chapter you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to attempt new skills. When planning your inquiry, consider how you may integrate geospatial technology into your fieldwork or how you may explore a range of perspectives. Use the How-to chapter to support you in planning and research.

Hydrological and atmospheric hazards

G3



WHAT ARE THE IMPACTS OF DROUGHTS? 316

WHY DO FLOODS OCCUR? 320

HOW DOES CLIMATE CHANGE LEAD TO MORE INTENSE HAZARDS? 332

G3.0

How can I understand hydrological and atmospheric hazards?

Hydrologic and atmospheric hazards account for 90 per cent of environmental hazards. Droughts, floods and other events are becoming more intense due to climate change.

Learning ladder

The Learning ladder lists the knowledge and skills you will develop throughout the year, with five levels of increasing difficulty. By mastering foundational knowledge and skills at the lower levels, you will build a solid understanding that prepares you to tackle more advanced concepts and skills as you progress towards the top.

Steps in knowledge progression	Hydrological and atmospheric hazards			Geographical inquiry	
	Hazard causes	**Hazard impacts**	**Hazard responses**	**Planning and collecting**	**Representing information**
5	I can analyse how the causes of hazards change over time.	I can predict how impacts may change.	I can evaluate responses.	I can use geospatial technology to record data.	I can follow ethical practices when working with data.
4	I can explain interconnections between causes of hazards.	I can compare impacts in different places.	I can discuss government responses to reduce hazard impacts.	I can gather primary data.	I can use geospatial technologies to create maps.
3	I can explain the process of a hazard.	I can quantify impacts.	I can compare community responses to hazard events.	I can gather information from reliable secondary sources.	I can use geographic conventions to construct maps.
2	I can describe the distribution of hazards.	I can explain impacts.	I can explain responses.	I can plan an inquiry.	I can represent data and information.
1	I can identify physical causes of hazards.	I can describe impacts.	I can describe responses.	I can ask open-ended questions.	I can select data relevant to a question.

Source 1: Commuters wade through floodwaters in Pakistan in July 2023 when the Chenab River burst its banks and inundated at least 50 villages.

I can use geographical concepts to structure data analysis.	I can evaluate ethical considerations.	I can consider perspectives to evaluate strategies.	I can analyse the implications of phenomena.	5
I can predict change to patterns.	I can assess the reliability of data.	I can design strategies.	I can explain interconnections with data.	4
I can explain distributions and patterns.	I can write evidence-based conclusions.	I can predict the impact of a strategy.	I can support explanations with data.	3
I can describe distributions and patterns.	I can describe the impact of geographical phenomena.	I can explain a strategy.	I can explain the relevance of information.	2
I can read graphs and maps.	I can answer geography questions.	I can describe a strategy.	I can describe phenomena using geographical terms.	1
Interpreting information	**Making conclusions**	**Strategies for action**	**Presenting ideas**	Steps in skill progression
	Concluding and decision-making		**Communicating**	

What are hydrological and atmospheric hazards?

Hazards are events or phenomena, natural or human-made, that can harm people, damage property, disrupt livelihoods or impact the environment. A hazard event occurs when these phenomena happen, while a disaster refers to an event causing significant harm, such as loss of life or major damage to a community. Hazards are classified into five main types: geophysical (earthquakes, volcanoes), biological (diseases, locust plagues), technological (chemical spills, industrial accidents), hydrological (floods, droughts) and atmospheric (storms, heatwaves).

Hazards and disasters

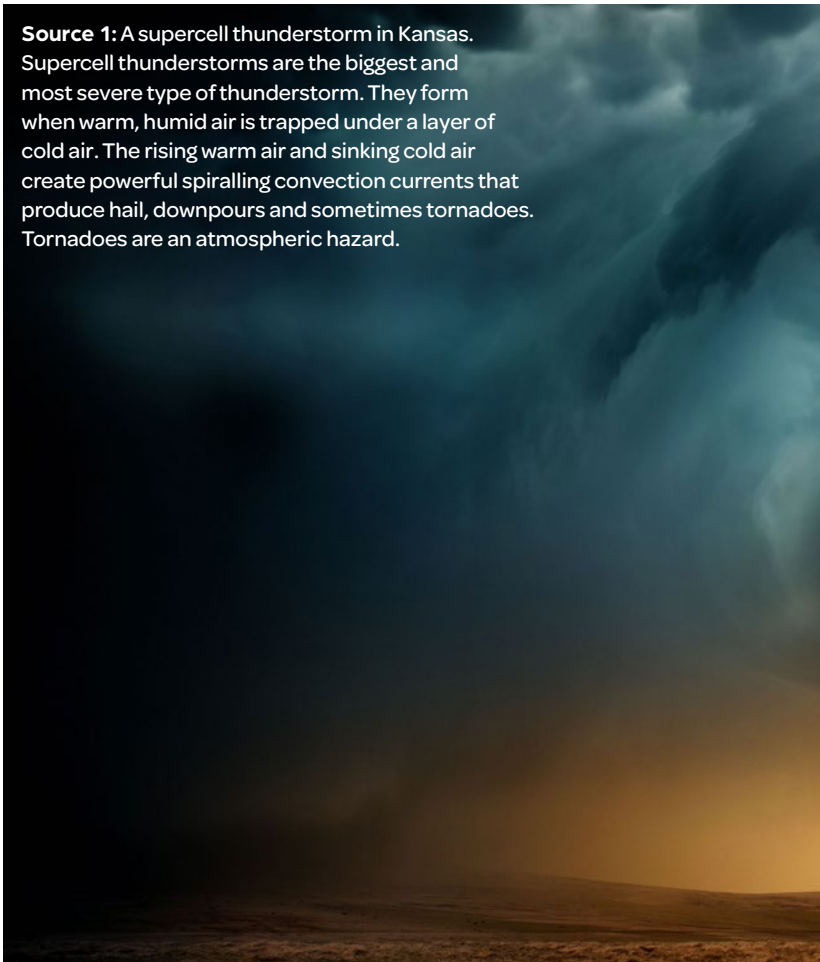
Geographers classify hazards according to how they are caused. Hydrological and atmospheric hazards are often interconnected, caused by changes in the atmosphere, climate or weather. As a result, they are sometimes grouped using the term 'hydrometeorological hazard': hydro for water, and meteorological for atmosphere or weather. They include events such as cyclones, heatwaves, droughts and storm surges. Disasters occur as a direct or indirect result of hazard events. For example, when a tornado tears through a community, the human loss of life and damage to property and environment are regarded as a disaster. Not all hazard events lead to disasters. If a flood occurs on a floodplain, where there is little infrastructure, and there is no injury or loss of human life, it is seen as a natural process.

Hydrological and atmospheric hazards

Hydrometeorological hazards are often interconnected to other types of hazards. For example, they can lead to bushfires, because dry weather, little rain and strong winds make it easier for fires to start and spread. These hazards are also linked to **geological hazards** (Earth-related), such as landslides caused by heavy rain. They can connect to **biological hazards** (living things), such as warm weather and fast-growing crops that attract locust plagues. They can even cause **technological hazards** (human-made), such as toxic chemicals spreading through rivers or changes in ocean currents affecting the environment.

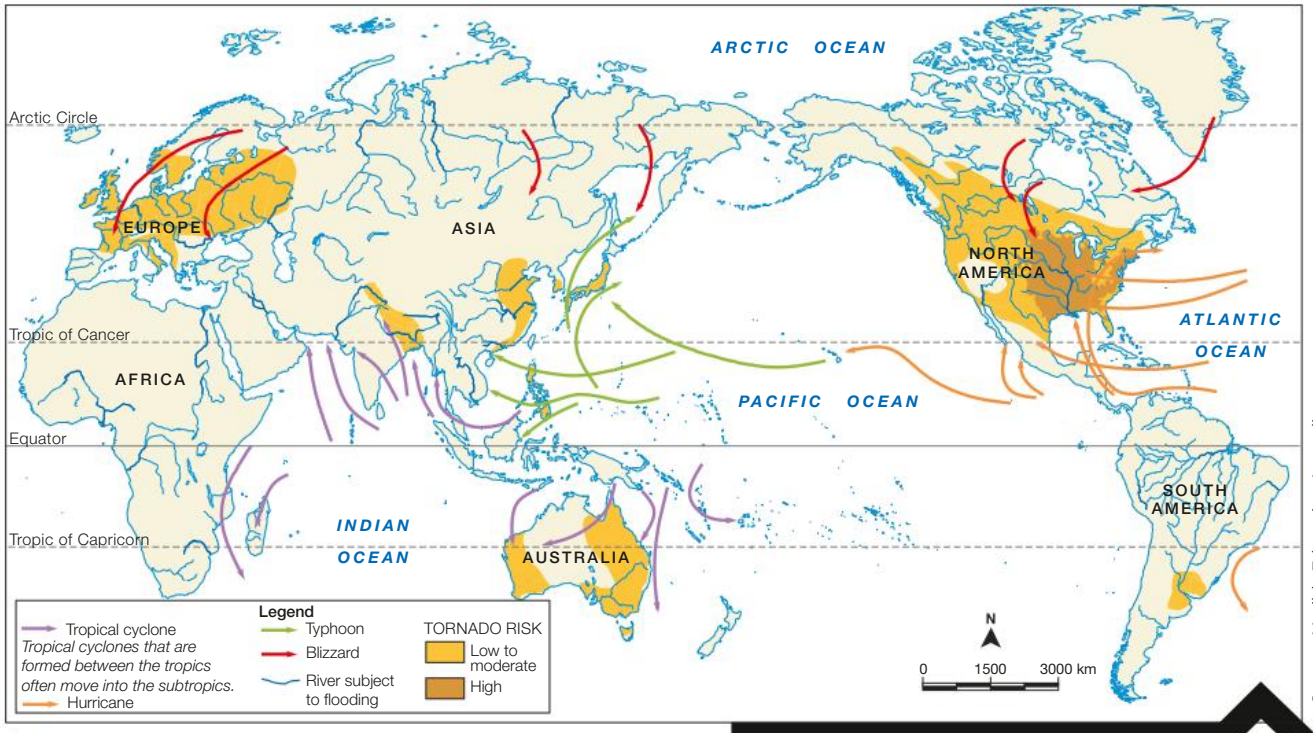
Over the last 50 years, hydrometeorological hazards have been responsible for 50 per cent of all disasters, 45 per cent of associated deaths and 74 per cent of reported economic losses. Droughts (causing 650 000 deaths) and storms (causing 577 232 deaths) had the highest death tolls. Climate change is significantly increasing the frequency and severity of these hydrological and atmospheric events.

On average, one hydrometeorological hazard occurs globally every day, killing 115 people and causing $202 million in daily economic losses. Improved early warning systems, planning and preparedness have reduced the numbers of deaths over time.



Source 1: A supercell thunderstorm in Kansas. Supercell thunderstorms are the biggest and most severe type of thunderstorm. They form when warm, humid air is trapped under a layer of cold air. The rising warm air and sinking cold air create powerful spiralling convection currents that produce hail, downpours and sometimes tornadoes. Tornadoes are an atmospheric hazard.

World atmospheric and hydrological hazards



Source: Matilda Education Australia

Source 2: Spatial distribution of atmospheric and hydrological hazards

However, the number of disasters has increased more than fivefold since the 1970s. This increase is due to climate change causing more extreme weather events, as well as improvements in disaster tracking and reporting, which make incidents more visible.

Learning ladder G3.1

Hazard causes

1. What are atmospheric hazards? Provide an example.
2. Source 2: Describe the region of the world where tornado risk is the greatest.
3. Source 2: Suggest reasons to explain the pattern of cyclones, hurricanes and typhoons.
4. Explain the interconnection between an event being labelled a disaster and the value humans put on things and places.

Planning and collecting

1. Source 1: Complete a 'See, think, wonder' for this photo.
2. Suggest what fieldwork methods would help collect useful data on tornado formation.
3. Source 2: Explain why this map is a secondary source of data.
4. Source 1: Suggest why a geographer may take a photograph like this. What information might it provide?

Make it spicy

Define *environmental hazards*.

Environment, page 230; interconnection, page 227; photographs, page 436; planning and collecting, page 410

HOW TO

G3.2

How are drought and bushfires interconnected?

The extended periods of below-average rainfall associated with droughts lead to reduced soil moisture and lower water levels in rivers and reservoirs. Low humidity and high temperatures during droughts create ideal conditions for intense, fast-spreading bushfires.

Fuel for fire

Australia is one of the most drought-prone countries in the world. On average, there are about three years of drought in every decade. During a drought, low rainfall reduces the moisture levels in the soil. This limits plant growth and dries out vegetation. Plants that are normally less prone to burning due to high moisture levels become more susceptible to ignition. The dry plant material acts as fuel for fires, allowing them to ignite and spread more rapidly.

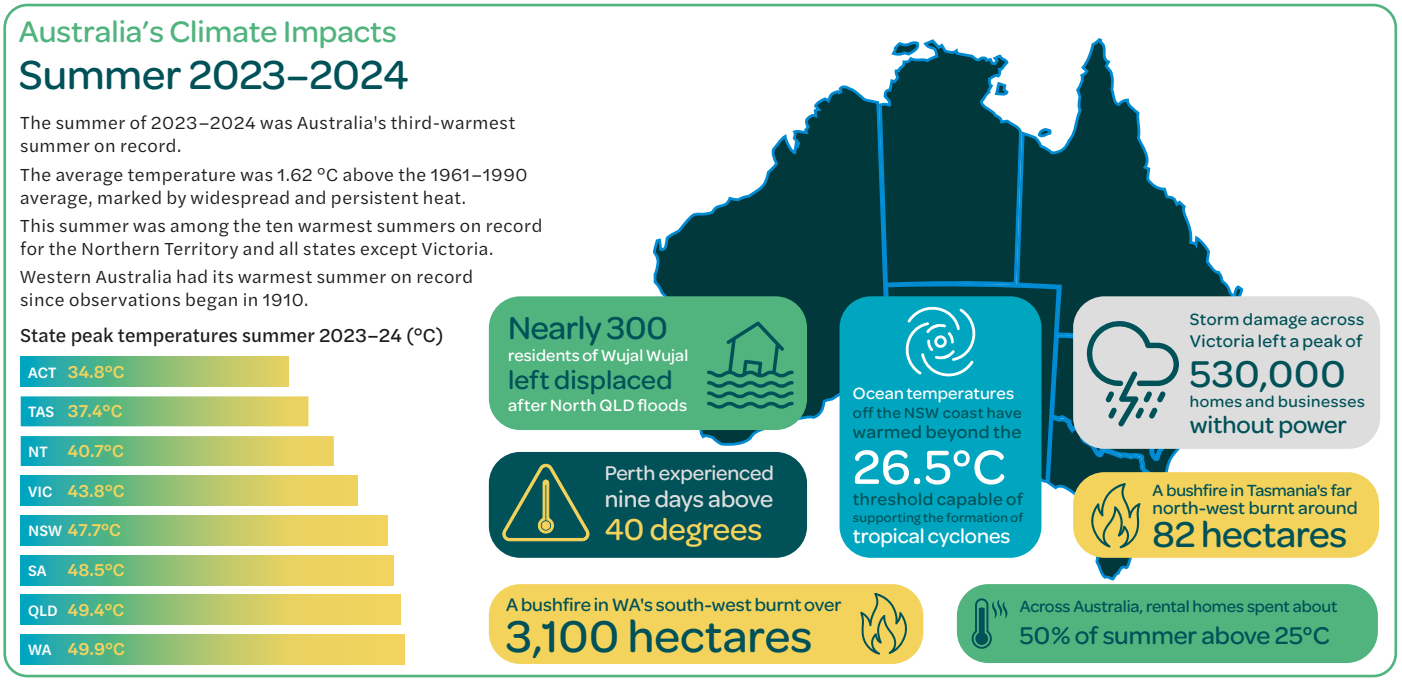
Fire intensity

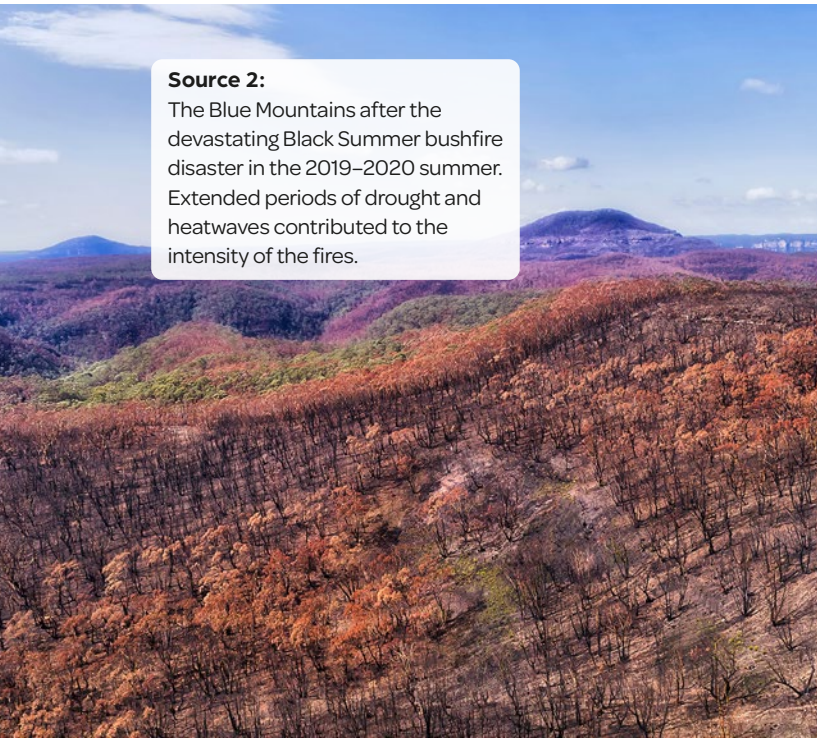
Low rainfall also means there is less available water in rivers, lakes and reservoirs. During a bushfire, this limits firefighters' capacity to put out fires and reduce the impact on people and place.

Droughts are also associated with longer and more intense heatwaves. A heatwave is when both day and nighttime temperatures are unusually hot for more than three days. Heatwaves worsen dry conditions and increase fire risk.

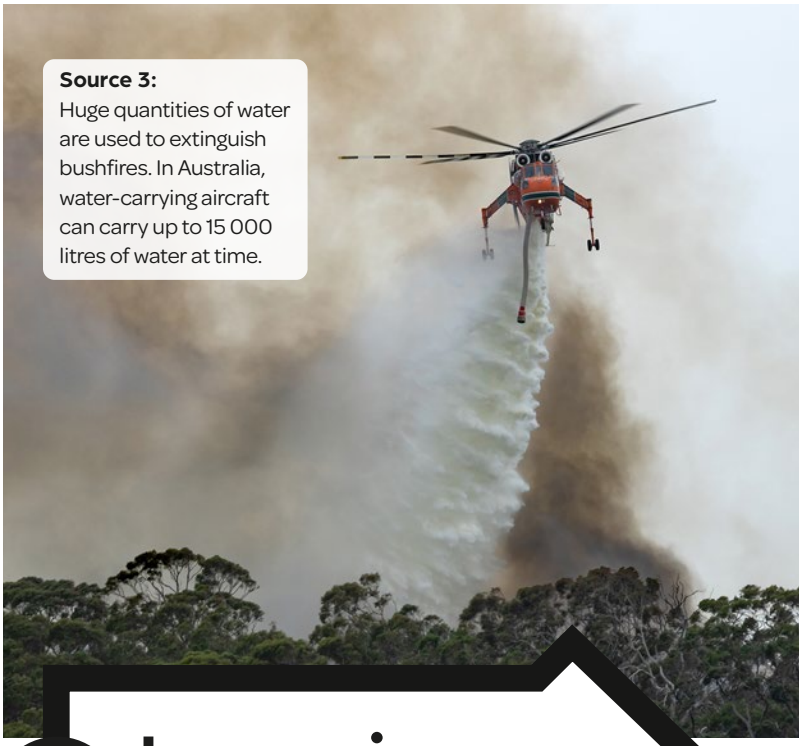
In January 2025, Los Angeles faced catastrophic wildfire conditions due to a combination of drought, lower than average winter rainfall and powerful winds. Between 2022 and early 2024, higher than average rainfall in the wet season brought about increased vegetation growth, which dried out during recent droughts, creating large amounts of fuel for fires. Despite being their winter season, by 10 January over 29 053 acres had burnt, more than 180 000 people were displaced, including A-list celebrities, and over 2000 buildings were destroyed. By March 2025 damage and economic loss was estimated to be between $250 and $275 billion, highlighting the growing risks of climate change and drought.

▼ **Source 1:** Climate change is expected to make weather events such as drought more extreme, leading to an increased number and intensity of bushfires.





Source 2: The Blue Mountains after the devastating Black Summer bushfire disaster in the 2019–2020 summer. Extended periods of drought and heatwaves contributed to the intensity of the fires.

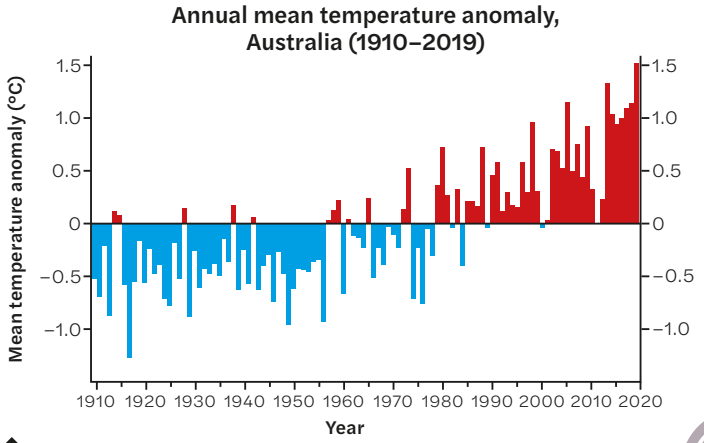


Source 3: Huge quantities of water are used to extinguish bushfires. In Australia, water-carrying aircraft can carry up to 15 000 litres of water at time.

Australia is getting warmer

Since 1910 Australia's climate has warmed by more than 1°C. **Climate change** is largely driven by increased carbon dioxide and other human-made emissions into the atmosphere. These gases trap heat just like the glass roof of a greenhouse. The greenhouse effect is expected to deliver even hotter and drier conditions to Australia.

Climate change is already leading to more severe heatwave conditions in Australia, which can result in an increased risk of bushfires and long-term drought. Nine of the 10 warmest years on record have occurred since 2005. In 2019 Australia's annual mean temperature was 1.52°C above average – making it one of the hottest years ever recorded in Australia.



Source 4: Variations to the average annual temperature in Australia

Source: Matilda Education Australia

Learning ladder G3.2

Hazard causes

1. State the key cause of droughts.
2. Source 3 (G2.4): Describe where droughts are most likely to occur in Australia.
3. Use a flow diagram to explain how droughts can lead to more intense bushfires.
4. Respond to the statement: 'Droughts do not always lead to bushfires'.

Presenting ideas

1. Describe how climate change is predicted to impact the frequency of drought events.
2. Source 1: Explain how the data presented in this source helps answer the inquiry question: 'What factors lead to drought in Australia?'
3. Source 3: Why is knowing the water-carrying capacity of firefighting aircraft important when explaining the impact of drought on bushfire management?
4. Sources 2 and 4 : Research and explain the interconnection between the severity of the Black Summer fires in NSW, the recent drought (see G3.3) and climate change.

Make it spicy

What *environmental* factors intensify bushfires?

HOW TO
Environment, page 230; presenting ideas, page 449

G3.3

What are the impacts of droughts in NSW?

Droughts are prolonged periods when there is not enough water for the normal needs of people, plants and animals. Between 2017 and 2020, New South Wales experienced a record-breaking drought that was the hottest and driest on record in over 120 years. More droughts are expected as a result of climate change.

Impacts of the drought

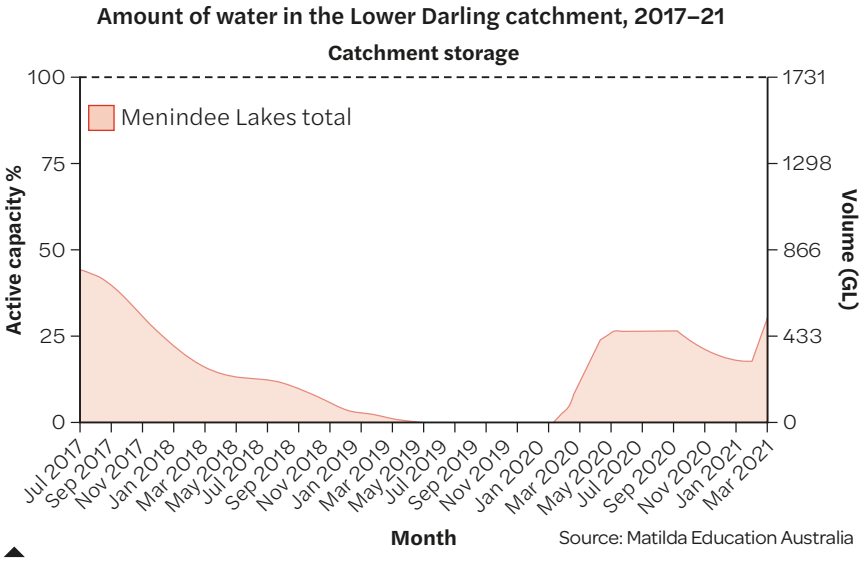
Environmental impacts

The lowest rainfall on record reduced water storage in dams and reservoirs. In some cases, water sources had dried up entirely, which led to hundreds of native species, livestock and fish dying. Further, the dry soils increased dust storms, resulting in the erosion of important topsoil in many parts of New South Wales. This reduced the capacity for the land to grow vegetation, further impacting species habitats and food sources.

The dry and warm weather, combined with low humidity and strong winds, resulted in a prolonged period of bushfires across New South Wales in 2019 and 2020. More than 17 million hectares of land was burned and more than 1 billion mammals, bird and reptiles perished.

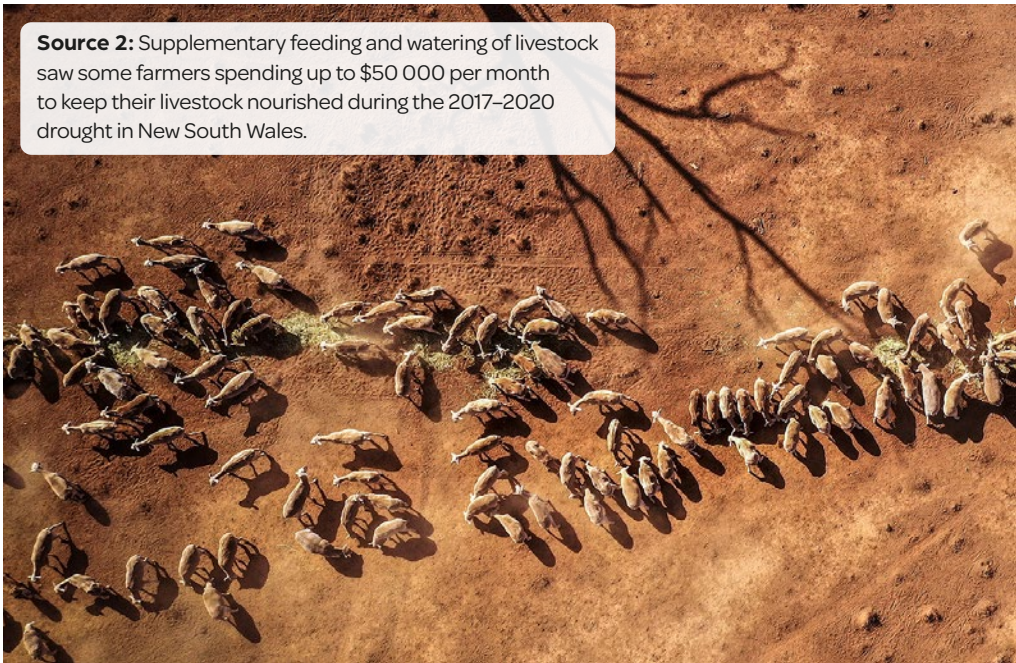
Economic impacts

The drought had a substantial impact on the agricultural sector, preventing crops from growing and resulting in the loss of livestock for many farmers. Farmers were forced to buy water and feed for their livestock. Further, the drought degraded the land and made it difficult to plant crops, resulting in many farmers not growing crops to sell for four years in a row. This had many economic implications. It reduced the number of jobs available in rural areas.



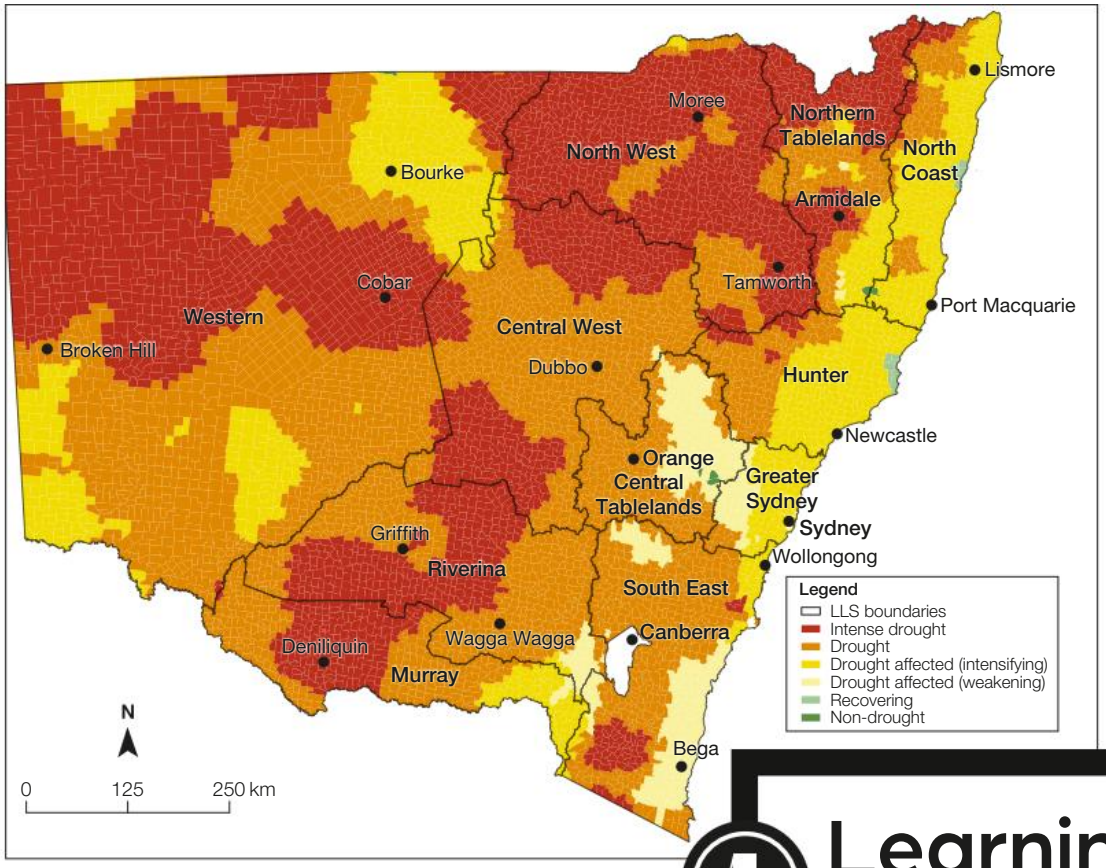
Source 1: A graph displaying the volume of water in the Lower Darling catchment, NSW, flowing from the Menindee Lakes between 2017 and 2021

It also reduced the amount of money people in rural areas had to spend at local businesses, and increased the price of food across Australia, as it became more difficult to access fruit, vegetables and meat. The government attempted to help farmers through various support schemes that provided financial aid and resources to drought-affected farmers.



Source 2: Supplementary feeding and watering of livestock saw some farmers spending up to $50 000 per month to keep their livestock nourished during the 2017–2020 drought in New South Wales.

New South Wales drought severity, 2019



Source 3: A choropleth map of drought conditions by 2019. The darker the areas, the more intense the drought they were experiencing.

Source: Matilda Education Australia

Social impacts

Dams across New South Wales either dried up or reached record lows. As a result, the government implemented strict water restrictions that forced families to reduce their use of water and prevented people across New South Wales from using water for particular activities, such as washing their cars or watering their gardens. The drought also affected the livelihood and wellbeing of communities across the state as people lost their income and sense of connection to the land, especially those in regional areas.

Learning ladder G3.3

Hazard causes

1. List the characteristics of a drought.
2. Source 3: Describe the location of regions that suffered intense drought.
3. Explain the cause and extent of the drought in New South Wales between 2017 and 2020.
4. Explain the interconnection between the occurrence of drought and climate change.

Interpreting information

1. Identify one short-term and one long-term impact of the 2017–2020 drought.
2. Source 1: Describe the changes in the volume of the Lower Darling catchment at Menindee.
3. Source 1: Explain why dam storage can be used as an indicator of drought severity.
4. Source 3: Predict how drought conditions may change over time as a result of climate change.

Make it spicy

How do droughts impact *places*?

HOW TO

Interconnection, page 227; interpreting information, page 428; place, page 226; PQE, page 438; SHEEPT, page 440

G3.4

Case study

How do bushfires impact Victoria?

Bushfires occur when weather conditions are hot, dry and windy and there is enough dry fuel to burn. In these conditions, it only takes a spark from a machine or a lightning strike for a fire to begin.

Australian bushfires 2019–20

Once fires have started, wind fuels the fire with oxygen and moves the fire forward. Wind also carries burning leaves, twigs and bark, known as **embers**, ahead of the fire. Embers cause new **spot fires** to ignite. The intense heat from the 2019–20 bushfires caused rare **pyrocumulonimbus clouds** to form above them. These clouds can produce thunderstorms and lightning that can spark other bushfires or downpours to put them out.

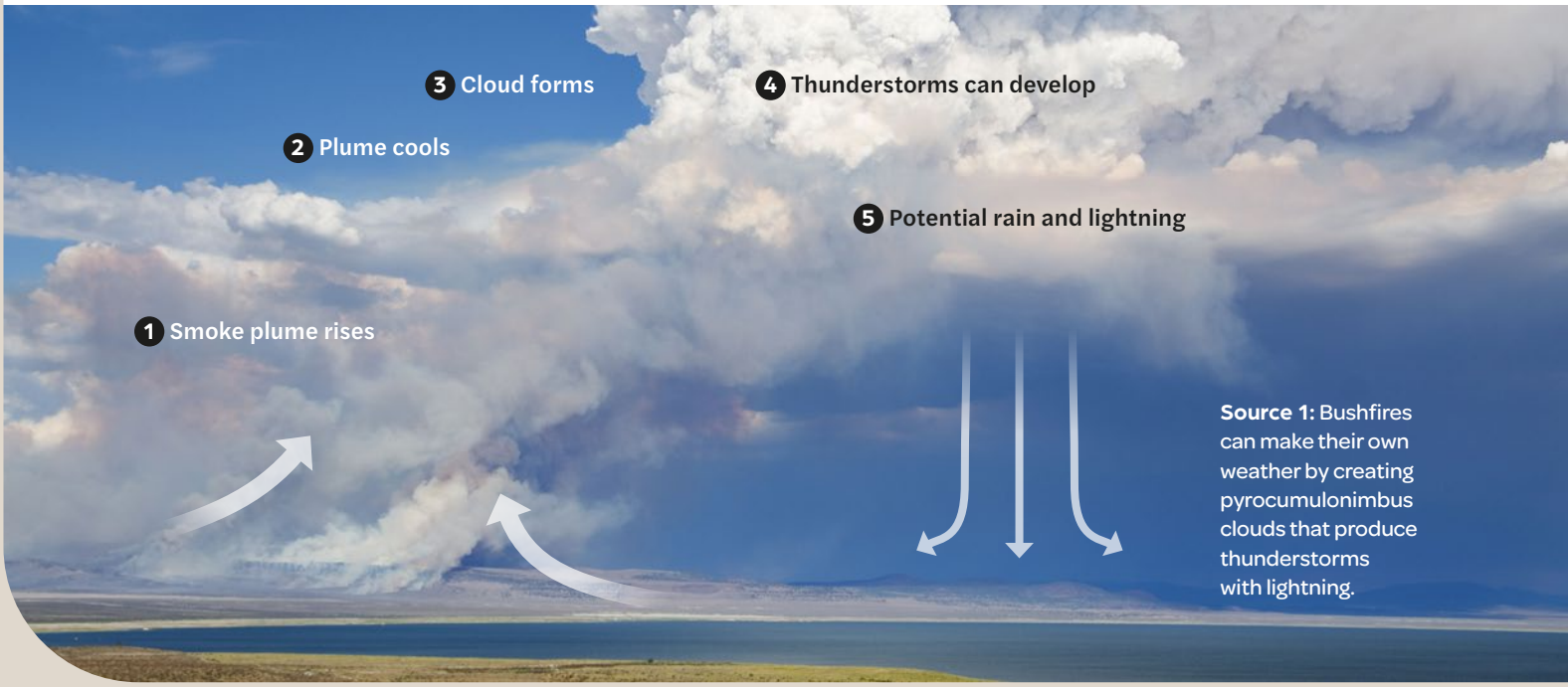
Record-breaking temperatures and months of severe drought in the 2019–20 spring and summer period created perfect conditions for bushfires to spread rapidly.

The 2019–20 Black Summer bushfires affected all states and territories of Australia except the Australian Capital Territory, although smoke from the fires blanketed the nation's capital.

More than 17 million hectares of land burned, an area greater than the size of England. At least 24 people died, along with 100 000 head of cattle and 1 billion animals, birds and reptiles. More than 3000 homes were destroyed, forcing thousands of people to seek shelter elsewhere.

A state of emergency for all of New South Wales and affected areas of Victoria came into force. Parks, camping grounds and roads were closed, and holidaymakers in the peak holiday season were told to leave coastal towns in danger along a 260-kilometre stretch of New South Wales coast.

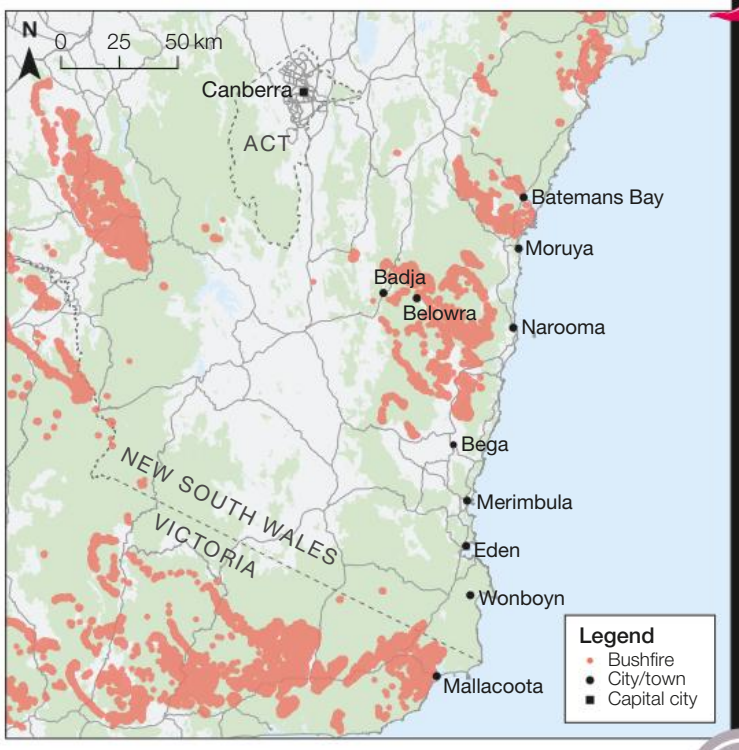
In the holiday town of Mallacoota in far eastern Victoria, 4000 residents and tourists fled to the **beach** on New Year's Eve in 2019. Only a change in wind direction stopped the fire from reaching them on the foreshore. The stranded people were eventually evacuated by the Australian navy.



Source 1: Bushfires can make their own weather by creating pyrocumulonimbus clouds that produce thunderstorms with lightning.

Source 2: Flames illuminate the sky over a property on Putty Road on 15 November 2019 in Colo Heights, New South Wales. An 80 000-hectare blaze at Gospers Mountain is burning in the direction of Colo Heights.

Major bushfires in eastern Australia, 2 January 2020



Source 3: Bushfires in south-eastern New South Wales and eastern Victoria in early January 2020

Source: NSW Rural Fire Service

Learning ladder G3.4

Hazard impacts

1. How do bushfires impact the environment?
2. Explain the impacts of the Black Summer fires to people and place.
3. Using data from the spread, quantify the impacts outlined in Question 2.
4. Compare the impacts of the Black Summer fires for New South Wales and Victoria.

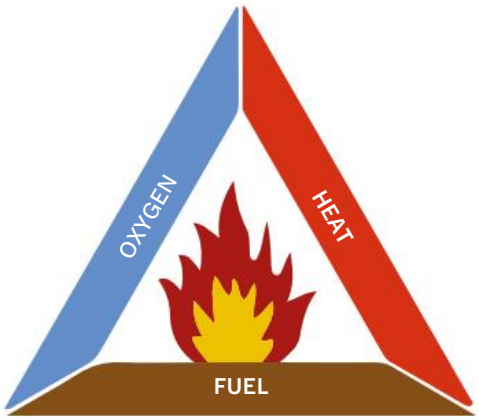
Making conclusions

1. Source 1: Suggest two ways that pyrocumulonimbus clouds are interconnected to bushfires.
2. Source 2: Describe the human and physical impacts of fire depicted in this photograph.
3. Using examples and data from the spread, write a summary that addresses the following statement: 'Bushfires in Australia have a negative impact on people and place'.
4. Source 3: Would this map be reliable for aid agencies to plan for and carry out recovery programs for affected communities?

Make it spicy

Research how *interconnecting* human and natural processes led to the severe and intense bushfires in Los Angles in early 2025.

Fire triangle



Source 4: The fire triangle helps explain the elements required for a fire to ignite.

HOW TO

Interconnection, page 227; making conclusions, page 443

Why do floods occur?

Floods are caused by heavy rains that force rivers to carry more water than their channels can hold. The water spills over the river banks and onto the flat land next to rivers, known as floodplains.

Why rivers flood

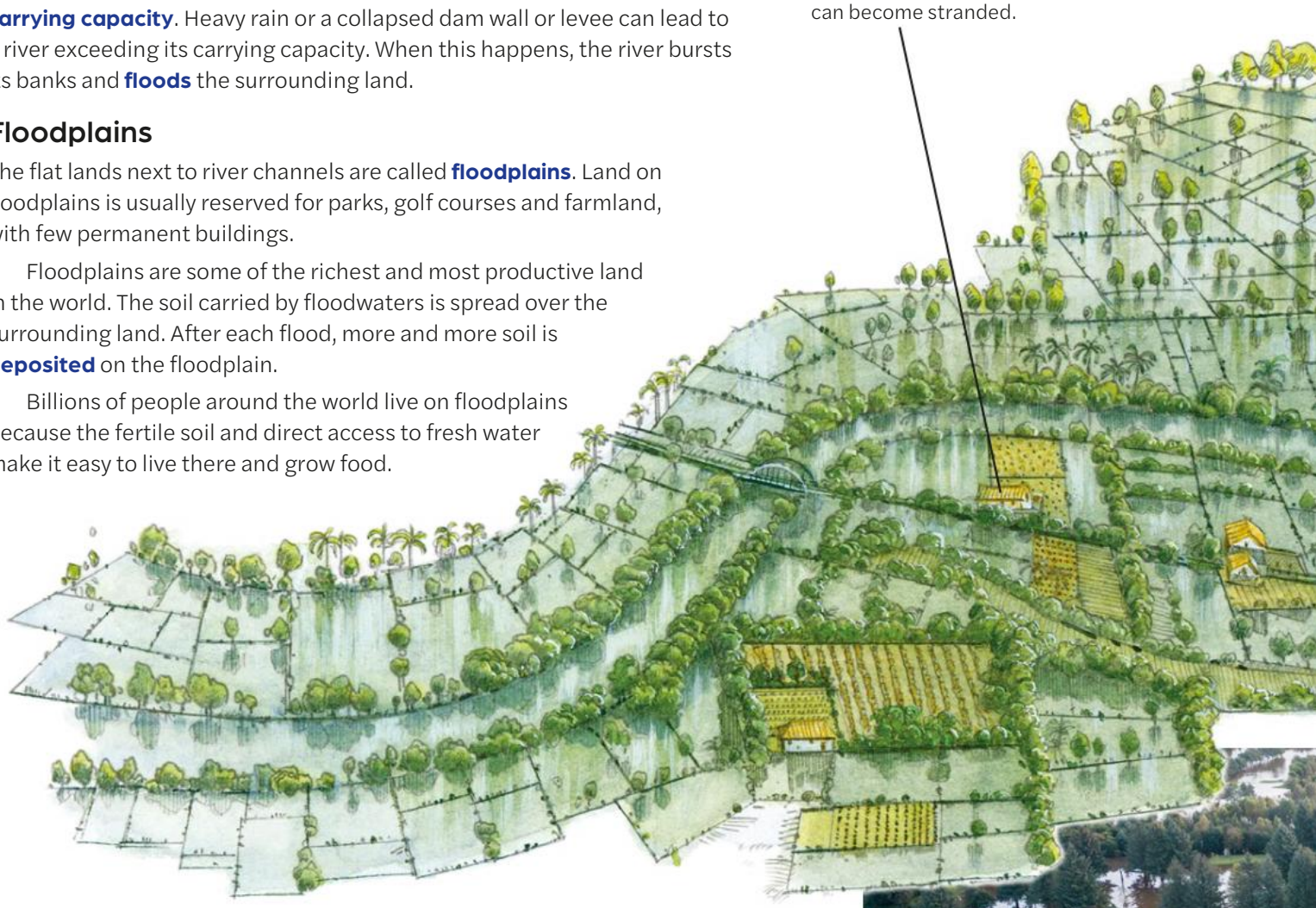
Each river can hold only a certain amount of water – this is known as its **carrying capacity**. Heavy rain or a collapsed dam wall or levee can lead to a river exceeding its carrying capacity. When this happens, the river bursts its banks and **floods** the surrounding land.

Floodplains

The flat lands next to river channels are called **floodplains**. Land on floodplains is usually reserved for parks, golf courses and farmland, with few permanent buildings.

Floodplains are some of the richest and most productive land in the world. The soil carried by floodwaters is spread over the surrounding land. After each flood, more and more soil is **deposited** on the floodplain.

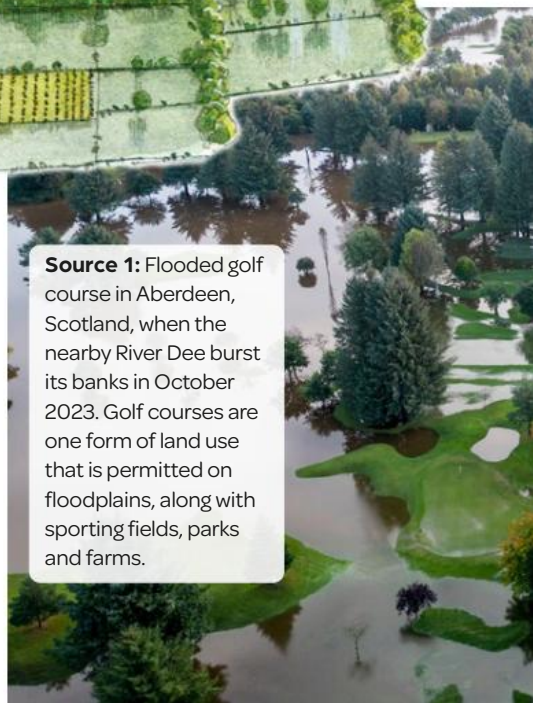
Billions of people around the world live on floodplains because the fertile soil and direct access to fresh water make it easy to live there and grow food.



Humans cause flooding

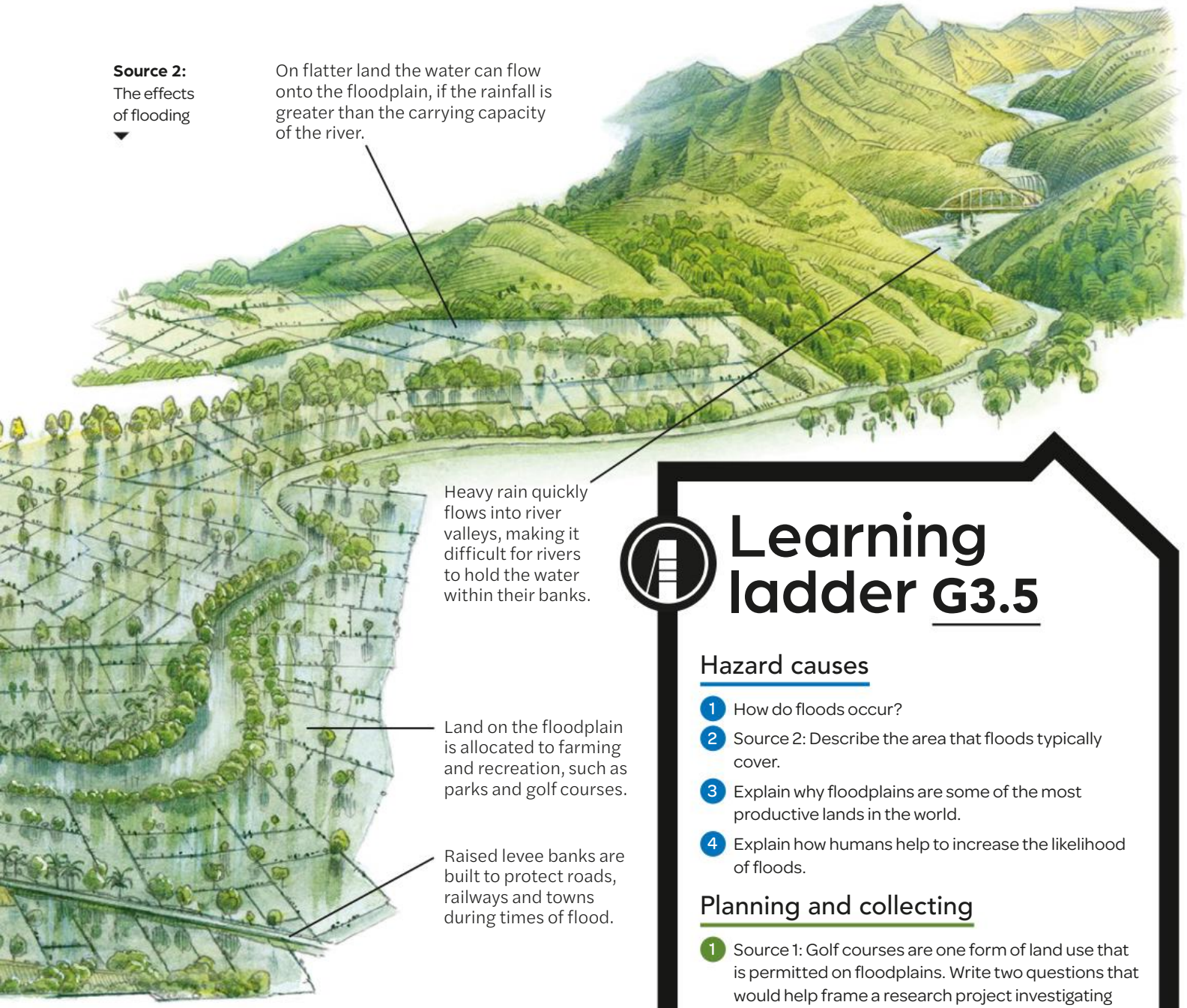
When humans clear vegetation, the plants and trees no longer bind the soil together and absorb the water. Instead, water flows into rivers, putting pressure on their carrying capacity. Removing vegetation also leads to increased soil **erosion**.

When we build towns and cities, we replace natural environments with hard surfaces – such as concrete and roads – that prevent water from soaking into the ground. When we build levee banks along rivers, we stop floodwaters, but we also increase the carrying capacity of the river. With levees, the river runs faster and deeper, and carries more water.



Source 1: Flooded golf course in Aberdeen, Scotland, when the nearby River Dee burst its banks in October 2023. Golf courses are one form of land use that is permitted on floodplains, along with sporting fields, parks and farms.

Source 2: The effects of flooding



Learning ladder G3.5

Hazard causes

1. How do floods occur?
2. Source 2: Describe the area that floods typically cover.
3. Explain why floodplains are some of the most productive lands in the world.
4. Explain how humans help to increase the likelihood of floods.

Planning and collecting

1. Source 1: Golf courses are one form of land use that is permitted on floodplains. Write two questions that would help frame a research project investigating why this would be the case.
2. What fieldwork methods would be most helpful in collecting data to answer the inquiry question: 'How does floodwater impact my local environment?'
3. Research two flood events that have occurred in Victoria in the last five years. Where were they located and what were the main causes?
4. Consider your local environment. Is your community vulnerable to flooding events? Draw a sketch and label the characteristics of a place that may be susceptible to floods.

Make it spicy

How are floods *interconnected* with environmental processes?

HOW TO

Interconnection, page 227; planning and collecting, page 410; sketching and annotating, page 416

Where do floods occur in Australia?

There are three main types of floods in Australia; riverine floods, flash floods and coastal or storm surge floods. If you live near a river system, a **drainage basin** or along the coast, you may be in a flood zone and at risk of water inundation.

Types of floods

Riverine floods

In Australia, **riverine floods** are the most common form of flooding. They are usually caused by heavy rainfall leading to river systems overflowing onto adjacent low-lying land. Coastal rivers are steeper and flow more quickly. Coastal riverine flooding occurs over a short period of time and poses a greater risk because there is less time to take preventative action.

Inland rivers with low gradients have floods that move slowly down the river, sometimes lasting for several months. Inland Australia is characterised by wide expanses of low-lying flat land. When rivers in these regions reach capacity, thousands of square kilometres are at risk of flooding. Floods may be more than 3 metres deep and last for over a month before they begin to dry.

Coastal flooding

Coastal flooding occurs when the sea level rises above usual heights, causing **inundation** of the surrounding coastline. **Storm surges** are a common cause of local coastal flooding through events such as **tropical cyclones** (see page 326). As the Earth's climate warms, rising global sea levels are also resulting in increased flood risk in many of our capital cities, which are located along coastlines and major river systems.

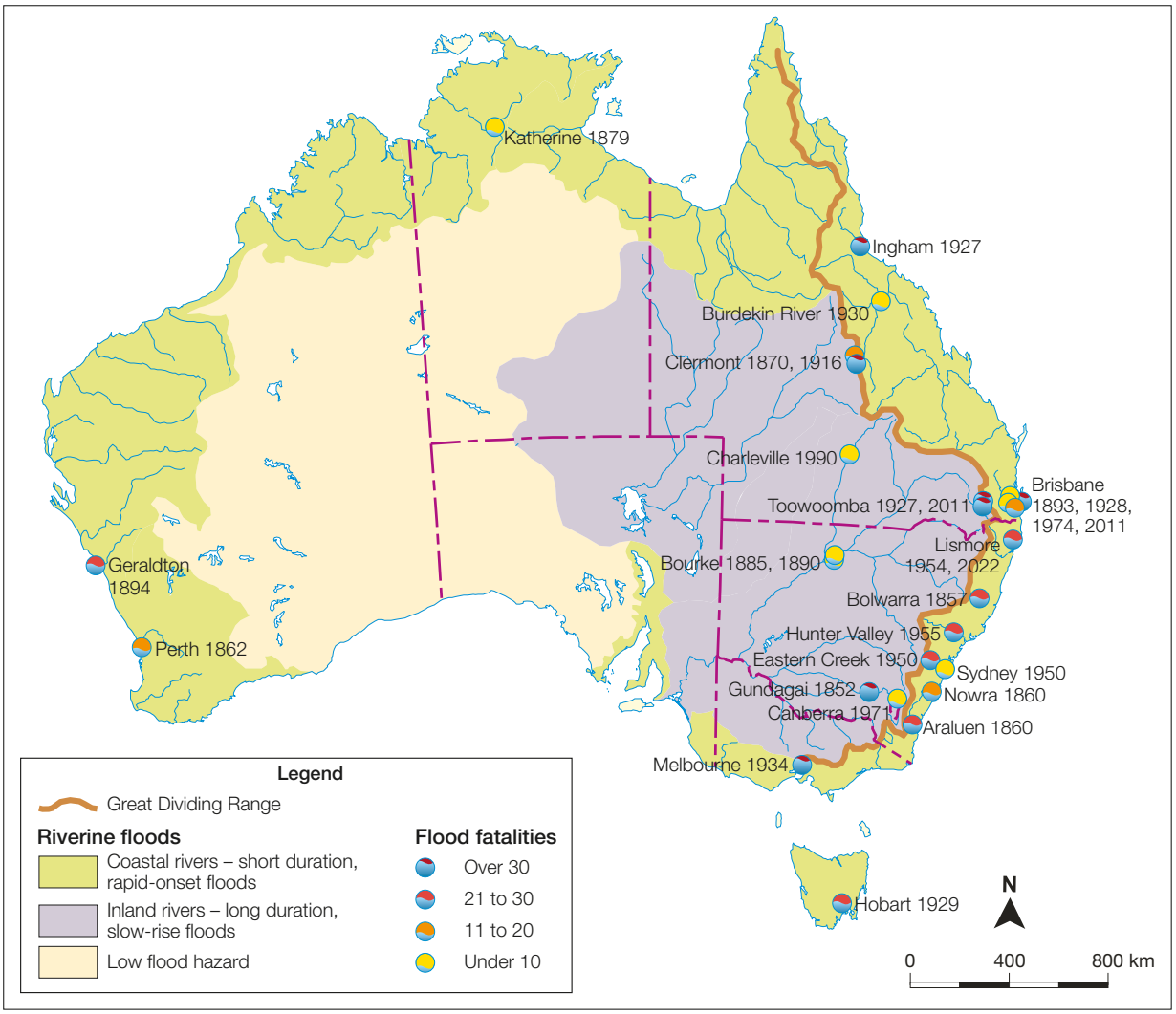
Flash floods

Flash floods or 'overland floods' are harder to predict and are brought on by sudden and intense downpours of rain. Urban regions in Australia are at particular risk of flash flooding due to infrastructure such as gutters and stormwater drains not being able to cope with the excessive rainfall, leading to inundation of roads and property. These floods are usually short-lived and drain relatively quickly once the infrastructure is under less strain.

Source 1: The Windsor Bridge in north-western Sydney was submerged under rising floodwaters along the Hawkesbury River on 22 March 2021.

Severe storms in March 2021 across the east coast of Australia resulted in riverine flooding and flash flooding. These events resulted in significant damage to 63 New South Wales local government areas. Daily rain totals of over 150 millimetres in some regions resulted in more than 65 000 people being told to evacuate across Sydney, particularly in the Hawkesbury-Nepean Valley. These floods were declared a natural disaster and described as a one-in-100-year event.

Riverine floods in Australia



Source 2: The distribution of coastal and inland riverine floods and major flood events in Australia

Source: Matilda Education Australia

Learning ladder G3.6

Hazard causes

1. What are the three different types of floods?
2. Source 2: Describe the region of Australia where inland riverine flooding takes place.
3. Explain why coastal riverine flooding has a greater impact than inland riverine flooding.
4. Explain the interconnection between Australia's landscape and flooding vulnerability.

Representing information

1. Which type of flooding brings slow change over a long period of time?
2. Create a photo essay of the 2021 New South Wales floods. For each photo describe the change that has occurred to the location and the type of flooding involved.
3. Locate the Hawkesbury-Nepean Valley in New South Wales on a map. Using annotations or a quality legend, highlight the key characteristics of this region that make it vulnerable to flooding events.
4. Access: https://mea.digital/tt2. Adjust the layers and assess the variation in flood risk across the region.

Make it spicy

How do floods *change* places?

Change, page 228; photo essays, page 422; place, page 226; representing information, page 420

HOW TO

G3.7

Case study

What were the causes and impacts of the 2022 Lismore floods?

In February and March of 2022, the large regional city of Lismore in northern New South Wales experienced extreme rainfall events. A twin peak flood disaster unfolded that set new historical flood peaks for Lismore (14.4 metres) and other downstream towns such as Coraki (7.65 metres) and Woodburn (7.17 metres).

Lismore is a flood-prone city

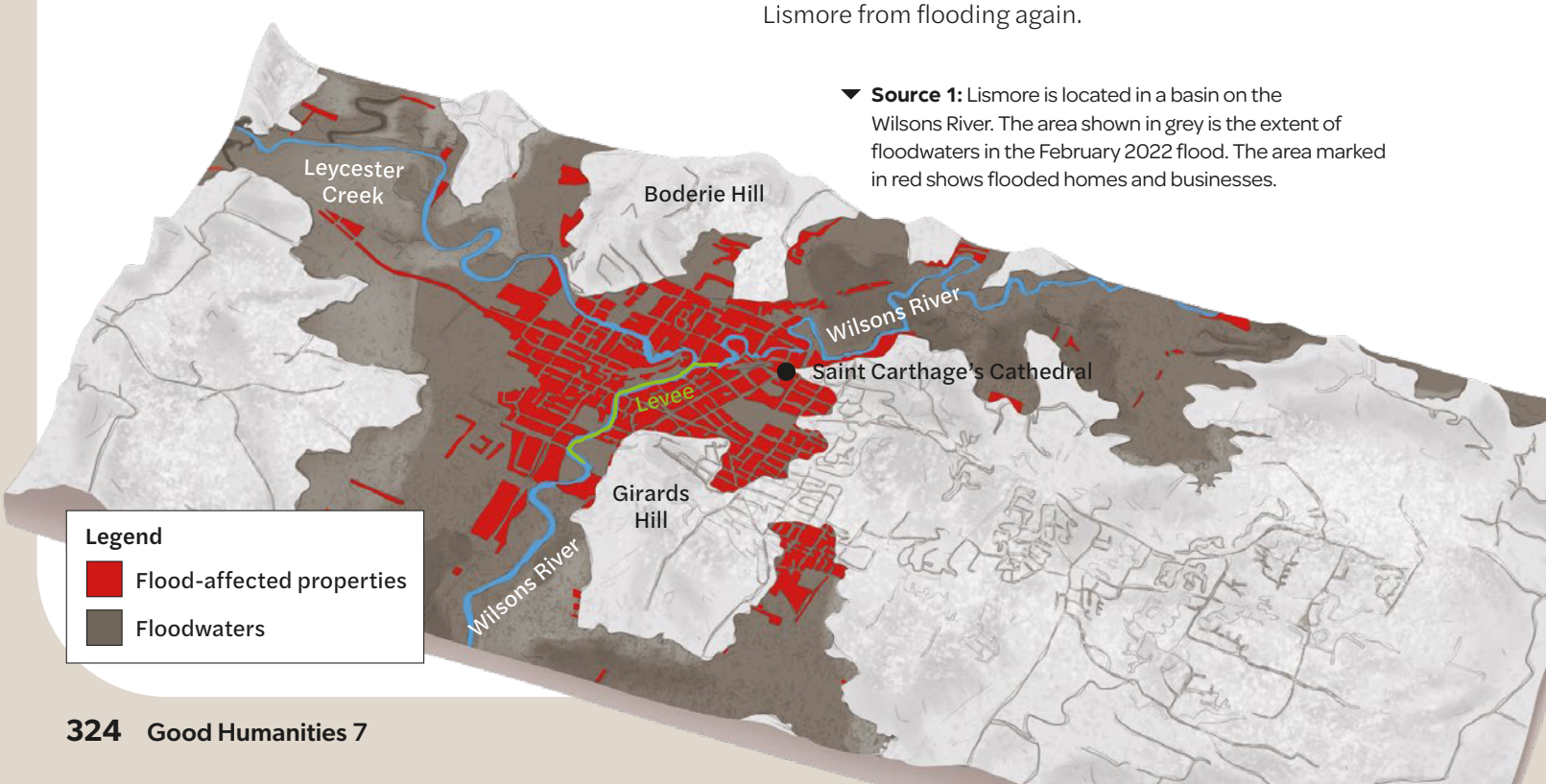
Lismore has experienced more than 150 floods since records began, with major floods over 10 metres high in 1954, 1974, 1999 and 2017. The flood record of 14.4 metres set in February 2022 was more than 2 metres higher than the previous record of 12.27 metres in 1954.

The city of Lismore developed around the river port on the Wilsons River at a time when produce such as timber was exported from the region by ship. **Deforestation** on the catchments above Lismore for forestry and agriculture has reduced the ability of the land to slow runoff and protect soil from erosion.

The Big Scrub rainforest that once protected the catchment is now small fragments of remnant forest. Run-off flows quickly off the slopes and carries soil into the creeks and rivers, reducing their capacity to carry more water. In the 24 hours between 27 and 28 February, an estimated 240 gigalitres of water flowed into Lismore, equivalent to the water flowing over Niagara Falls in a day.

Planning and responding

Some properties were purchased to become open spaces and levees were built to keep floodwaters out. These flood mitigation measures, including a 10-metre-high levee wall built in 2005 to protect the city centre, failed to prevent Lismore from flooding again.



Source 1: Lismore is located in a basin on the Wilsons River. The area shown in grey is the extent of floodwaters in the February 2022 flood. The area marked in red shows flooded homes and businesses.

Source 2: Satellite image on 2 March 2022, showing Lismore inundated by floodwaters as water overflowed the banks of the Wilsons River. Flood levels are beginning to recede in this image. On 28 February the flood level had peaked at 14.4 metres, breaking all previous levels. Saint Carthage's Cathedral sits 13.9 metres above sea level and was considered safe from flooding until this event. Up to a metre of water came into the cathedral causing significant damage to its marble floor.

Source: © Nearmap

The levee was overtopped by bigger and higher floods in 2017 and 2022. Raised houses flooded and thousands of people who still lived in vulnerable areas were directly impacted.

Nobody was prepared for the speed of the flooding and the volume of water, including the local State Emergency Service (SES), who were without sufficient personnel and equipment to respond appropriately.

A 'tinny army' of volunteers on small watercraft including kayaks and jet skis rescued hundreds of people and are credited with saving many lives. Relief centres provided emergency accommodation, food and shelter. A month later, as the clean-up continued, a second major flood hit the city on 30 March. Some businesses had re-opened and many residents had cleaned and repaired their houses. Wilsons River peaked at 12.11 metres.

In Lismore, five lives were lost, 1400 properties were severely damaged and 2000 people were instantly homeless. The estimated damage bill was $350 million, including $200 million for roads and bridges.

Learning ladder G3.7

Hazard impacts

1. List three impacts of the flood events in Lismore.
2. How does poor planning and preparation intensify the impacts of flooding?
3. Imagine you worked for a newspaper reporting on the Lismore floods. Create a list of quantified impacts to people and place to share with your audience.
4. Source 1: Compare the impacts of the flood for people within town and those in the more rural outer areas.

Presenting ideas

1. Source 2: Describe why Saint Carthage's Cathedral had never been flooded before February 2022.
2. Explain how changes to the catchments around Lismore contributes to flooding.
3. A disaster happens when natural hazards affect people and valuable things, and when the effects of those hazards are greater than our ability to prepare, overcome or recover from them. Using data, explain why the Lismore floods were classified as a disaster.
4. Explain the interconnection between deforestation and flood outcomes.

Make it spicy

Consider the concept of *space*. Describe the relative location of Lismore and explain why this place is so vulnerable to flooding.

HOW TO

Presenting ideas, page 449; space, page 224

G3.8

Why do tropical cyclones occur?

The world's tropical regions are located between the Tropics of Cancer and Capricorn, north and south of the equator. In tropical regions, the sun shines directly overhead, leading to warmer sea surface temperatures and hotter and more humid climates.

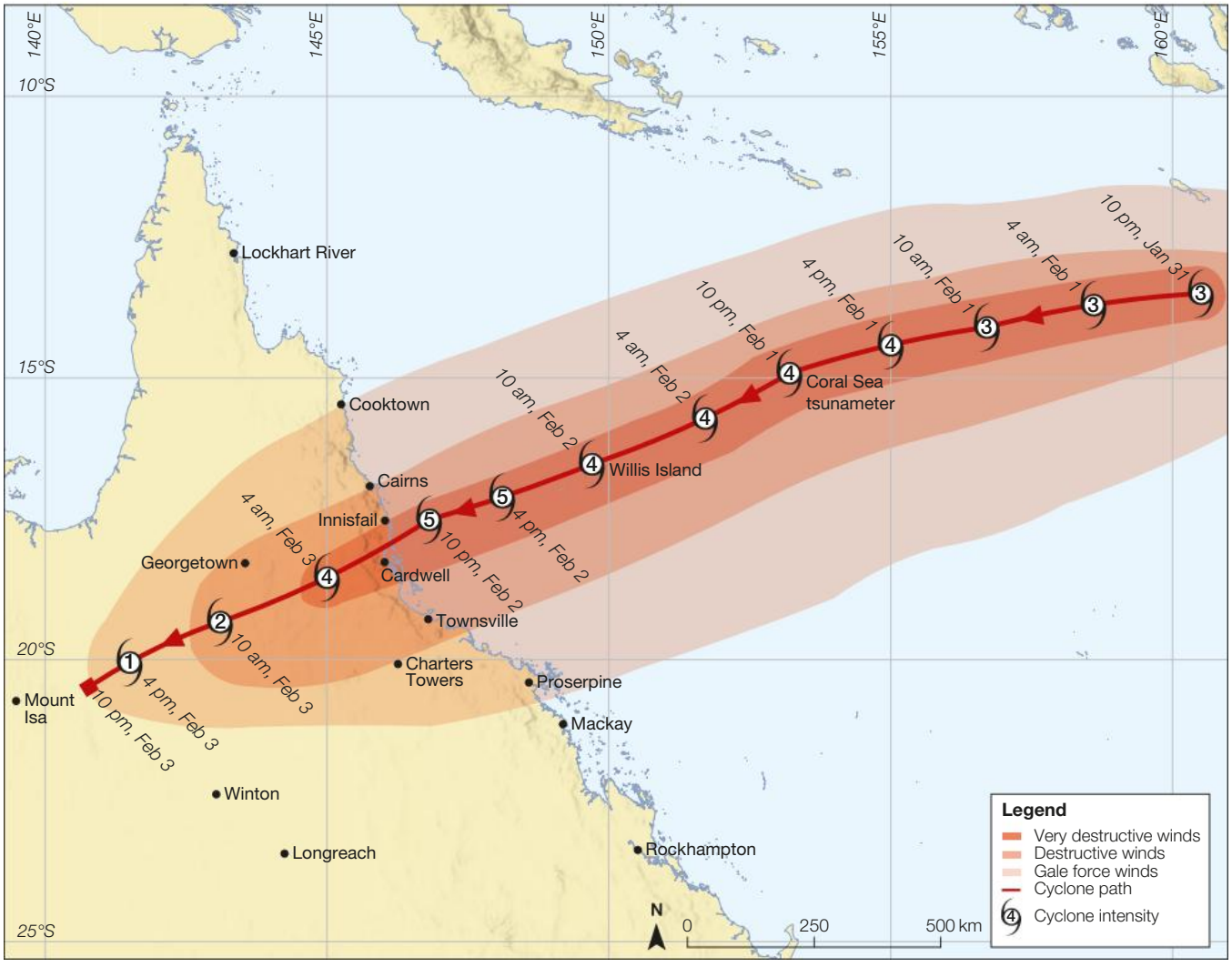
Cyclones, typhoons and hurricanes

A tropical cyclone occurs when there is a low pressure system over warm tropical oceans (above 26.5°C). Tropical cyclones can occur over days or even weeks, leading to large-scale destruction across regions. Cyclones do not follow a predictable path and can be difficult to forecast.

As cyclones require warm oceans to form, they tend to lose energy and decrease in speed when the ocean cools or they move onto land. Therefore, coastal regions tend to be most vulnerable to cyclones.

▼ **Source 1:** Tropical Cyclone Yasi, the largest storm in Queensland's history, made landfall on 3 February 2011 as a Category 5 cyclone near Mission Beach with 285 km/h winds. It generated a 7-metre storm surge and caused severe rainfall, power outages for 150 000 homes, and $500 million damage to agriculture, especially banana and sugarcane crops.

The path of Tropical Cyclone Yasi



Source: News Limited/Mario Lendvai

Source 2: Boats are left crushed against each other at Cardwell in the aftermath of Cyclone Yasi.

What's in a name?

Different places have different names for tropical cyclones. In North America they are known as hurricanes and in Asia they are known as typhoons. They all describe the same process.

In Australia, a cyclone is defined by a low pressure system developing over warm waters that has a wind speed of at least 63 km/h (34 knots) and persists for at least 6 hours. Typically they are associated with severe thunderstorms and rainfalls.

Tropical cyclones are not the same as tornadoes. Tornadoes are much smaller, form over land and can last for up to half an hour.

Why do cyclones spin?

A cyclone's spin is formed as a result of the Earth spinning on its axis. As warm air rises over the warm ocean surface, the low pressure system draws in surrounding air and wind. As the Earth spins on its axis, it causes the winds to whirl around the low pressure system, causing a spinning motion. The force of the Earth's rotation is felt most strongly at the poles and is weakest along the equator. Therefore, for a tropical cyclone to occur, it needs to be at least 500 kilometres away from the equator.

Learning ladder G3.8

Hazard causes

1. Draw a labelled diagram to explain the characteristics of a tropical cyclone.
2. Where do tropical cyclones occur?
3. Source 1: Explain how Cyclone Yasi changed categories on its path.
4. How are cyclones interconnected with other environmental hazards?

Interpreting information

1. Source 2: What impact did Cyclone Yasi have on communities and activities along the Far North Queensland coastline?
2. Source 1: Explain the interconnection between the zone of very destructive winds and the category of cyclone.
3. Source 1: Explain why very destructive winds occur along the coastline.
4. Predict how climate change will impact the frequency and severity of cyclones.

Make it spicy

Describe the *environments* that cyclones usually occur in.

HOW TO

Environment, page 230;
interpreting information, page 428

G3.9

Case study

How is Cyclone Ilsa an example of future storms?

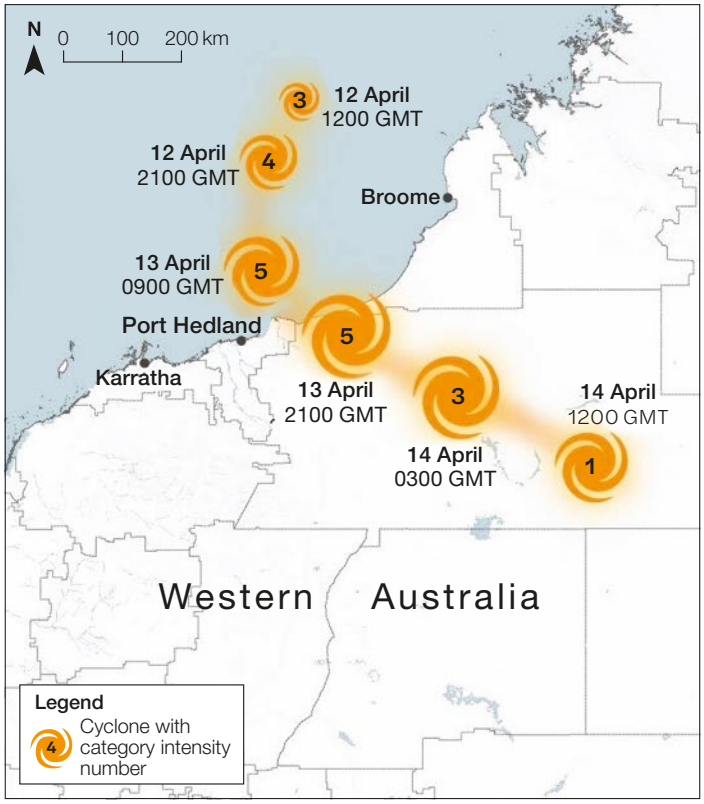
In the 2022–23 season, six tropical cyclones were named, of which three were dangerous category 5 systems and the remainder were classified as severe category 3 storms. The only category 5 tropical cyclone to impact the mainland was Tropical Cyclone Ilsa.

Cyclone Ilsa

While cyclones can occur at any time of year, the tropical cyclone season in Australia is from 1 November until 30 April. As a result of climate change, there are now fewer total tropical cyclones each year, but they tend to be much more intense and cause more damage. Ilsa was so powerful that over a 10-minute period, record-breaking wind gusts of 288 km/h were recorded on Bedout Island off Western Australia's north-western coast.

Ilsa crossed Western Australia's Pilbara coast on 13 April 2023 in a sparsely populated location, which limited the damage to infrastructure. The Pardoo Roadhouse and pastoral stations sustained severe damage. Cyclone Ilsa isolated communities, damaged infrastructure and impacted local fishing and tourism industries. In total, it was estimated that Ilsa resulted in around $4 million in damage and eight deaths caused by the capsizing of two boats, which were caught in the cyclone offshore.

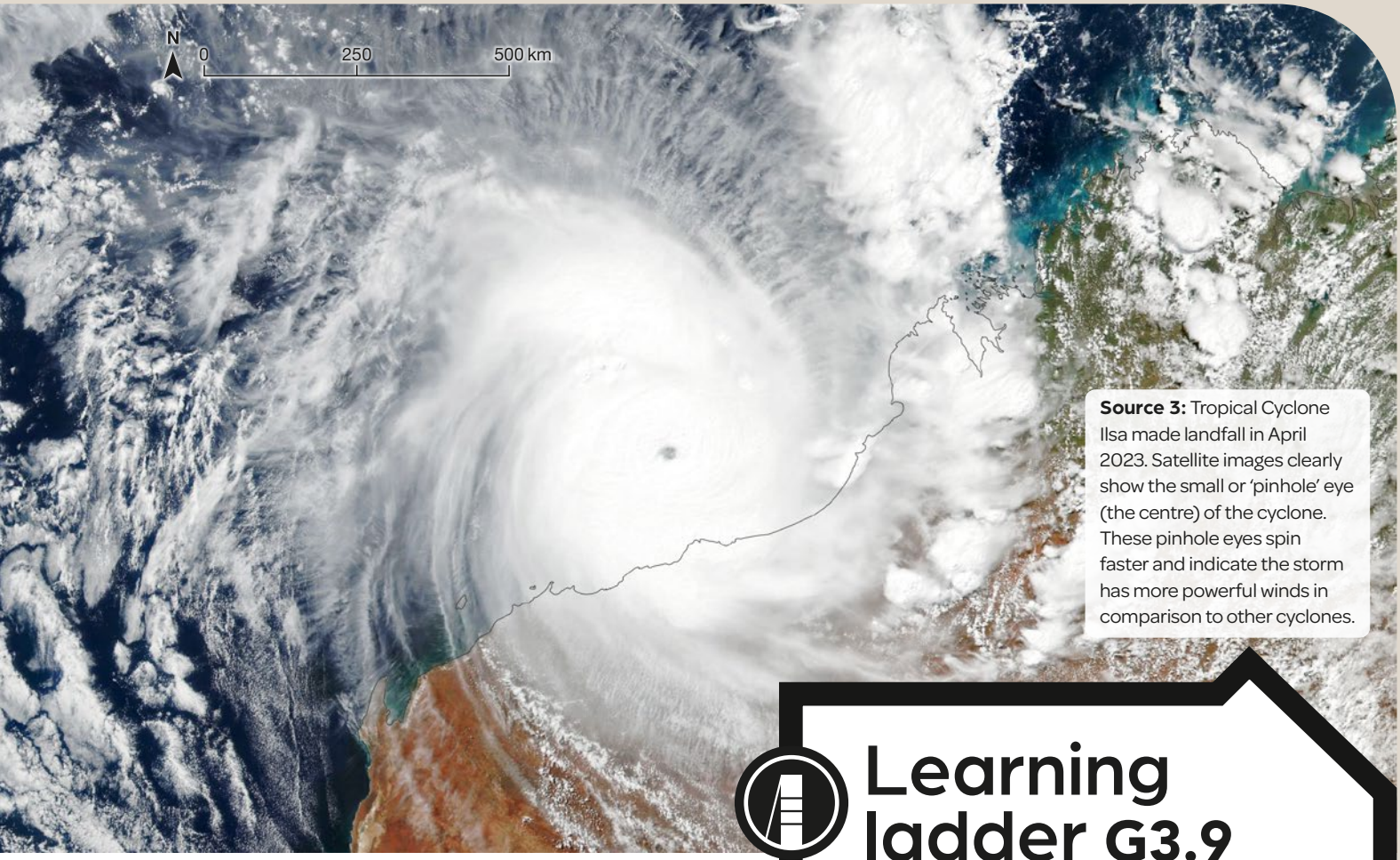
The path of Tropical Cyclone Ilsa



Source: Getty Images

▲ **Source 1:** Tropical Cyclone Ilsa changed categories as it moved across the coast of north-western Australia in April 2023. Category 5 cyclones can produce wind speeds above 280 km/h and cause total destruction.

Source 2: Destruction at Pardoo homestead after Tropical Cyclone Ilsa



Source 3: Tropical Cyclone Ilsa made landfall in April 2023. Satellite images clearly show the small or 'pinhole' eye (the centre) of the cyclone. These pinhole eyes spin faster and indicate the storm has more powerful winds in comparison to other cyclones.

Learning ladder G3.9

Hazard impacts

1. Source 3: Describe what you can see in this satellite image. Why do you think these images are helpful for understanding tropical cyclones?
2. Source 3: Explain how and why the severity of Cyclone Ilsa changed along its path.
3. Source 2: How can photographs be used to quantify impacts of hazard events?
4. What was the impact of Cyclone Ilsa on coastal communities compared with inland communities?

Interpreting information

1. Source 2: Where is this place and what happened?
2. Sources 1 and 3: Describe where Cyclone Ilsa made landfall.
3. Source 2: Explain why damage from such a severe tropical cyclone was limited to a few properties.
4. Are photographs a reliable source of data when analysing the impact of cyclones?

Make it spicy

Describe the *scale* of impact caused by Cyclone Ilsa.

HOW TO

Interpreting information, page 428; photographs, page 436; place, page 226; satellite images, page 437; scale, pages 232, 429

First Nations Peoples

How did First Nations Peoples manage atmospheric hazards?

Variations of weather and climate in Australia can be challenging to forecast, but First Nations Peoples have been able to predict, respond to, and stay safe during extreme weather events for tens of thousands of years.

Predicting cyclones

Cyclones have been forming off the northern coasts of the Australian continent for many millions of years. For the tens of thousands of years that First Nations Peoples have lived on the Australian continent, numerous strategies have been used to predict the arrival of a cyclone.

The cyclone season is considered to begin in early November and last until around April the following year. This predictable phenomenon meant that First Nations Peoples would often begin preparations prior to the season to remain safe.

Source 1: This is an ancient rock painting in what is known as the Cyclone Cave in a remote part of the Kimberley. This cave is home to many different artworks, which have been helping to teach young people about the weather for many thousands of years. This painting and others like it are under threat due to the poor Indigenous Heritage laws in Western Australia combined with unscrupulous mining interests.

Source 2: This is a winged bulldog ant. These are a larger species of ant that lives across large parts of the Australian continent. Like many species of ant, when the weather conditions are just right, the winged males and females leave the ant colony to mate and establish a new colony. Some species of ant can be used to effectively predict rainfall in arid parts of Australia.

In contemporary Australia, often complex computer-aided simulations and algorithms are used to help predict the cyclones. First Nations Peoples have been predicting cyclones with high levels of accuracy without using computers and this was often as a result of making direct observations of the environment. A common observation prior to a cyclone making landfall is to see a larger than usual number of seabirds flying onto the land and roosting in the trees. In this circumstance, the birds are taking shelter in the trees rather than being caught by the cyclone out in the ocean.

Another observation is measuring the sea water along the shore. In some cases, the sea water would increase in temperature, and this was a signal that a cyclone was forming and likely on the way. The colour of the seawater could also indicate a cyclone forming.

Predicting rain in arid regions

Predicting rain in arid regions is a difficult and vital task. One way First Nations Peoples have been predicting rain in these climates is through observing the migration of various species of flying ants. They are a new generation of queen ants that fly to begin their own colonies, and this often occurs prior to often heavy rains.

Learning ladder G3.10

Hazard responses

1. How do First Nations Peoples predict cyclone events without the use of digital technology?
2. Explain how observations of native animal species provided First Nations Peoples with information about hazard events.
3. Compare these strategies with the digital technology many scientists use today to predict hazard events. Discuss how both strategies rely on environmental understanding.
4. Discuss the following statement: 'All people should be educated on environmental hazard indicators to reduce impacts to people and place.'

Making conclusions

1. What seasonal patterns are important for understanding cyclone activity in Australia?
2. In what ways do extreme weather events, like cyclones and heavy rains, affect First Nations Peoples' traditional practices and knowledge?
3. Based on the information about predicting rain through ant migration, what conclusion can you draw about the relationship between wildlife behaviour and weather patterns?
4. How reliable is environmental data at predicting hazard events?

Make it spicy

How do *changes* in your local *environment* indicate potential imminent weather events?

HOW TO

Change, page 228; environment, page 230; making conclusions, page 443

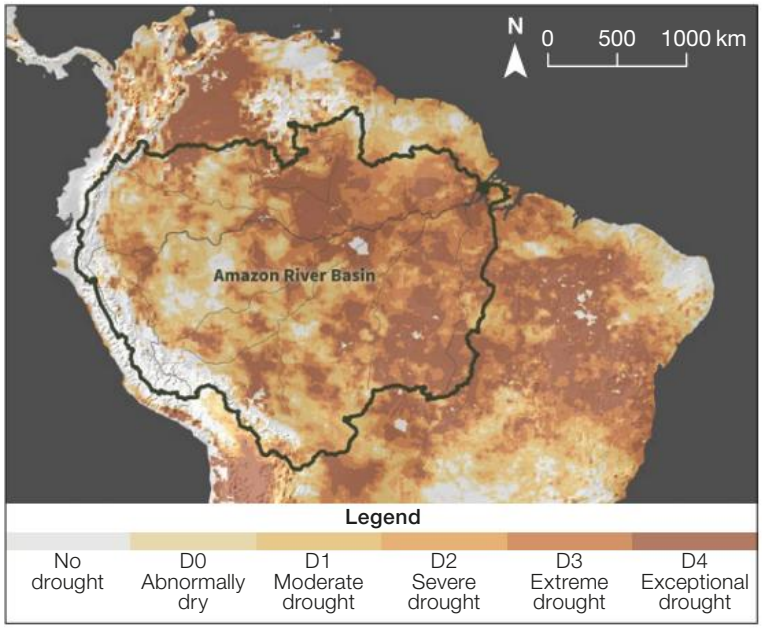
How does climate change lead to more intense and frequent hazards?

Climate change refers to long-term shifts in the Earth's climate patterns, primarily caused by human activities releasing greenhouse gases into the atmosphere. These gases, such as methane and carbon dioxide, trap heat in the atmosphere and lead to global warming. This increases temperatures, changes precipitation patterns, and affects water access around the world, leading to more frequent and severe hydrological and atmospheric hazards, such as cyclones, droughts, floods and bushfires. These hazards are five times more frequent today than they were in 1970.

Heatwaves and drought

Climate change increases average daily temperatures around the world, leading to hotter days and more frequent and intense heatwaves. Heatwaves increase evaporation and dry out soils, making the air above the Earth warm up more quickly and increasing intense heat further. Warmer temperatures also reduce snowfall, decreasing the amount of water that melts and runs downstream of rivers in spring. These factors increase the risk of drought events, as seen in East Africa, which suffered its worst drought between 2020 and 2022, as it had five consecutive failed rainy seasons. This displaced more than 1.2 million people in Somalia alone.

Amazon Basin drought June–November 2023

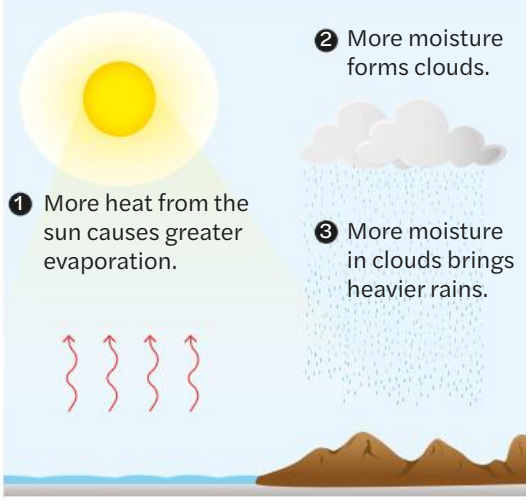


Source: NOAA/Data: WWA Ben Clarke

▲ **Source 1:** A map showing the increase in frequency and intensity of drought periods in the Amazon Basin, which affects environmental processes, habitats and species

Bushfires

Higher temperatures and dry conditions lead to dried-out vegetation, such as dead trees and fallen branches, increasing the risk of bushfires. Dry vegetation and grasses fuel fires, making them move faster and burn more intensely. This has affected places such as Canada, the United States, Siberia and Australia in the last decade alone. Further, as vegetation burns it releases more greenhouse gases and removes trees that absorb carbon dioxide, increasing the rate of climate change around the world. It is predicted that wildfires will be 54 per cent more frequent by 2050.



▲ **Source 2:** A diagram explaining how increased temperatures can result in extreme rainfall

New York City projected flood threat for 2020

New York City projected flood threat for 2100

Source: New York City Department of City Planning

Source 3: A satellite image of New York City illustrating the threat of floods in 2020 (left) and 2100 (right). Most coastal cities and towns are at risk of flooding, due to climate change influencing sea level rise and heavier rainfall.

Tropical cyclones

Warmer ocean temperatures provide more energy to fuel tropical cyclones (known as typhoons in Asia and hurricanes in the Americas), leading to stronger and more destructive storms. Additionally, changes in atmospheric circulation patterns may affect the tracks and intensities of these storms, increasing the likelihood of severe impacts such as storm surges, heavy rainfall and wind damage. The formation of cyclones usually requires a greater temperature difference between the ocean and cooler atmosphere, so as the Earth warms, there is likely to be less frequent cyclones. However, the cyclones that do form will be more severe.

Flooding

Climate change can also disrupt traditional precipitation patterns, leading to more frequent and intense rainfall events in some regions. For every 1°C rise in average temperature, the atmosphere can hold about 7 per cent more moisture. This results in heavier rainfall and more intense storms and cyclones, further increasing the risk of flooding and landslides.

Climate change also accelerates the melting of glaciers and ice caps, contributing to sea-level rise. As glaciers retreat, they release large volumes of meltwater into rivers and oceans, increasing the risk of coastal inundation. For example, the rapid melting of glaciers in the Himalayas poses significant flood risks to communities downstream in countries like Nepal, India and Bangladesh.

Learning ladder G3.11

Hazard impacts

1. What are the potential effects of more intense tropical cyclones on coastal areas?
2. Explain the consequences of glacier melting on sea levels and coastal communities.
3. What percentage increase in bushfires frequency is predicted by 2050?
4. Explain how climate change-induced hazards may impact places differently.

Interpreting information

1. Source 1: Using compass points, identify the location of extreme or exceptional drought in the Amazon Basin.
2. Describe how climate change alters temperature patterns and precipitation distribution on a global scale.
3. Source 3: Explain how climate change will contribute to change in New York City by 2100.
4. Select one country and conduct research on it to predict the impact climate change will have on hazards there by 2050.

Make it spicy

How is climate change *interconnected* with intense and more frequent hazard events?

HOW TO Interconnection, page 227; interpreting information, page 428; PQE, page 438; SHEEPT, page 440

G3.12

Case study

What were the impacts and responses of the 2021 Yarra Ranges storms?

In June 2021, the Yarra Ranges region in Victoria was hit by a severe storm event. The storms, driven by intense low-pressure systems, brought heavy rain, hail and strong winds, resulting in widespread destruction.

The Bureau of Meteorology reported wind gusts exceeding 130 km/h, which led to over 25 000 trees falling and widespread power outages across the region. The impact was severe, with more than 1000 homes experiencing damage or being rendered uninhabitable. Many roads were blocked by fallen trees and debris, causing residents to be trapped in their properties. The storms caused extensive power outages. More than 3000 residents were without power and internet for more than a month. Mobile sites and landline phones were also disrupted, leaving many unable to call 000 for help.

The State Emergency Service (SES) deployed teams to clear debris, restore power and assist with emergency repairs, receiving more than 3500 calls for help in less than 24 hours. The Victorian government provided financial support for recovery efforts, including a $13.8 million recovery grant package for residents in affected council areas. Temporary accommodation was arranged for displaced people, and efforts were made to restore essential services as quickly as possible. An 'Extreme weather event coordinated learning review' was undertaken after the storm to help provide a list of recommendations for what should be done if another major storm event were to occur.

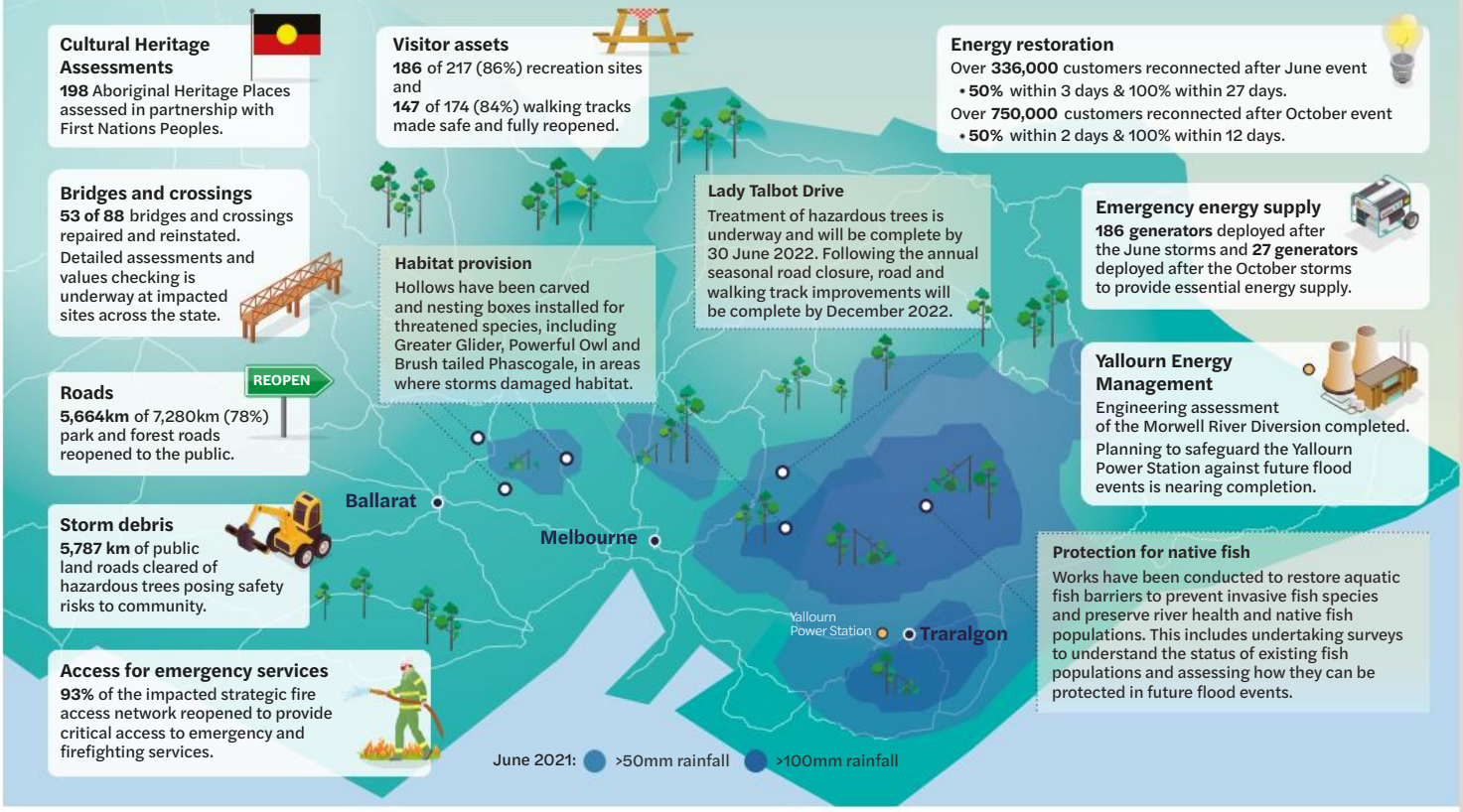
Source 1: In 2021, severe storms resulted in over 220 hectares of Dandenong Ranges National Park being damaged. More than 90 per cent of the tree canopy blew over or snapped off in some areas.

STORM AND FLOOD RECOVERY

Energy, Environment and Climate Change Portfolio

The 2021 June and October storms and floods impacted approximately 3.3 million hectares across Victoria, including 1.97 million hectares of public land managed by the Department of Environment, Land, Water and Planning (DELWP) and its portfolio agencies.

This is a snapshot of our work up to end of April 2022 within the Energy, Environment and Climate Change portfolios, led by regional crews and Forest Fire Management Victoria personnel, to make these areas safe to access and enjoy once again.



▲ **Source 2:** Community recovery from storm events involves many government departments, councils and organisations. Loss of trees and natural habitat due to storms has a direct impact on the local ecosystems. In response to the 2021 storms, more than 100 artificial nest boxes were installed to support native wildlife.

Source: DEECA

Learning ladder G3.12

Hazard responses

1. Describe the immediate actions taken by emergency services after the storm hit.
2. Explain how the State Emergency Service (SES) responded to the storm's impacts.
3. How did community responses to the 2021 Yarra Ranges storms differ from responses to previous storm events in Victoria?
4. In what ways did the government coordinate recovery efforts following the storm?

HOW TO

Making conclusions, page 443; scale, pages 232, 429

Making conclusions

1. What strategy was implemented to clear debris and restore power in the affected areas?
2. Explain how installing artificial nest boxes benefits local ecosystems.
3. What impact might the $13.8 million recovery grant package have on the residents affected by the 2021 Yarra Ranges storms?
4. You have recently been elected to the Yarra Ranges Council. What strategies would you put in place for residents to reduce the risks of future storms?

Make it spicy

Describe the *scale* of the response for the 2021 storms.

How do I conduct a good inquiry?

Throughout the chapter you have developed knowledge and understanding of hydrological and atmospheric hazards. Background knowledge is important as it helps you make connections to new information, ask better questions and consider different perspectives. As you were progressing through the chapter you have been gathering information through highlighting, note taking or responding to the Learning ladder. It is now time to start planning your inquiry! Refer to pages 452–8 for a step-by-step guide to this process.

Throughout the chapter, a range of case studies was presented to apply your learning to real-life events. Review these pages and select a case study to build your inquiry around.

- How do bushfires impact Victoria?, page 318
- What were the causes and impacts of the 2022 Lismore floods?, page 324
- How is Cyclone Ilsa an example of future storms?, page 328
- How did First Nations Peoples manage atmospheric hazards?, page 330
- What were the impacts and responses of the 2021 Yarra Ranges storms?, page 334

For your selected case study, complete a 'see, think, wonder' to help build curiosity and develop ideas you may cover in your inquiry.

Remember: A good inquiry will be focused on an aspect of the topic that interests you. It is more than just a research task that you present as a PowerPoint; it is a genuine investigation into something you are wondering about.

See
What do you see?
What are the human and physical characteristics?

Think
What do you think about that?
Where is it?
Why is it there?
When did it occur?

Wonder
What questions does this raise in your mind?
What else do you need to know to understand what is happening here?
What are other people saying about this?

Write down five observations you make when viewing the data presented.

The following is a list of example open-ended questions which may help you to develop your inquiry.

Hydrological and atmospheric hazards

- **Descriptive question:** *In what ways do hydrological hazards, such as floods, droughts and tsunamis, impact both natural landscapes and human communities?*
- **Procedural question:** *How does a cyclone form and what impacts does it have?*
- **Comparative question:** *How do the impacts of floods differ from the impacts of droughts?*
- **Evaluative question:** *To what extent can early warning systems reduce the damage caused by hydrological and atmospheric hazards?*

Level up!

Throughout the chapter you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to attempt new skills. When planning your inquiry, consider how you may integrate geospatial technology into your fieldwork or how you may explore a range of perspectives. Use the How-to chapter to support you in planning and research.

G4

Liveability

WHY DO PEOPLE MOVE TO COASTAL AND RURAL TOWNS? 366

WHY IS KYIV AN UNSAFE PLACE TO LIVE? 360

WHERE WILL SEA-LEVEL RISE AFFECT LIVEABILITY? 370

G4.0

How can I understand the liveability of places?

In comparison with other countries, Australia generally has good access to education, health care, transport, open spaces and other key elements that make our country liveable. In 2023, Melbourne and Sydney were ranked in the top 10 most liveable cities in the world.

Learning ladder

The Learning ladder lists the knowledge and skills you will develop throughout the year, with five levels of increasing difficulty. By mastering foundational knowledge and skills at the lower levels, you will build a solid understanding that prepares you to tackle more advanced concepts and skills as you progress towards the top.

Steps in knowledge progression	Measuring liveability	Facilities and services	Environment	Planning and collecting	Representing information
5	I can compare the liveability of places using criteria.	I can assess the impact of inaccessible facilities and services.	I can use environmental quality to evaluate liveability.	I can use geospatial technology to record data.	I can follow ethical practices when working with data.
4	I can use criteria to measure liveability.	I can explain the distribution of facilities and services.	I can assess environmental challenges.	I can gather primary data.	I can use geospatial technologies to create maps.
3	I can explain how characteristics influence perceptions of places.	I can compare access to facilities and services.	I can explain how environments impact liveability.	I can gather information from reliable secondary sources.	I can use geographic conventions to construct maps.
2	I can describe liveability.	I can describe the distribution of facilities and services.	I can describe environmental characteristics.	I can plan an inquiry.	I can represent data and information.
1	I can identify the characteristics of places.	I can determine the location of facilities and services.	I can identify environments.	I can ask open-ended questions.	I can select data relevant to a question.
	Liveability			Geographical inquiry	

Source 1: A tent city of homeless people was established in Sydney's Martin Place for most of 2017 before it was dismantled. While Australia has some of the most liveable cities in the world, liveability is not enjoyed by all.

I can use geographical concepts to structure data analysis.	I can evaluate ethical considerations.	I can consider perspectives to evaluate strategies.	I can analyse the implications of phenomena.	5
I can predict change to patterns.	I can assess the reliability of data.	I can design strategies.	I can explain interconnections with data.	4
I can explain distributions and patterns.	I can write evidence-based conclusions.	I can predict the impact of a strategy.	I can support explanations with data.	3
I can describe distributions and patterns.	I can describe the impact of geographical phenomena.	I can explain a strategy.	I can explain the relevance of information.	2
I can read graphs and maps.	I can answer geography questions.	I can describe a strategy.	I can describe phenomena using geographical terms.	1
Interpreting information	**Making conclusions**	**Strategies for action**	**Presenting ideas**	Steps in skill progression
	Concluding and decision-making		**Communicating**	

G4.1

Why do we live where we do?

Liveability is a judgement about what a place is like to live in. According to the Australian Urban Observatory (AUO), a livable community is one that is 'safe, socially cohesive, inclusive and environmentally sustainable'.

What we value

People value places that offer freedom and the protection of their human rights; personal safety; the availability of employment, and essential goods and services such as health, transport and educational facilities; and an attractive or healthy environment. If a place provides the things we need and satisfies most of the things we want, then we consider it to be more **liveable**.

Attempts have been made to rate or rank the liveability of large cities in Australia and across the world. Organisations use a range of **objective** and **subjective factors** or 'criteria' to judge liveability – they survey people to create these rankings. Objective factors are those that can be measured using numerical data; for example, the number of services in a region. Subjective factors are personal beliefs or perceptions, such as community feel or work–life balance. Liveability rankings are usually very general and do not account for the perspectives or opinions of individuals at a local scale.

Choosing where to live

The ideal place for a family with young children will be different from the preferred location of an older couple or a university student, because each represents a stage of life with different needs and lifestyle preferences. Medical care might be a priority for the wellbeing of an elderly couple; entertainment and sports facilities may be a high priority for teenagers and young adults; and schools could be a high priority for a young family. The importance of different factors will vary between people – we call these our **perceptions**. Some factors, such as safety and freedom, will be important for everyone, and our influences will change over time.

Not all people have a choice about where they live, and some people will remain in the same place for their whole lives. People who are able to make choices will be influenced by their own situation and the qualities of different places.

Source 1: Liveability factors in a community environment

Services
Liveability increases with good access to services. Local shopping centres give people access to supermarkets, shops and restaurants, as well as services such as doctors and hairdressers. Good access to public transport and an efficient road system help people to move around.

Social cohesion and connection
A key factor in making a place liveable is feeling part of the community. People often choose to live near family members and friends, or to find areas where people with similar interests live. People migrating from overseas to an Australian town or city might be attracted to a town or city where other people from their cultural background live.

What affects the liveability of places?

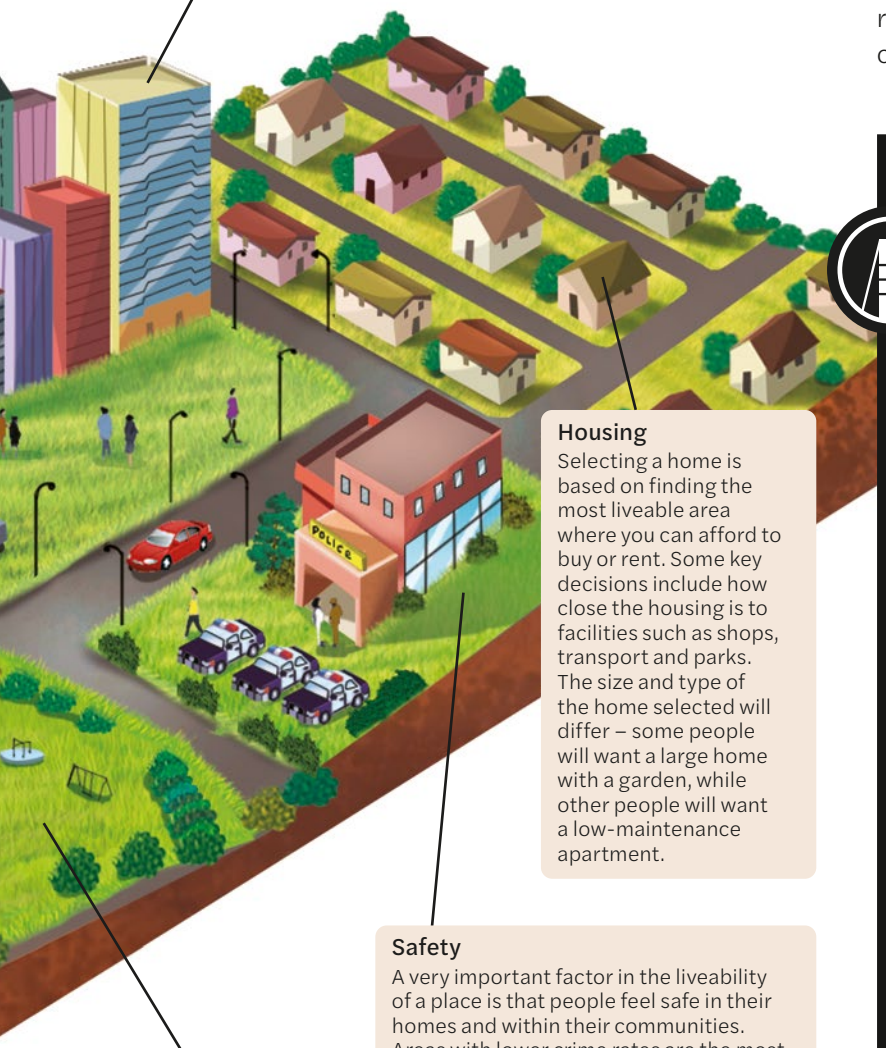
Environmental factors: The environment is our total surroundings, the physical and human features. An arid or a polluted environment will be perceived as less liveable than a forested location with clean air.

Political factors: Political stability is important for liveability because it means a society is not interrupted by conflict. Many of the least liveable places in the world are in conflict zones. Political policies can affect human rights to a decent income, to practise culture and religion, and to freedom of movement and speech.

Economic factors: The level of development of countries affects the capacity to provide the basic needs of a population. The poorest countries in the world are perceived as less liveable.

Social factors: People value interactions with others in society, particularly those with a common cultural, language or working background. High standards of behaviour, acceptance of cultural diversity, low crime rates, and perceptions about freedom and safety are considered important features of highly liveable places.

Employment
People of working age need to live in a place where they can access employment. The most jobs are generally in capital cities and larger towns, so many young people move from country towns to cities to study and to find employment. Mining towns with very few facilities and services can also be a magnet for workers because they offer high-paying jobs.



Housing
Selecting a home is based on finding the most liveable area where you can afford to buy or rent. Some key decisions include how close the housing is to facilities such as shops, transport and parks. The size and type of the home selected will differ – some people will want a large home with a garden, while other people will want a low-maintenance apartment.

Safety
A very important factor in the liveability of a place is that people feel safe in their homes and within their communities. Areas with lower crime rates are the most liveable. Safety is even more important in countries that suffer from war and conflict.

Environment
Environmental quality affects the liveability of places, and the quality of life for people living there. Factors that contribute to the quality of the environment are the climate, the quality of the air and water, the availability of parks and open spaces, and how it looks – the **aesthetics**.

Learning ladder G4.1

Measuring liveability

1. Source 1: List the factors that make a town or community more liveable.
2. Define the term 'liveability'.
3. Why would people consider Melbourne a liveable place? Who might disagree?
4. For the list created in Question 1, rank your list according to the factors that make your community liveable.

Planning and collecting

1. Source 1: Identify three factors about yourself that would influence the liveability of places if you had a choice to make.
2. Create three survey questions you would ask your local community if investigating the inquiry question, 'What factors make this place liveable?'
3. What are international liveability rankings? Suggest reasons why cities such as Sydney and Melbourne like to rank highly on global liveability rankings.
4. Use the questions created in Question 2 to conduct a survey on your peers. Are there differing opinions?

Make it spicy

Outline two features of your local *place* that reduce its liveability.

HOW TO Place, page 226; planning and collecting, page 410

G4.2

Where do people live in the world?

Ninety per cent of the world's population lives on just 10 per cent of all the available land on Earth. Some places on Earth – such as deserts, high mountains and polar regions – are inhospitable, and it is difficult for humans to live there.

Living on Earth

The most liveable places on Earth are between the Arctic Circle and the Antarctic Circle, where the temperatures are warm enough to grow food.

Antarctica is the only continent that does not have a permanent population. It is the coldest place on Earth. Scientists spend time on Antarctica, but mainly during the summer months, when there are more opportunities to work outside.

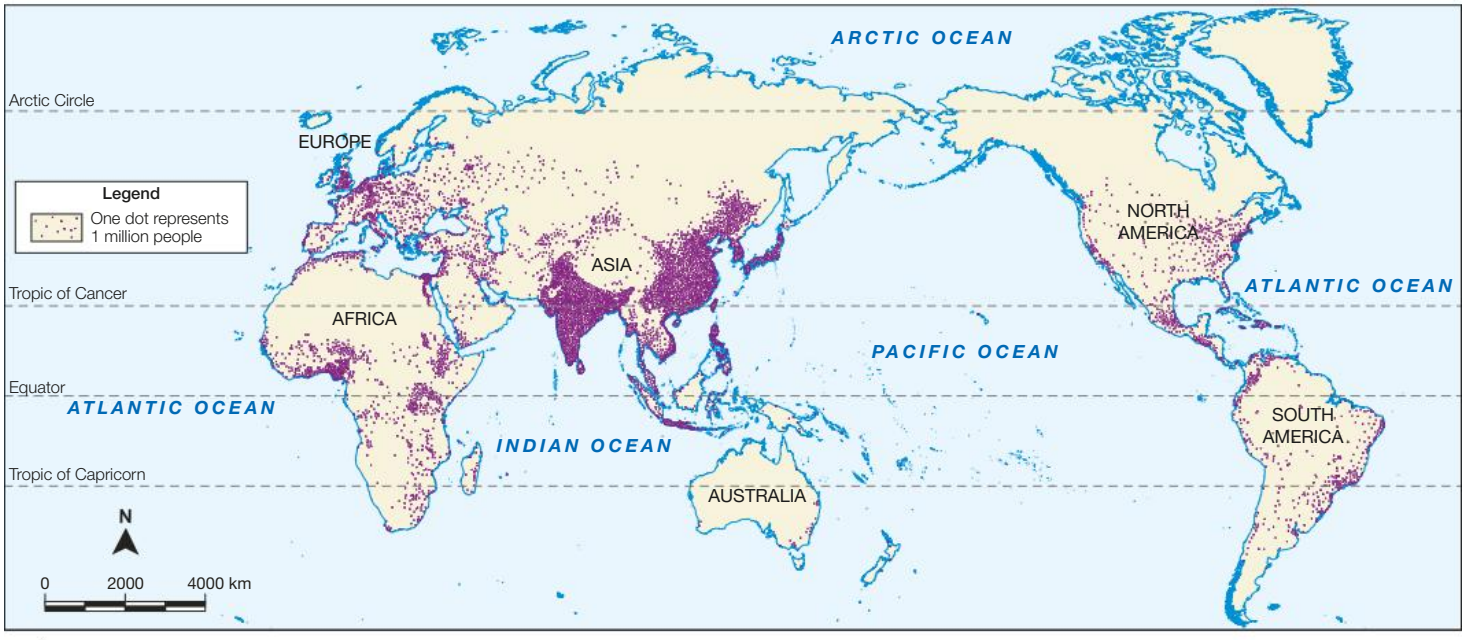
The world's population is 7.8 billion people, and we inhabit six of the seven continents. Asia has the highest population, at 4.5 billion people. Sixty per cent of the world's population lives in Asia, and 36 per cent of the world's people live in just two countries: China and India.

Population density

The **population density** of a region is a measure of how crowded that place is. It is calculated by dividing the population by the area of the region. For example, the continent of Australia has a population of 25 000 000, and an area of 7 692 024 square kilometres, so its population density is 3.25 persons per square kilometre.

Population density varies from continent to continent. Australia has the lowest population density of all the populated continents. Asia has the world's highest population density, with 146 people for every square kilometre of land. On average, the world's population density is about 15 people for every square kilometre of land on Earth. However, about 90 per cent of the Earth's population lives on just 10 per cent of the land – mainly along coastlines and near sources of freshwater.

World population distribution



Source 1: World population distribution dot map

Source: Matilda Education Australia

Source: Matilda Education Australia

▲ **Source 2:** World environments shown on a satellite image

Least liveable regions

More than half of the Earth's land mass consists of regions with harsh conditions that make it difficult for humans to survive. This is why **polar** regions, **deserts** and high mountains have very low population densities. Every continent has low population density regions:

- Africa: Northern half contains the Sahara Desert.
- Europe: Far north is in the frozen Arctic Circle.
- Asia: Central Asia has the Himalayan Mountains and desert, northern Asia has the Arctic Circle.
- Australia: All of Central Australia is desert or semi-desert.
- North America: Northern tip is in the Arctic, plus there are deserts in the south-west.
- South America: Northern half contains the Amazon Rainforest.

Source 3: Reindeer graze in the tundra around a nomadic yurt inside the polar circle in Asia.

Learning ladder G4.2

Measuring liveability

1. Source 3: Identify the physical and human characteristics of this place.
2. Describe two characteristics that might lower a place's liveability.
3. Explain why Antarctica is the only continent with no permanent human population.
4. Source 2: Why is environment an indicator of liveability?

Interpreting information

1. Source 1: Which continent has the highest population density?
2. Source 1: Describe the spatial distribution of the world's population using the PQE method.
3. Source 2: In what ways does Australia's environment contribute to its low population density?
4. Source 1: How will the pattern shown on this map change as the world's population grows?

Make it spicy

Create a pros and cons list for living in a desert *environment*.

HOW TO

Environment, page 230; interpreting information, page 428; PQE, page 438; SHEEPT, page 440

G4.3

How do we measure liveability?

Measuring liveability is difficult as we all have perceptions about what makes a place great. Some common characteristics of a liveable city are that it is safe and comfortable, with good services available to the population.

Measuring liveability

Every person will have their own view about what makes a place more liveable or less liveable. A person's ideas about the liveability of a place will vary according to their age, background, income and lifestyle choices.

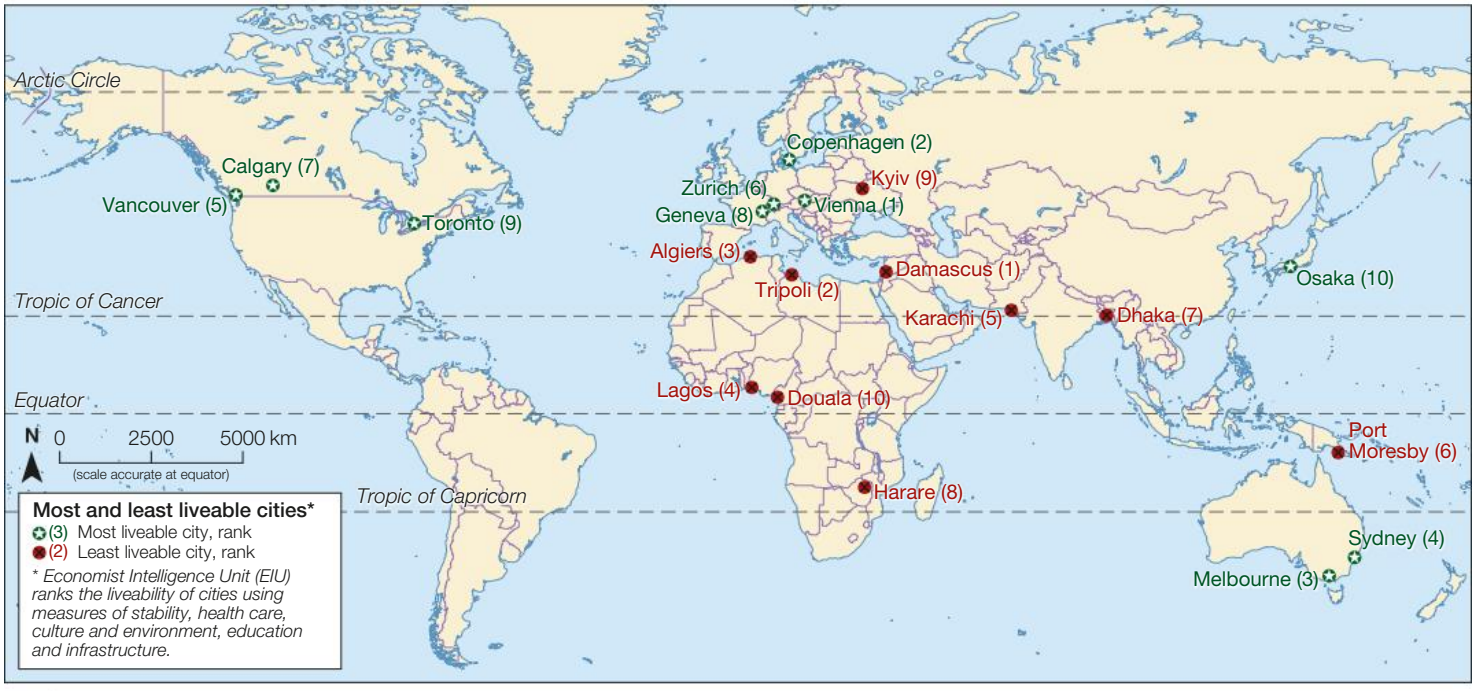
Every year the Economist Intelligence Unit (EIU) publishes a Global Liveability Index, where it ranks 140 major cities around the world from most liveable to least liveable. Austria's capital, Vienna, was ranked the most liveable city in 2022–24. Melbourne held 1st position from 2011 to 2017. Melbourne was ranked 4th in the world in 2024, closely followed by Sydney in 7th position. Adelaide, Perth and Brisbane were also rated in the top 20 most liveable cities. Damascus in Syria was assessed as the least liveable city from 2013 to 2024 because of the **civil war** that raged there until 2024.

Liveability criteria

The EIU uses these considerations (or criteria) to determine the liveability of places. Each consideration is given a percentage to show its importance.

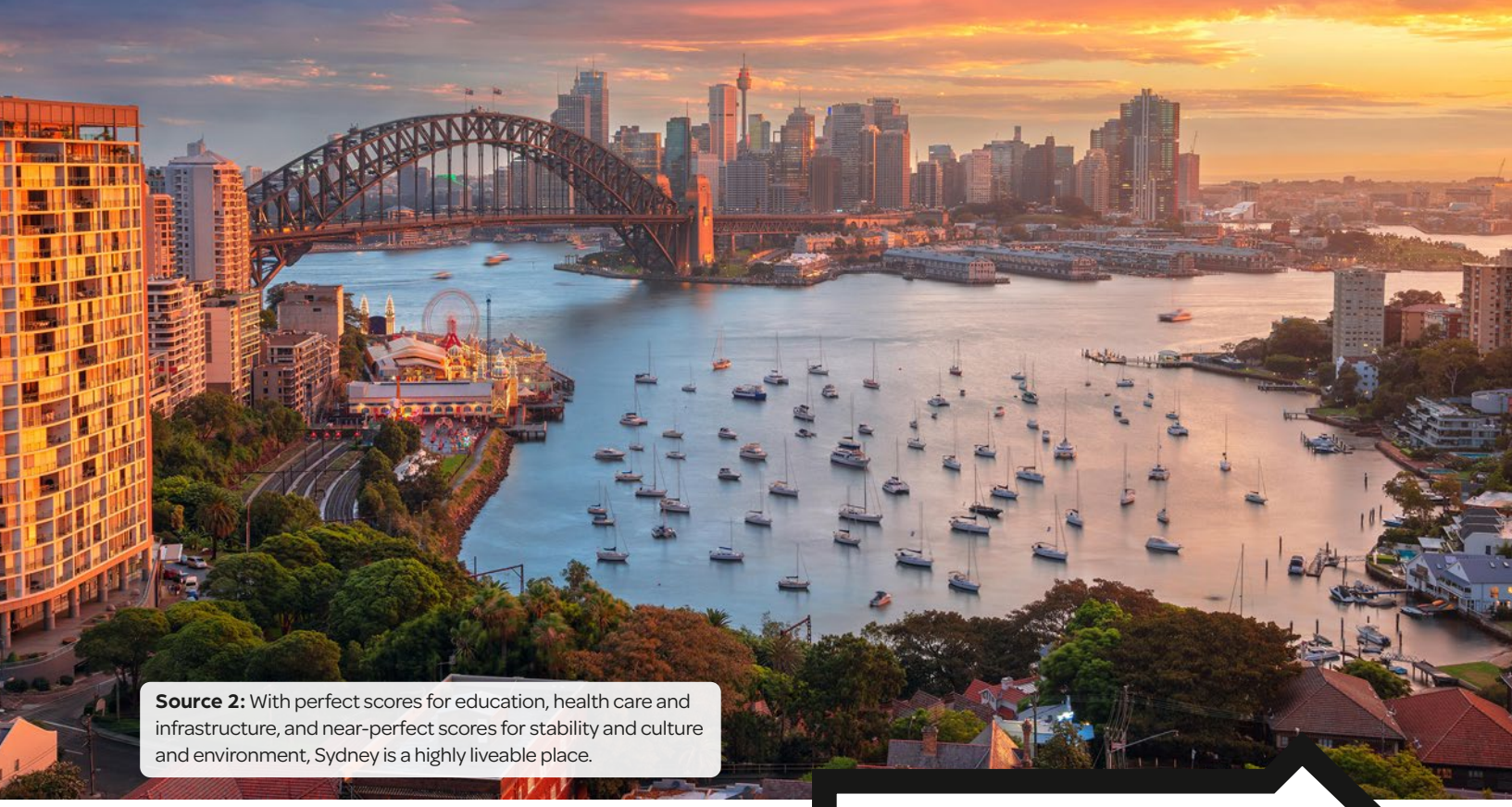
1. **Stability** (25%): Extent of small and violent crime, the threat of terrorism and military and civil conflict
2. **Health care** (20%): Health standards, the availability and quality of health care and the availability of medicine

World's most liveable and least liveable cities, 2023



Source: Matilda Education Australia

Source 1: The 10 most liveable and least liveable cities in the world, from the 2023 Global Liveability Index



Source 2: With perfect scores for education, health care and infrastructure, and near-perfect scores for stability and culture and environment, Sydney is a highly liveable place.

3 **Culture and environment** (25%): The comfort of the climate, level of goods and services, evidence of corruption and censorship, and availability of sporting and cultural activities

4 **Education** (10%): Education standards and the availability and quality of private education

5 **Infrastructure** (20%): Quality of roads, international and public transport, housing, water, energy and telecommunications

Source 3: Damascus is the capital city of Syria, in the Middle East. It was judged the world's least liveable city for 2023 and for the decade before that, because of the civil war and its effects. It scored poorly in all categories. Education has suffered greatly, with schools and universities closing. The destruction of hospitals has made it nearly impossible to cope with the constant influx of patients from the war zone. Infrastructure and environmental damage has further reduced liveability in Damascus.

Learning ladder G4.3

Measuring liveability

1. Source 2: Identify two natural characteristics of Sydney.
2. Source 2: How do the characteristics outlined in Question 1 contribute to the liveability of Sydney?
3. Source 3: Explain the difficulties faced by Damascus on improving liveability for its citizens.
4. Review the five criteria developed by the EIU. Rank them according to the importance you would give each category. Justify your response.

Presenting ideas

1. List the criteria used to judge the liveability of world cities according to the EIU.
2. Why are the criteria listed in Question 1 relevant for measuring liveability in different countries?
3. How have Australian cities fared in the 2023 Global Liveability Index?
4. Explain the interconnection between education and long-term liveability of a place.

Make it spicy

In what ways do the characteristics of a *place* influence the liveability for its residents?

HOW TO Place, page 226; presenting ideas, page 449

G4.4

Case study

Why is Vienna the world's most liveable city?

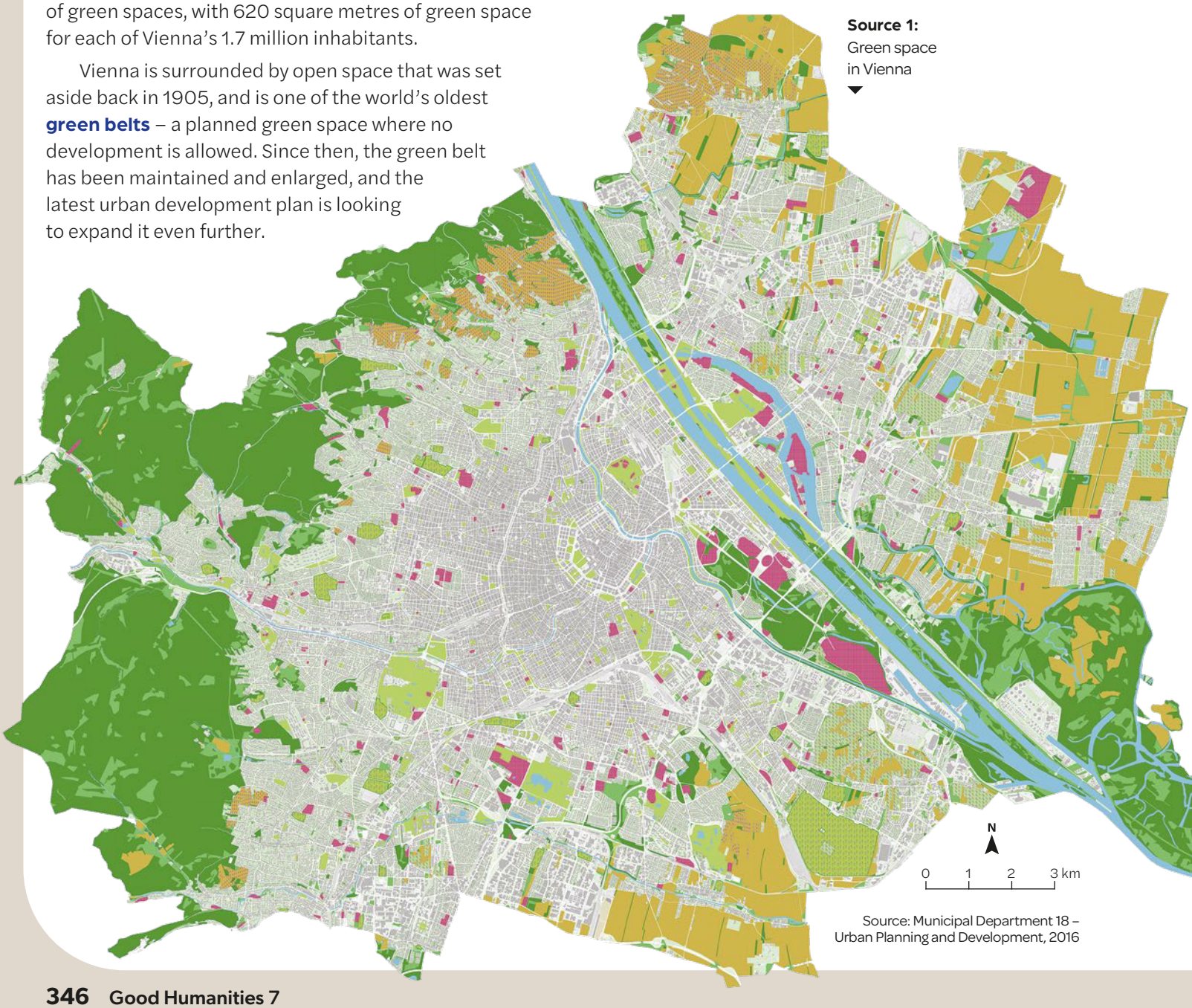
Vienna was judged the world's most liveable city for 2018, 2019, 2022, 2023 and 2024, after a comparison of 172 cities. It is one of the safest cities in Europe, and also offers great health care and education, as well as cheap and efficient public transport.

Vienna is one of the greenest and cleanest large cities in the world. Half of the metropolitan area is made up of green spaces, with 620 square metres of green space for each of Vienna's 1.7 million inhabitants.

Vienna is surrounded by open space that was set aside back in 1905, and is one of the world's oldest **green belts** – a planned green space where no development is allowed. Since then, the green belt has been maintained and enlarged, and the latest urban development plan is looking to expand it even further.

Green space uses in Vienna

Source 1: Green space in Vienna

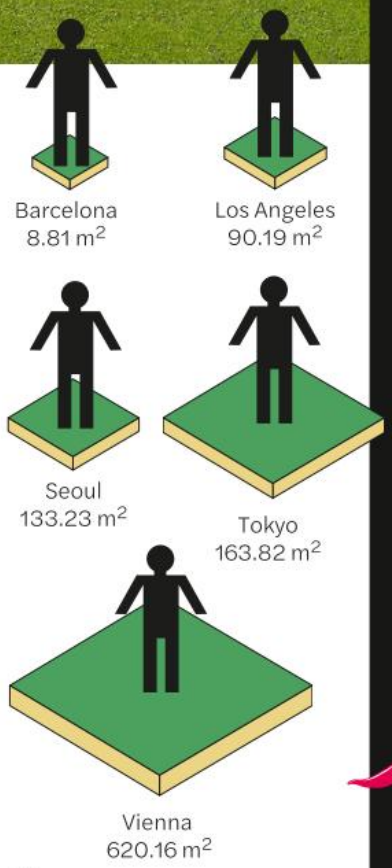


Source: Municipal Department 18 – Urban Planning and Development, 2016

Source 2: The large park at Schönbrunn Palace, Vienna, was opened to the public in 1779. The gardens and the palace were named a World Heritage Site in 1996. Urban parks and gardens provide safe routes for walking and cycling, and are good places for other recreation, such as picnics. Parklands play a critical role in cooling urban areas where buildings and roads heat up the environment.

Learning ladder G4.4

Green spaces such as parks, sports fields, forests, meadows and wetlands give residents a chance for physical activity and relaxation. Trees produce oxygen, and help to filter out harmful air pollution that is usually a problem in large cities (see page 364).



Source 3: Green space in cities around the world per capita

Source: Humanitarian Data Exchange, 2018

Green space uses

- Forest
- Meadows
- Fields
- Vineyards
- Green houses and plantations
- Cemeteries
- Parks and gardens
- Outdoor sports facilities and public pools/campsites
- Bodies of water

Environment

1. Source 1: Where are the largest areas of green space found in Vienna?
2. Source 3: Look carefully at the pictograph and answer the following questions.
   - **a** How many square metres of green space per person does each resident of Vienna have?
   - **b** Which city in the pictograph has the least amount of green space per resident?
3. How do green spaces improve the liveability of a place?
4. Predict what challenges Vienna may face in the future in maintaining liveability for citizens.

Making conclusions

1. Outline the location of Vienna.
2. Source 2: Describe how the pictured gardens improve liveability in Vienna.
3. What are green belts and why are they important to liveability?
4. Consider the statement, 'Vienna is the world's most liveable city.' How reliable is the data used to make this claim?

Make it spicy

Explain why *sustainability* is an important factor when assessing long-term liveability of a *place*.

HOW TO

Making conclusions, page 443; photographs, page 436; place, page 226; space, page 224; sustainability, page 234

Where do First Nations Peoples live?

First Nations Peoples have been thriving in the various land and waterscapes across the Australian continent and adjacent islands for tens of thousands of years. With British invasion, colonisation, assimilation and genocide, the First Nations population distribution changed significantly.

Initially, with the introduction of European diseases, the First Nations population dramatically fell due to the incredibly high fatality rates. This combined with the Frontier Wars meant the remaining population reduced further. As the colonists continued to expand throughout the continent and adjacent islands, the violence and dispossession continued.

After some time, concerning reports began to be received in England and there was a push to create 'Protectorates', areas where First Nations people would be forcibly moved to in the hope this would reduce the violence. The largest Protectorate was the Port Phillip Protectorate established by Lord Glenelg in 1838 over the area of contemporary Victoria.

The Protectorate was run by a series of Protectors of Aborigines and was eventually abolished in 1849 after extended pressure from squatters to move into and seize the Protectorate's lands.

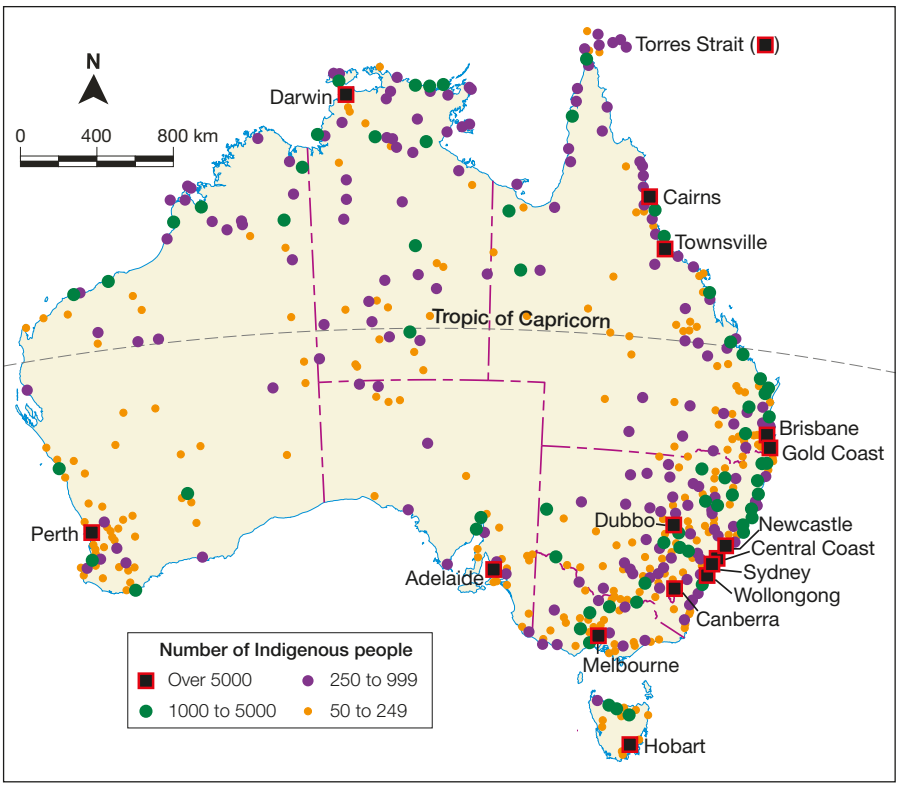
The failure of the Protectorate scheme meant that alternative options had to be implemented. This involved the establishment of Missions and Reserves across much of Australia where First Nations people were forced to live. These were often poorly serviced and resulted in incredibly poor living conditions.

For First Nations people who escaped the Missions and Reserves, there were few options available to return to their ancestral lands.

By this time, many had been seized by European colonists and much of the original food, medicine and building materials had been destroyed to make way for large agricultural concerns. Returning First Nations people were often met with lethal violence from the newly established squatters.

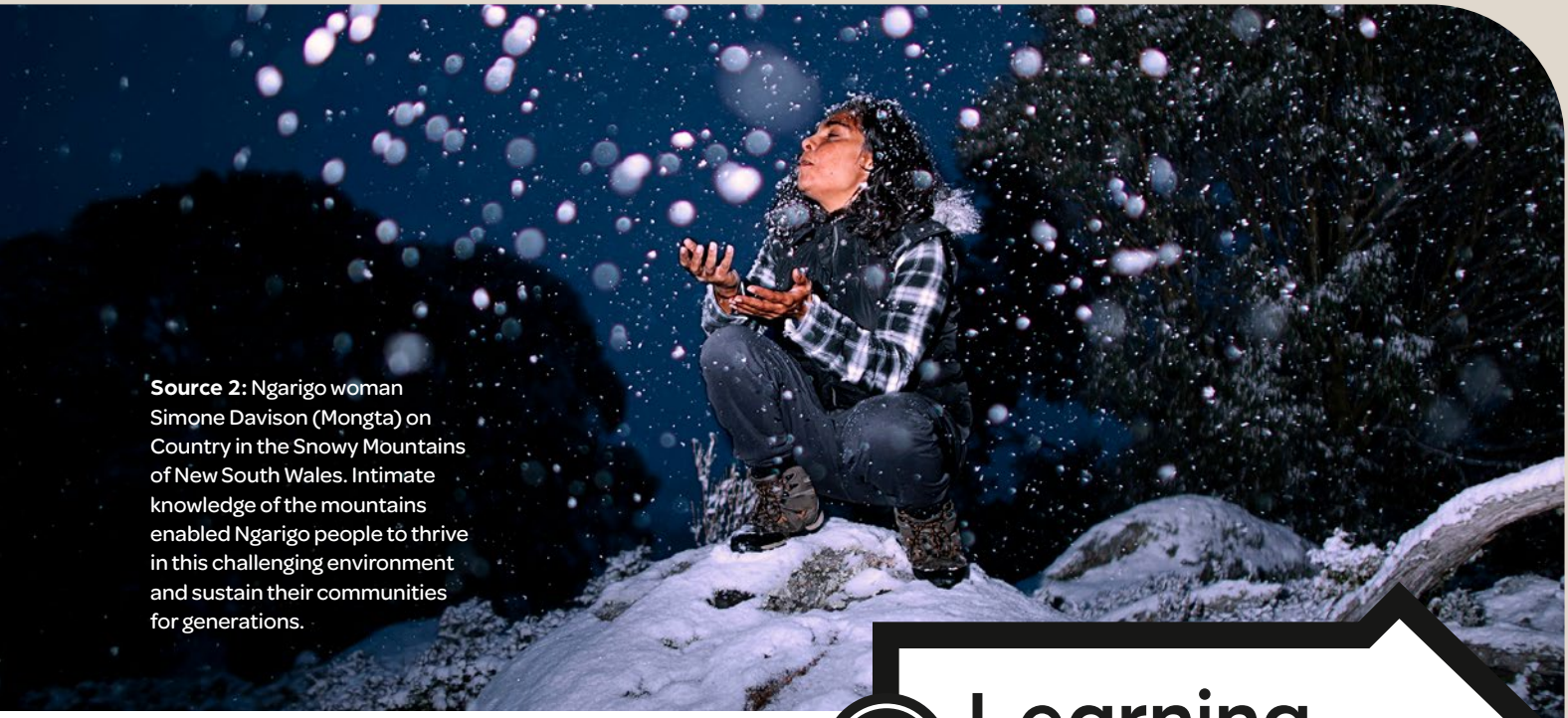
This meant that many First Nations people moved to the newly established colonial towns and cities in order to find food and work. Existence in these places was often precarious, with insecure housing, food and access to services.

Australia population distribution of First Nations Peoples, 2018



Source: Matilda Education Australia

Source 1: Population distribution of First Nations Peoples in Australia



Source 2: Ngarigo woman Simone Davison (Mongta) on Country in the Snowy Mountains of New South Wales. Intimate knowledge of the mountains enabled Ngarigo people to thrive in this challenging environment and sustain their communities for generations.

Source: © Lisa Hogben

Contemporary Australia

In contemporary Australia, it is not uncommon for First Nations people to live off Country; that is, away from their ancestral lands. This as an ongoing legacy of the colonisation and genocide in Australia where First Nations people were forced to move away from Country. For those who do still live on Country, liveability is not just considered in terms of access to resources, services, shelter and other factors, but rather, is considered in terms of the connections to the Dreaming stories, songs, dances and ceremonies. Through being able to continue these important practices, First Nations people are able to engage with cultural contexts which are many tens of thousands of years old and support the health and wellbeing of individuals, communities and Country, all of which impact liveability.

▼ **Source 3:** Children dig for honey ants near Alice Springs.

Learning ladder G4.5

Measuring liveability

1. What characteristics of place can be associated with the health and happiness of First Nations communities?
2. In what ways can the concept of liveability extend beyond just physical resources to include cultural connections?
3. How do historical events such as colonisation shape current perceptions of liveability among First Nations Peoples?
4. How do the characteristics of contemporary urban areas differ from those of traditional lands for First Nations Peoples?

Interpreting information

1. Source 2: What is meant by being 'on Country'?
2. Source 1: Where do First Nations people live in contemporary Australia?
3. Source 1: Explain the distribution of First Nations Peoples.
4. Predict how climate change may impact the distribution of communities in central Australia in the future.

Make it spicy

Research ways recent *changes* in policies regarding land rights have affected the liveability of First Nations communities.

HOW TO

Change, page 228; interpreting information, page 428; SHEEPT, page 440

Why do most Australians live in cities?

Australia is one of the most urbanised countries in the world, with 89 per cent of our population living in urban places (towns and cities) and more than 66 per cent living in the metropolitan area of its eight capital cities. Large cities attract people because of the employment opportunities, services and facilities, and the lifestyle they offer. Around 75 per cent of all jobs are based in Australia's major cities.

The liveability of large cities

Cities offer people a large range of:

- educational facilities (public and private schools, universities and training colleges)
- shops and businesses
- entertainment and cultural facilities (sporting arenas, theatres, cinemas, museums and art galleries)
- transport networks (airports, major highways and railway lines)
- health services, including specialists and large hospitals.

Inequalities in large cities

As the populations of Australia's largest cities have risen, liveability has declined for some groups. By 2031, commute times are predicted to be two hours a day. Open spaces have been replaced with housing, particularly on the rural–urban fringes, where services and facilities cannot keep pace with population growth. Cities offer people more facilities, better access to transport, more health and education options and a variety of employment opportunities.

Source 1: Predicted growth of Australia's capital cities

	Growth[1]	2014	2034[2]	2054[2]
		Population (,000)	Population (,000)	Population (,000)
Adelaide	1.06%	1304.6	1604.7	1843.7
Brisbane	1.92%	2274.6	3340.6	4406.6
Canberra	1.70%	386.0	N/A	N/A
Darwin	2.30%	140.4	175.5	212.6
Hobart	0.67%	219.2	250.4	266.6
Melbourne	1.95%	4440.3	6238.1	7982.4
Perth	3.05%	2021.2	3451.8	4923.0
Sydney	1.50%	4840.6	6432.6	7966.4

Source: mccrindle

1 Annual population growth rate between 2009 and 2014

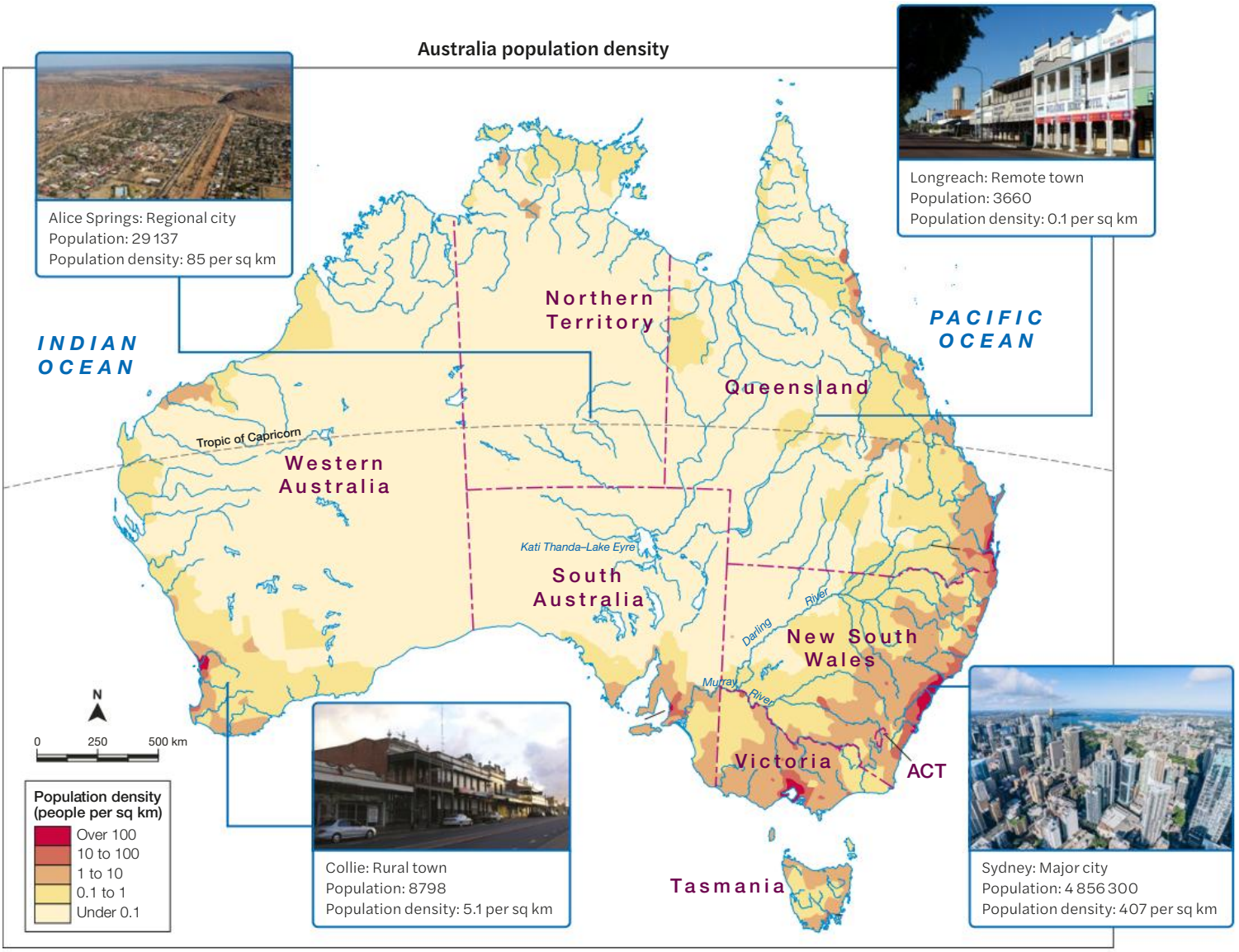
2 Estimates based on medium levels of fertility, overseas migration, life expectancy and interstate migration flows

Rural liveability

Rural settlements are outside major urban areas. In Australia, they vary from isolated cattle stations, mining centres and farms, to small towns with a general store, to large service centres that support a number of smaller country towns. Living in rural environments has the advantage of more open space; less traffic, noise and pollution; a greater sense of safety; and cheaper housing and living costs. With fewer people there is generally a stronger sense of local community developed through sporting and community clubs and organisations such as rural fire brigades. The disadvantages of living in a rural area are fewer job opportunities, and less access to services such as schools, shops, public transportation and doctors, and utilities such as power, water and internet. Many young people in rural areas move to boarding schools and universities in major urban centres to access a wider range of education options and improved job opportunities.

Remote settlements

Remoteness refers to distance from other places and access to goods and services. People live and work in remote places where basic services such as water, power and health care are difficult to supply. First Nations Peoples account for 15 per cent of all people in remote areas and 49 per cent of very remote populations in Australia. Many remote settlements have cultural importance: Yuelamu in the Northern Territory is located on the traditional lands of the Anmatyerre and Warlpiri peoples. Providing basic services to remote settlements is difficult and expensive. It takes residents of Yuelamu 4 hours to drive to Alice Springs.



▲ **Source 2:** Australia population density

Source: Matilda Education Australia

Learning ladder G4.6

Measuring liveability

1. Source 2: Identify the characteristics of Collie.
2. Source 2: Rank the four example towns/cities shown according to population density. Describe how population density is interconnected with liveability.
3. Source 2: Why do you think people choose to live in remote locations such as Longreach? What are some advantages and disadvantages of living in remote locations?
4. Why do inequalities exist between places?

Representing information

1. Source 1: Which capital city is expected to be the most populous by 2054?
2. Source 1: Graph the growth in population for Australia's capital cities' metropolitan areas.
3. Source 1: Create a map to illustrate the predicted populations of Australia's capital cities' metropolitan areas in 2054.
4. Using Google Earth, explore one of the places listed in Source 2. Annotate the map with key characteristics of that place that increase or decrease its liveability for residents.

Make it spicy

What factors contribute to the perception of a *place* as liveable in Australian cities and rural areas?

Mapping with BOLTSS (NA), page 424; place, page 226; representing information, page 420

HOW TO

Why is access to services and facilities important?

Access to community services is a key element of the liveability of a place. The most liveable communities have good access to services such as transport and health care, and to facilities such as shopping centres, sports clubs and parks.

Access to services and facilities

Access to **services** and **facilities** can impact the quality of life of all people. A service is the provision of something you need done for you, such as transport or health care. Services are usually paid for, such as a payment for a doctor or internet access. Facilities consist of the infrastructure needed to supply goods or services. Examples of facilities include hospitals, shopping centres, sports clubs, and road and railway networks.

Source 1: Local public community facilities can be made accessible to a range of users through careful planning.

Source 2: An architect's impression of a multi-use public community facility

In geography, the concept of space describes how places are connected, the distance between them and how they are distributed. The distance people have to travel to reach essential services and facilities impacts local liveability. The concept of space helps geographers and urban planners understand liveability and develop accessible community hubs.

Access to services and facilities impacts the liveability of places for different groups. Accessibility is the extent to which a facility or service is able to be used. Factors that impact accessibility include:

- **Location:** It is well known that cities provide a larger range of services and facilities than smaller settlements.
- **Physical access:** This means being able to find or get to a place to use its facilities or services. People with disabilities, the aged and people living 'out of town' or in outer suburbs of cities have reduced accessibility. Good infrastructure within a space, such as well-maintained roads or reliable public transport, improves access to services and facilities for different groups of people.
- **Economic access:** Some people may not be able to afford to use the facilities or services available.
- **Cultural background:** There may be language barriers; shops selling ethnic foods or clothing and religious services are limited in many locations.

These factors are considered in planning to enhance the liveability of towns, suburbs, neighbourhoods or communities. As the population of communities changes, the demand for services and facilities will also change. Ageing populations will require specialised housing and health care, and suburbs with a large working population need fast, efficient transport systems.

Learning ladder G4.7

Facilities and services

1. Outline the location of your closest medical clinic.
2. Describe the distribution of facilities and services in your local community.
3. Source 2: Compare this artist's impression to your local recreational space. How do they differ? What does this indicate about access to facilities in your community?
4. Source 2: Explain how the distribution of facilities in this artist's impression aims to influence peoples' perception of liveability.

Making conclusions

1. Define the following terms using examples: services, facilities, availability, accessibility.
2. List the public facilities you consider important for your quality of life.
3. Source 2: Using examples, explain how the features of this park make it accessible to a range of different groups of people.
4. Use Google Earth or Google Maps to screen capture an image of your neighbourhood with your house in the centre. Draw a circle around your house with a radius you think would take 20 minutes to walk. Determine what facilities and services are within your 20-minute circle – show these with lines connecting to your house. What facilities are missing from this radius that would make your place more liveable?

Make it spicy

How might the *spatial* distribution of services like health care and education affect liveability in urban versus rural areas?

HOW TO Making conclusions, page 443; space, page 224

G4.8

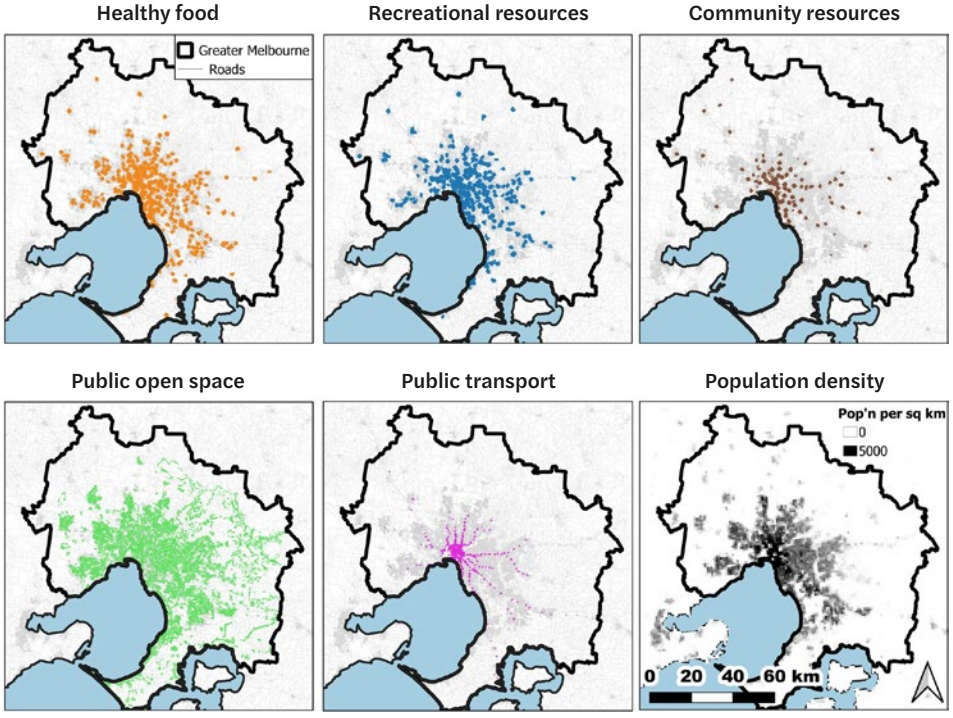
How are services and facilities distributed in Victoria?

Victorians have access to a range of schools, shops, medical, entertainment and transport facilities and services. However, these are not evenly distributed, resulting in some Victorian suburbs being rated as more liveable than others.

Access to services and facilities

Compared to more regional areas, inner Melbourne suburbs offer better public transport and access within walking distance to facilities like medical centres, schools and community complexes. Proximity to public transport supports health by promoting walking and reducing car use.

As distance from the CBD increases, public transport options decrease, and distance to key facilities and services increases. Regional areas typically feature lower population density, which can result in shorter commutes and improved work–life balance for locally employed residents.



Source: Thornton, Schroers & Lamb, 2022

Source 1: Easy access to services and facilities such as transport, supermarkets and community resources tends to be clustered in inner Melbourne suburbs.

Key indicators of liveability for Port Phillip and Macedon Ranges

	Inner Melbourne Local Government Area: Port Phillip	Outer Melbourne Local Government Area: Macedon Ranges
Overall liveability score	Top 10%	Lowest 10%
Transport (percentage of transport is within 400m of most people)	88.3%	2.4%
Access to local employment (as a percentage of local population)	28%	32.5%
Average distance to a supermarket	568.9 m	1733.7 m
Access to any of the 16 types of social infrastructure (e.g. childcare, pharmacies, sporting facilities, schools or cinemas)	10/16	2.7/16

Source 2: The Australian Urban Observatory (AUO) maps key indicators of liveability across Australia such as access to community facilities, childcare and schools, health services, recreation facilities, public transport, public open space and employment opportunities.

Source: Australian Urban Observatory

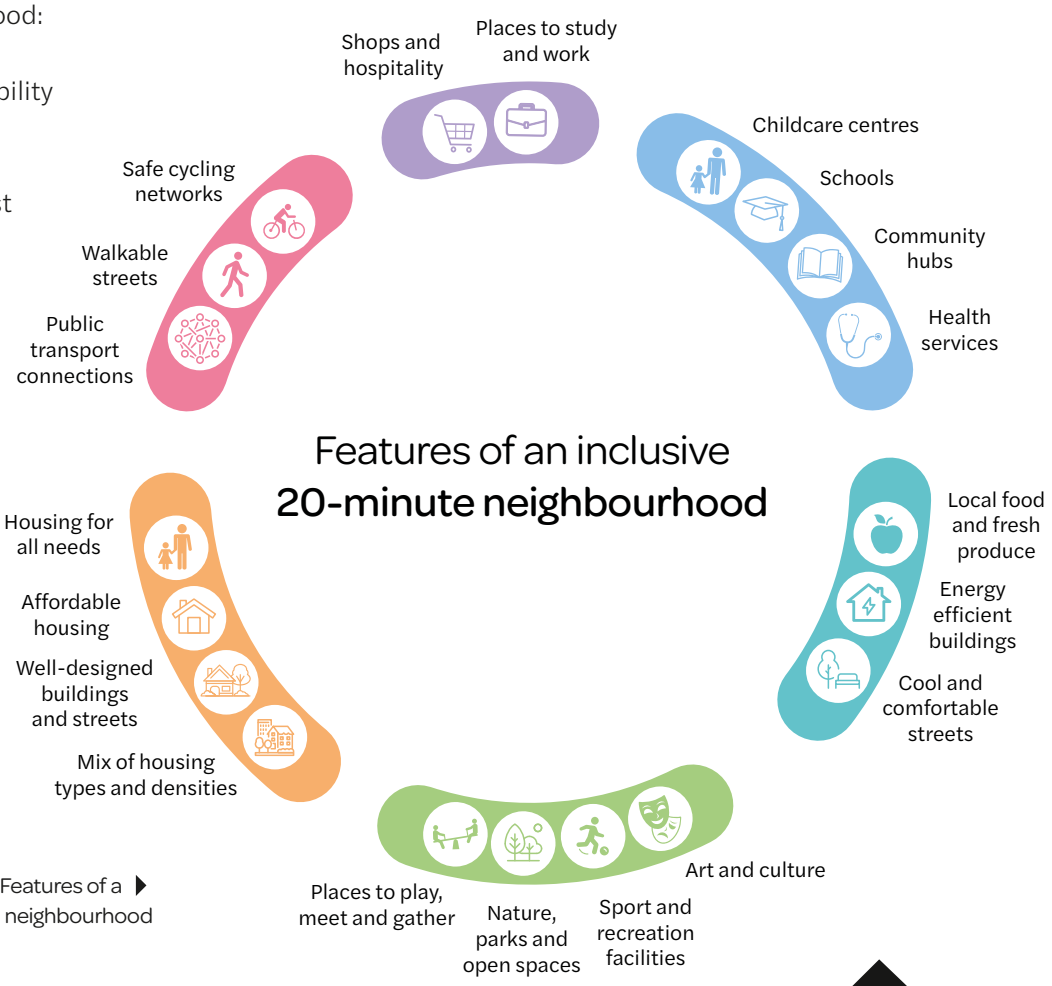
The 20-minute neighbourhood

Research has shown that most people are willing to walk or ride up to 20 minutes to access local services and facilities. The 20-minute neighbourhood aims to ensure that residents can access most of their daily needs within a 20-minute return walk or bike ride from their homes.

The 20-minute neighbourhood:

- is about creating liveable neighbourhoods with availability and accessibility of facilities and services
- enables people to meet most of their daily needs within a 20-minute return walk from home
- is a planning tool for creating new urban places and a consideration when planning to enhance the liveability of existing places.

Focusing on a 20-minute neighbourhood model means that suburbs can improve overall quality of life, reduce reliance on cars and encourage sustainable living for locals.



Source 3: Features of a 20-minute neighbourhood

Learning ladder G4.8

Facilities and services

1. What resources can help you locate community facilities and services in your area?
2. How does population density affect the distribution of services in regional areas?
3. What are the key differences in liveability scores between Port Phillip and Macedon Ranges?
4. Source 1: How are facilities and services distributed across Melbourne?

Strategies for action

1. Source 3: Outline the features of a 20-minute neighbourhood.
2. How would people's quality of life be impacted by living in a 20-minute neighbourhood?
3. Sources 2 and 3: Do you think it is possible for every part of a large region to become a 20-minute neighbourhood? Explain your answer.
4. Consider your local community space. Do you think you live in a 20-minute neighbourhood? Create a list of recommendations which may improve access to local facilities and services.

Make it spicy

Why is the concept of *space* associated with accessibility to facilities and services?

Space, page 224; strategies, page 446

HOW TO

Case study

How does Tokyo's railway system enhance liveability?

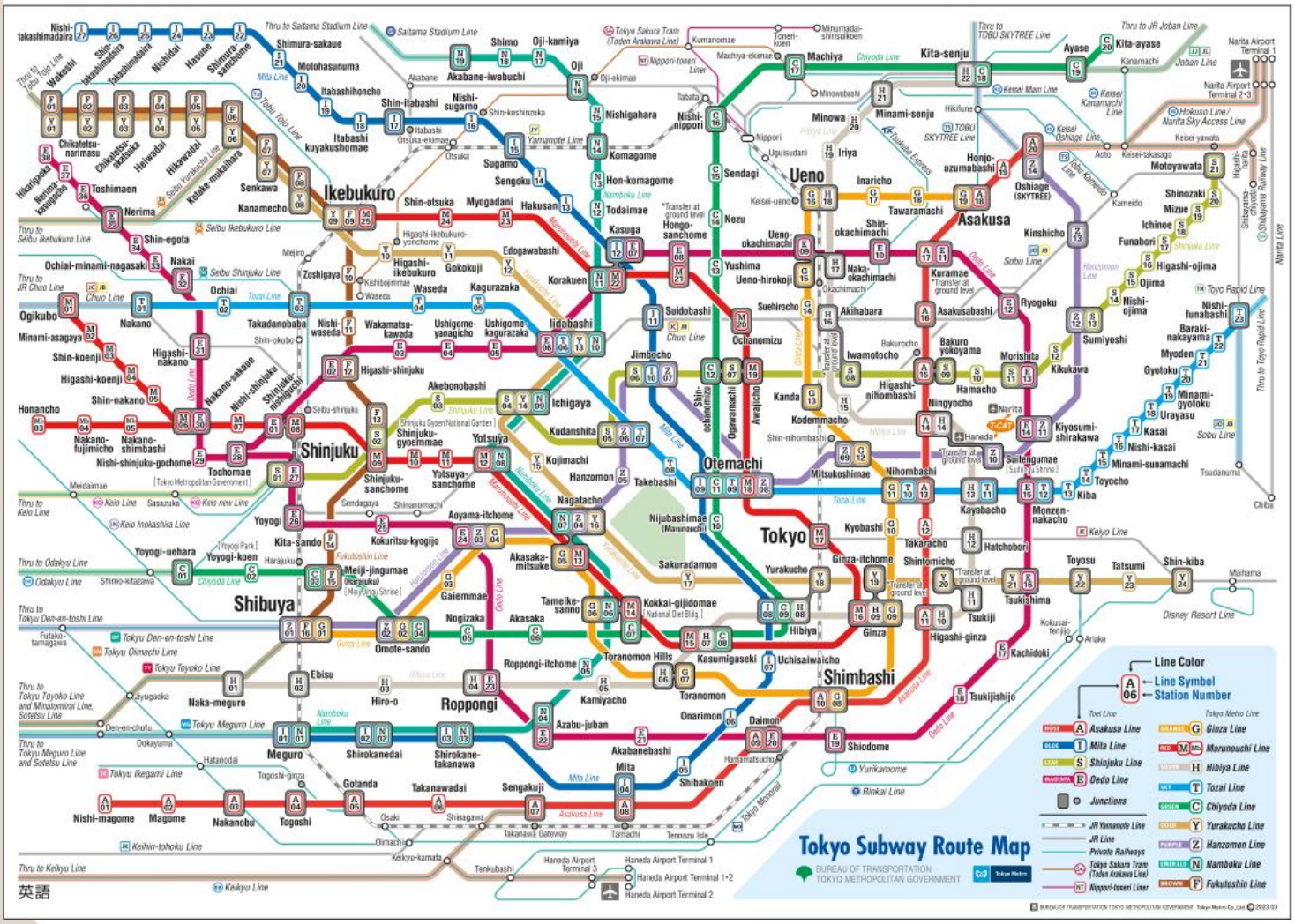
Tokyo's efficient railway system is interconnected with the liveability of its residents by providing access to services and facilities including workplaces, schools and medical care. The system caters for a staggering 40 million passengers every day.

Impact of mobility on liveability

Mobility is a critical factor in every city to enable the daily activities of people. Tokyo's efficient railway system is a key part of moving millions of citizens to work, school and shopping every day. Tokyo's railway system carries around 14 billion passengers every year and 11 of the world's 20 busiest railway stations are in Japan, including Shinjuku, the world's busiest station.

Source 1: Tokyo's subway system helps connect places in the largest city in the world.

Tokyo subway


Tokyo Subway Route Map
BUREAU OF TRANSPORTATION
TOKYO METROPOLITAN GOVERNMENT
Line Color
Line Symbol
Station Number
Asakusa Line
Mita Line
Shinjuku Line
Oedo Line
Ginza Line
Marunouchi Line
Hibiya Line
Tozai Line
Chiyoda Line
Yurakucho Line
Hanzomon Line
Namboku Line
Fukutoshin Line
Junctions
JR Yamanote Line
JR Line
Private Railways
Ikebukuro
Shinjuku
Shibuya
Ueno
Asakusa
Otemachi
Tokyo
Shimbashi
Roppongi
Meguro
Nishi-magome
Magome
Nakanobu
Togoshi
Golanda
Takanawadai
Sengakuji
Shirokane-takanawa
Shirokanedai
Naka-meguro
Ebisu
Hiro-o
Kamiyacho
Toranomon
Onarimon
Daimon
Shiodome
Akabanebashi
Mita
Shibakoen
Tsukijishijo
Higashi-ginza
Kachidoki
Tsukishima
Tsukiji
Ginza
Hibiya
Kasumigaseki
Uchisaiwaicho
Toranomon Hills
Roppongi-itchome
Akasaka
Nogizaka
Omote-sando
Gaiemmae
Meiji-jingumae
Yoyogi-koen
Yoyogi-uehara
Yoyogi
Sendagaya
Shinanomachi
Aoyama-itchome
Kokuritsu-kyogijo
Kita-sando
Harajuku
Shimo-kitazawa
Sakuradamon
Nijubashimae
Takebashi
Kudanshita
Jimbocho
Ochanomizu
Suidobashi
Iidabashi
Ichigaya
Kojimachi
Hanzomon
Nagatacho
Akasaka-mitsuke
Tameike-sanno
Kokkai-gijidomae
Shinjuku-gyoemmae
Yotsuya
Yotsuya-sanchome
Shinjuku-sanchome
Tochomae
Shinjuku-nishiguchi
Nishi-shinjuku
Nakano-sakaue
Higashi-shinjuku
Akebonobashi
Higashi-nakano
Nakano-fujimicho
Nakano-shimbashi
Nishi-shinjuku-gochome
Honancho
Shin-nakano
Higashi-koenji
Shin-koenji
Minami-asagaya
Ogikubo
Nakano
Ochiai
Ochiai-minami-nagasaki
Nakai
Shin-egota
Nerima
Toshimaen
Senkawa
Kanamecho
Kotake-mukaihara
Hikawadai
Heiwadai
Chikatetsu-akatsuka
Chikatetsu-narimasu
Hikarigaoka
Nerima-kasugacho
Shin-otsuka
Myogadani
Hakusan
Sugamo
Shin-koshinzuka
Nishi-sugamo
Shin-itabashi
Itabashi
Itabashihoncho
Motohasunuma
Shimura-sakaue
Shimura-sanchome
Hasuna
Nishidai
Shin-takashimadaira
Takashimadaira
Nishi-takashimadaira
Shimo
Oji-kamiya
Oji
Akabane-iwabuchi
Akabane
Kita-senju
Machiya
Minowa
Minami-senju
Iriya
Inaricho
Tawaramachi
Honjo-azumabashi
Oshiage (SKYTREE)
Kita-ayase
Ayase
Kanamachi
Motoyawata
Shinozaki
Mizue
Ichinoe
Funabori
Higashi-ojima
Ojima
Nishi-ojima
Sumiyoshi
Kikukawa
Kiyosumi-shirakawa
Monzen-nakacho
Kiba
Toyocho
Minami-sunamachi
Nishi-kasai
Kasai
Urayasu
Minami-gyotoku
Gyotoku
Myoden
Baraki-nakayama
Nishi-funabashi
Higashi-funabashi
Shin-kiba
Tatsumi
Toyosu
Tsukishima
Kachidoki
Shiodome
Daimon
Hamamatsucho
Shibakoen
Akabanebashi
Mita
Sengakuji
Takanawa Gateway
Tamachi
Tennozu Isle
Shinagawa
Osaki
Gotanda
Meguro
Hatanodai
Togoshi-ginza
Ryogoku
Asakusabashi
Kuramae
Akihabara
Suehiro-cho
Yushima
Ueno-hirokoji
Naka-okachimachi
Shin-okachimachi
Ueno-okachimachi
Nezu
Sendagi
Nishi-nippori
Nippori
Uguisudani
Komagome
Hon-komagome
Hongo-sanchome
Kasuga
Korakuen
Edogawabashi
Gokokuji
Higashi-ikebukuro
Ikebukuro
Mejiro
Zoshigaya
Waseda
Kagurazaka
Ushigome-kagurazaka
Ushigome-yanagicho
Wakamatsu-kawada
Nishi-waseda
Takadanobaba
Shin-okubo
Seibu-shinjuku
Shinjuku-gyoemmae
Shinjuku-sanchome
Yotsuya-sanchome
Sendagaya
Shinanomachi
Aoyama-itchome
Kokuritsu-kyogijo
Kita-sando
Harajuku
Meiji-jingumae (Harajuku)
Gaiemmae
Nogizaka
Akasaka
Akasaka-mitsuke
Tameike-sanno
Kokkai-gijidomae
Sakuradamon
Nijubashimae (Marunouchi)
Takebashi
Kudanshita
Jimbocho
Ochanomizu
Suidobashi
Iidabashi
Ichigaya
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Nagatacho
Roppongi-itchome
Toranomon Hills
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Takanawadai
Golanda
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Magome
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Higashi-ginza
Tsukiji
Tsukishima
Kachidoki
Tsukijishijo
Shimbashi
Shinbashi
Yurakucho
Ginza-itchome
Kyobashi
Takaracho
Shintomicho
Tokyo
Otemachi
Mitsukoshimae
Nihombashi
Kayabacho
Hatchobori
Bakuro-yokoyama
Bakurocho
Iwamotocho
Higashi-nihombashi
Ningyocho
Hamacho
Morishita
Kanda
Kodemmacho
Shin-nihombashi
Ogawamachi
Awajicho
Shin-ochanomizu
Suehirocho
Akihabara
Okachimachi
Ueno
Inaricho
Tawaramachi
Asakusa
Kinshicho
Oshiage (SKYTREE)
Honjo-azumabashi
Minowa
Minami-senju
Iriya
Machiya
Nippori
Sendagi
Nezu
Yushima
Ueno-hirokoji
Naka-okachimachi
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Kudanshita
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Sengakuji
Takanawadai
Golanda
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Togoshi
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Magome
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Monzen-nakacho
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Kasai
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Baraki-nakayama
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Shin-kiba
Tatsumi
Toyosu
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Kachidoki
Tsukijishijo
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Hanzomon
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Tameike-sanno
Kokkai-gijidomae
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Yotsuya-sanchome
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Tochomae
Shinjuku-nishiguchi
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Nakano-shimbashi
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Higashi-koenji
Shin-koenji
Minami-asagaya
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Ochiai-minami-nagasaki
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Shin-egota
Nerima
Toshimaen
Senkawa
Kanamecho
Kotake-mukaihara
Hikawadai
Heiwadai
Chikatetsu-akatsuka
Chikatetsu-narimasu
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Hakusan
Sugamo
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Nishi-sugamo
Shin-itabashi
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Nishi-takashimadaira
Shimo
Oji-kamiya
Oji
Akabane-iwabuchi
Akabane
Kita-senju
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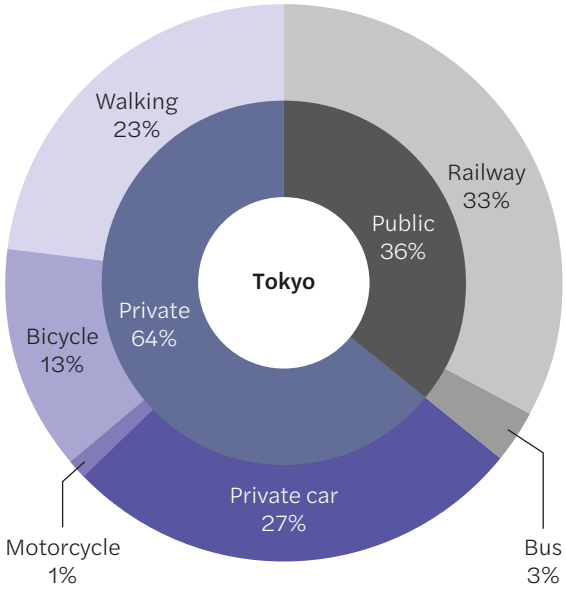
Shinozaki
Mizue
Ichinoe
Funabori
Higashi-ojima
Ojima
Nishi-ojima
Sumiyoshi
Kikukawa
Kiyosumi-shirakawa

Source 2: Around 3.5 million people pass through Shinjuku station in Tokyo every day. It is the world's busiest railway station with 200 different exits and 36 platforms that service subway, commuter and long-distance trains.

Tokyo's rail system includes mid- and long-distance services and a subway system, made up of 13 lines and 243 stations. The convenience, reliability and affordability of rail transport in Tokyo greatly enhances the liveability of its 37 million residents. Trains run on a strict schedule and are renowned for their punctuality. One railway operator issued an official apology to passengers for the inexcusable error of a train leaving the station 25 seconds ahead of schedule.



Source 3: In Tokyo, 36 per cent of people use public transportation, compared to 9 per cent in Melbourne. Trips in private cars account for 27 per cent of trips in Tokyo and 64 per cent of trips in Melbourne.

Learning ladder G4.9

Facilities and services

1. Source 1: Which line would you need to take if you wanted to travel from Tokyo (M17) to Korakuen (M22)?
2. Source 3: Why would walking be more popular than private car travel in Tokyo?
3. How does Tokyo's railway system differ from Melbourne's?
4. Source 1: Explain why Tokyo's subway system is so complex with so many stations.

Strategies for action

1. Describe the main features of Tokyo's railway system and how they facilitate mobility for residents.
2. Source 2: In what ways does Tokyo's railway system cater to the needs of its diverse population?
3. Predict how Tokyo's public transport system may have to change in the future.
4. Consider Tokyo's subway system. Consider whether this model would be suitable in a city like Melbourne. Locate a map of Melbourne's current train system. Redesign the routes to better connect key locations.

Make it spicy

What *changes* might occur in Tokyo's transport system in response to increasing population growth?

HOW TO

Change, page 228; space, page 224; strategies, page 446

G4.10

How is safety interconnected with liveability?

Being safe is a key ingredient of a liveable place. Many people in the world live in unsafe places with the threat of volcanoes, earthquakes and tsunamis. Others live with conflict, or are forced to escape war zones as refugees.

Looking for safety

Along with having food, water and shelter, feeling safe is the most important factor in the **liveability** of a place. Many of the world's least liveable cities are found in wartorn countries such as Syria, Afghanistan and South Sudan.

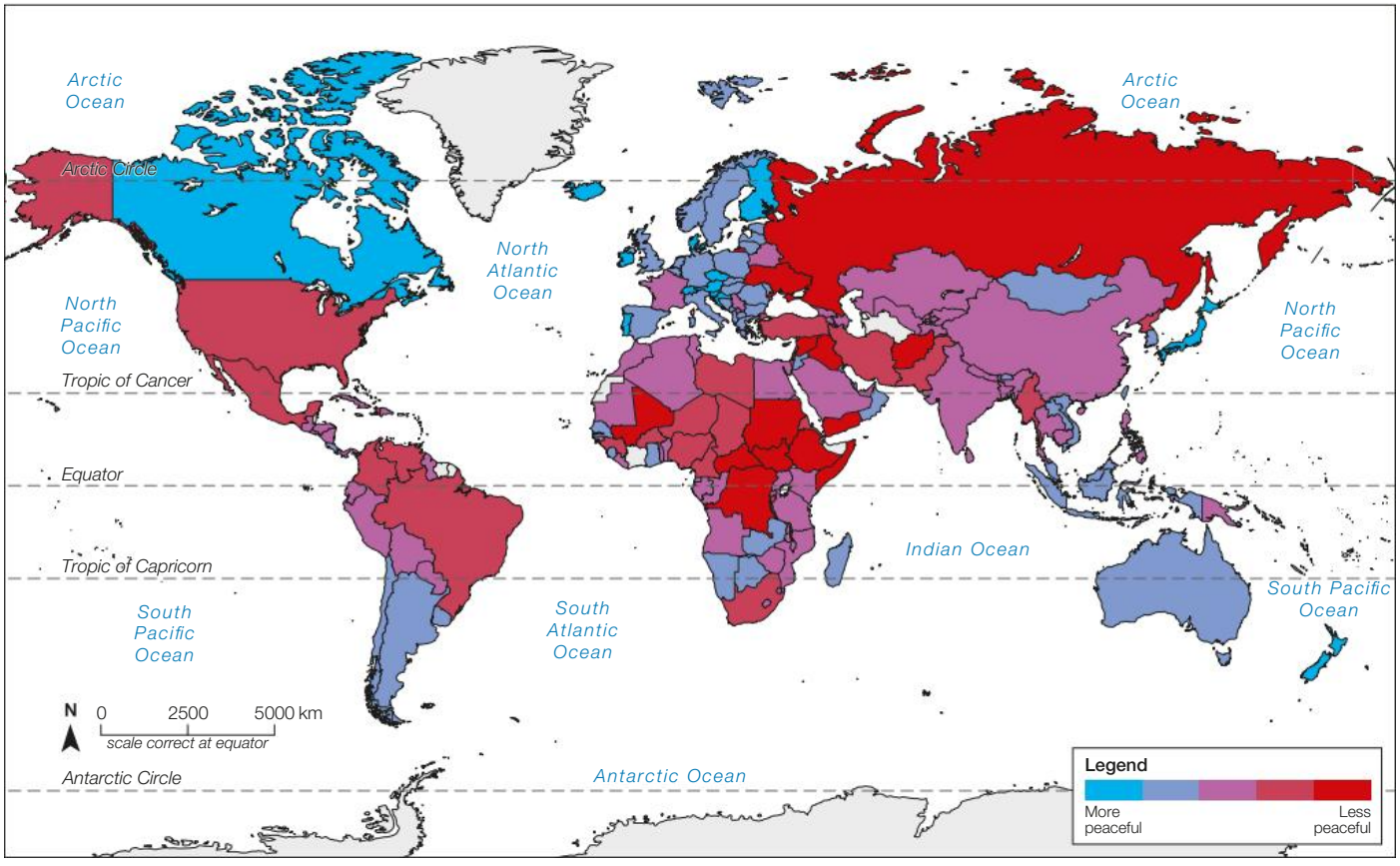
In regions of conflict, people can be forced to leave their homes. They seek safety, food and shelter in camps that have been set up by welfare organisations. Some people are forced to flee their homes and move to camps somewhere else in their country – these are called **internally displaced persons**. Many threatened people flee to other countries as **refugees** in order to escape war, violence or a natural disaster. More than 1 million refugees from South Sudan are now living across the southern border in Uganda.

Source 1: Global Peace Index 2023 measures global peacefulness. This annual report produced for the Institute for Economics and Peace uses 23 qualitative and quantitative indicators to measure:

- the level of safety and security
- the extent of ongoing conflicts
- the degree of militarisation.

In 2023, deaths from global conflicts doubled from the previous year, with 238 000 people killed and 91 countries involved in a conflict, up from 58 in 2008.

Global peacefulness, 2023



Source: Institute for Economics and Peace, 2023

Source 2: A soldier walks past women in northern South Sudan who are carrying their belongings. One-third of South Sudan's population has been forced to find a safer place to live following a long-running conflict between two rival ethnic groups.

Safe and unsafe countries

The Global Peace Index ranks countries according to their level of peacefulness. In 2023, the countries rated as the most peaceful were New Zealand, Canada and Japan, as well as some countries in Europe. Russia, eastern Europe, the Middle East and central Africa were rated among the world's least peaceful regions.

The following measures (or criteria) are used to measure peacefulness:

- **safety and security:** amount of crime, numbers of people jailed, the threat of terrorism, the number of refugees
- **ongoing conflict:** number of conflicts and casualties
- **militarisation:** military spending, and numbers of military personnel.

Learning ladder G4.10

Measuring liveability

1. List the characteristics that make a place 'unsafe'.
2. Describe two key differences between an internally displaced person and a refugee.
3. Explain the human processes that impact safety and decrease liveability.
4. Assess your local place against the criteria of 'safety'.

Making conclusions

1. How is safety interconnected with liveability?
2. Source 2: What are the implications for these refugees? Where are they, how might they be feeling, what are they carrying and where are they going?
3. Using examples, summarise the human processes that impact safety and decrease liveability.
4. Source 1: How reliable are the data presented on this map? Explain your response.

Make it spicy

How have safety measures in your community *changed* over the past decade?

HOW TO Change, page 228; making conclusions, page 443

Case study

Why is Kyiv an unsafe place to live?

In 2013 Kyiv, the capital city of Ukraine, was ranked the 91st most liveable city in the world. In 2023 it was ranked in the 10 least liveable cities at position 165 in the Economist Intelligence Unit Global Liveability Index (see page 344). The key reason for the decline in liveability has been the sustained conflict with Russia, which escalated into full warfare in early 2022.

Impact of conflict on liveability

The conflict in Kyiv has impacted liveability in a variety of ways. All of the criteria used to measure liveability have been affected:

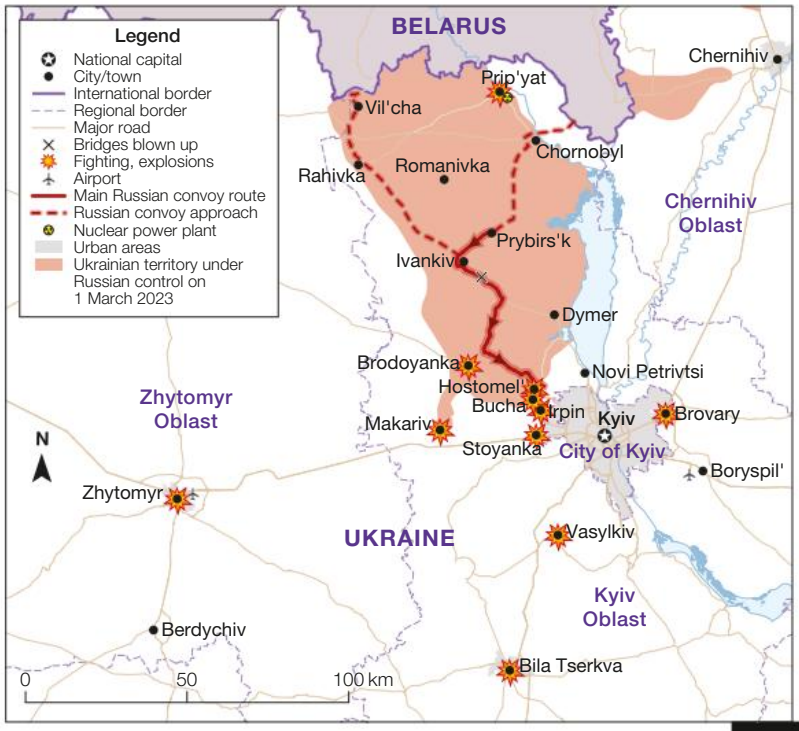
1. **Stability:** Warfare heavily impacts on the safety of people in Ukraine and the stability of their lives. Between 2022 and 2023, there were nearly 30 000 civilians killed or injured and more than 7000 left homeless as families were forced to leave their homes in search of safety.
2. **Health care:** High numbers of casualties and widespread destruction of hospitals and other health facilities is making access to health care difficult for citizens in Kyiv and Ukraine.
3. **Culture and environment:** The freedom to enjoy normal activities and access goods and services has been greatly impacted by the war with Russia. There has been a heavy reliance on aid from other countries.
4. **Education:** Attacks on schools have left students without safe spaces to learn. Ukraine's children are struggling to progress learning with great interruptions to their education.
5. **Infrastructure:** The ongoing war continues to result in the destruction of residential buildings, schools, hospitals, roads, airports, ports, power supply, water and other infrastructure in Kyiv.

Implications of warfare

The conflict has also disrupted **supply chains**, as companies and organisations cannot safely import resources into the city. There are also too many disruptions to the transport networks they rely on to bring goods in and out of the city. This results in a reduced supply of products – there is not enough to meet the demand of people in the city.

Source 1: Firefighters work to contain fires after a drone attack on buildings in Kyiv on 17 October 2022. By September 2023, 167 200 houses in Ukraine had been destroyed or damaged, most severely in Donetsk, Kyiv and Luhansk. Other infrastructure attacks caused damage to 18 airports, 344 bridges, 25 000 kilometres of road, 426 industrial complexes, 2700 schools, 586 higher education institutions and 1223 medical facilities.

Russians tanks approach Kyiv, March 2022



▲ **Source 2:** Kyiv residents began evacuating the city as a 64-kilometre line of tanks approached Ukraine's capital in March 2022.

Source: Matilda Education Australia

It increases the price of the goods and makes it difficult for families to access affordable and nutritious food, or resources such as petrol. This affects the ability of people to work in industries that import and export goods and services, further impacting the income of families in Kyiv.

As a result of this decreased liveability, safety and access to services, many Kyiv residents are migrating out of the city. More than 3 million people from Kyiv have sought refuge in neighbouring countries and a similar number have been moved to more rural and remote areas away from the direct conflict. This can impact the future of Kyiv, as there are fewer people to re-establish communities, improve the local economy or lead important services, such as teachers in schools, and doctors and nurses in hospitals.

Learning ladder G4.11

Facilities and services

1. Source 2: Locate the airport on the map.
2. Source 1: Describe how conflict has affected the liveability in Kyiv.
3. Compare how the conflict may differ in the city of Kyiv and rural areas in Ukraine.
4. Predict how the distribution of services and facilities may change in Ukraine in the future.

Presenting ideas

1. What characteristics of liveability in Kyiv have been impacted by warfare?
2. Kyiv is one case study to explore how safety impacts liveability. What other countries would be relevant to study to ensure we gain a broad understanding of this interconnection?
3. Using data, explain how the impact of conflict on infrastructure has affected the liveability in Kyiv.
4. Source 1: Explain why, even during war, key services are still required.

Make it spicy

Source 1: Describe the human characteristics of this *place*.

HOW TO
Place, page 226; presenting ideas, page 449; SHEEPT, page 440; space, page 224

How is access to health care linked to liveability?

Over the past 30 years, there have been great advances in the health of the world's population. However, despite the improvements in health care, there are still millions of people who don't have a healthy place to live.

Improving global health

High-income countries have better health opportunities than low-income countries:

- About 3.9 per cent of all children in the world die before reaching the age of five, which means that on average 15 000 children die every day.
- In Africa, children are 15 times more likely to die before the age of five than children in high-income countries, and one child in every 13 dies before they are five.
- Children living in the world's poorest 20 per cent of households are twice as likely to die before their fifth birthday as children in the richest 20 per cent of households.
- Only 1 per cent of mothers who die during pregnancy or from complications during childbirth live in wealthy countries.

Source 1: In some places, it can take a full day to access health care. The Royal Flying Doctor Service can be required to provide medical care for Australians living in the remote parts of the country.

Improving children's health

In 2021, more than 5 million children under the age of five died – and half of these deaths could have been prevented with access to simple and affordable medical care. More than 80 per cent of these deaths occurred in Africa and southern Asia.

Around 45 per cent of all deaths in children under the age of five were because they didn't have enough to eat, or because they did not eat enough of the right foods, which is called **malnutrition**. When children suffer from malnutrition, it puts them at greater risk of dying from common infections.

In 2022, there were 45 million underweight children below five years of age – and 14 million of these were severely underweight. More than 50 per cent of all malnourished children live in South Asia, and 25 per cent live in Africa.

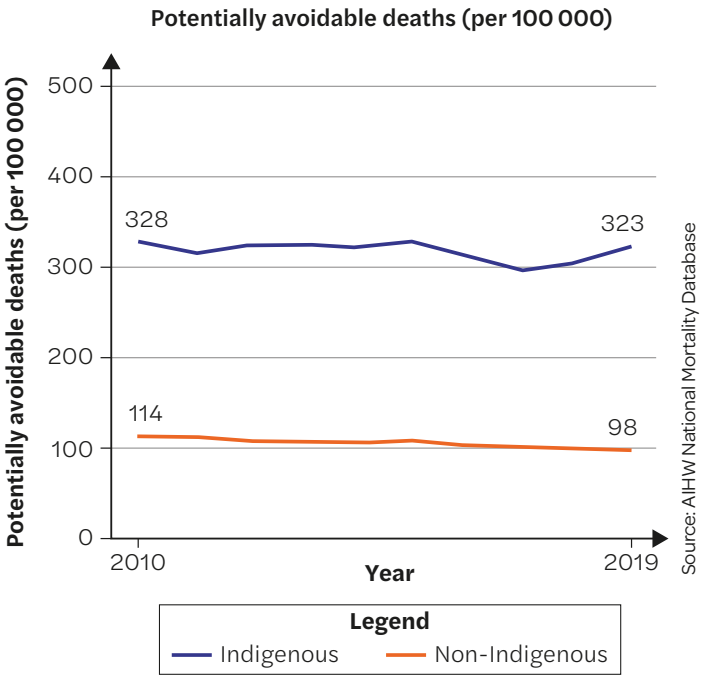
The opposite problem of overweight children occurs in many Pacific Island nations and developed nations like Australia and the United States of America.

First Nations health in Australia

A significant health gap exists between First Nations and non-Indigenous Australians. In Australia, a non-Indigenous man can expect to live for 81 years, and a non-Indigenous woman for 85 years. But the life expectancy for First Nations people is much lower. A First Nations man can expect to live for only 72 years and a First Nations woman for only 76 years.

Historical and contemporary contexts have contributed to these poor health outcomes. As part of European colonisation, diseases were introduced that killed many First Nations people. Many of the ongoing health issues are a legacy of colonisation and genocide. Today, institutional racism in the Australian health system leads to poorer health outcomes for First Nations people, as well as an inequitable access to health services, especially for First Nations people living in remote areas.

Aboriginal communities have higher rates of infant mortality and infectious diseases, such as trachoma, which makes people blind. Australia is the only wealthy country in the world where people suffer from trachoma. Trachoma exists in remote Aboriginal communities that lack clean water and have overcrowded housing and limited access to health services, and these are all the responsibility of federal, state and territory governments.



Source 3: The number of avoidable deaths is much higher in First Nations groups, especially those in remote and very remote locations.

Source 2: The combination of drought and conflict in Sudan has led to food shortages and high levels of malnutrition.

Learning ladder G4.12

Facilities and services

1. State the location of one major health care facility in your region.
2. Source 1: Describe the need for services such as the Royal Flying Doctor Service.
3. Research and compare access to health care within rural and urban regions in Australia.
4. Source 3: Explain the differences between First Nations and non-Indigenous avoidable death rates in Australia.

Interpreting information

1. List some key factors that influence the health of the population.
2. Source 3: Describe the health gap between Indigenous and non-Indigenous Australians.
3. Source 1: How is access to health care interconnected with liveability? Give examples to support your explanation.
4. Source 3: Predict how the health gap may change in the future. What is required to improve the current health gap?

Make it spicy

Research and describe healthcare access on a global *scale*.

HOW TO Interpreting information, page 428; PQE, page 438; scale, pages 232, 429; SHEEPT, page 440

How does environmental quality affect liveability?

The most liveable places are those where the quality of the environment is high, and people have fresh air to breathe and clean water to drink.

Environmental quality

The quality of the environment is a key factor that determines how liveable a place is. Characteristics such as clean air and clean water, low noise levels, and access to open spaces make a place healthier and more liveable.

Air pollution

Many large cities around the world suffer badly from harmful particles in the air, known as **air pollution**. The major sources of outdoor air pollution are:

- exhaust gases from motor vehicles
- power generation – such as oil and coal power plants
- industrial factories, mines and oil refineries
- burning of agricultural waste
- home cooking, heating and lighting.

If there are too many harmful particles in the air, people breathe them in when they inhale. This can cause serious health conditions, such as lung cancer, heart disease and respiratory diseases.

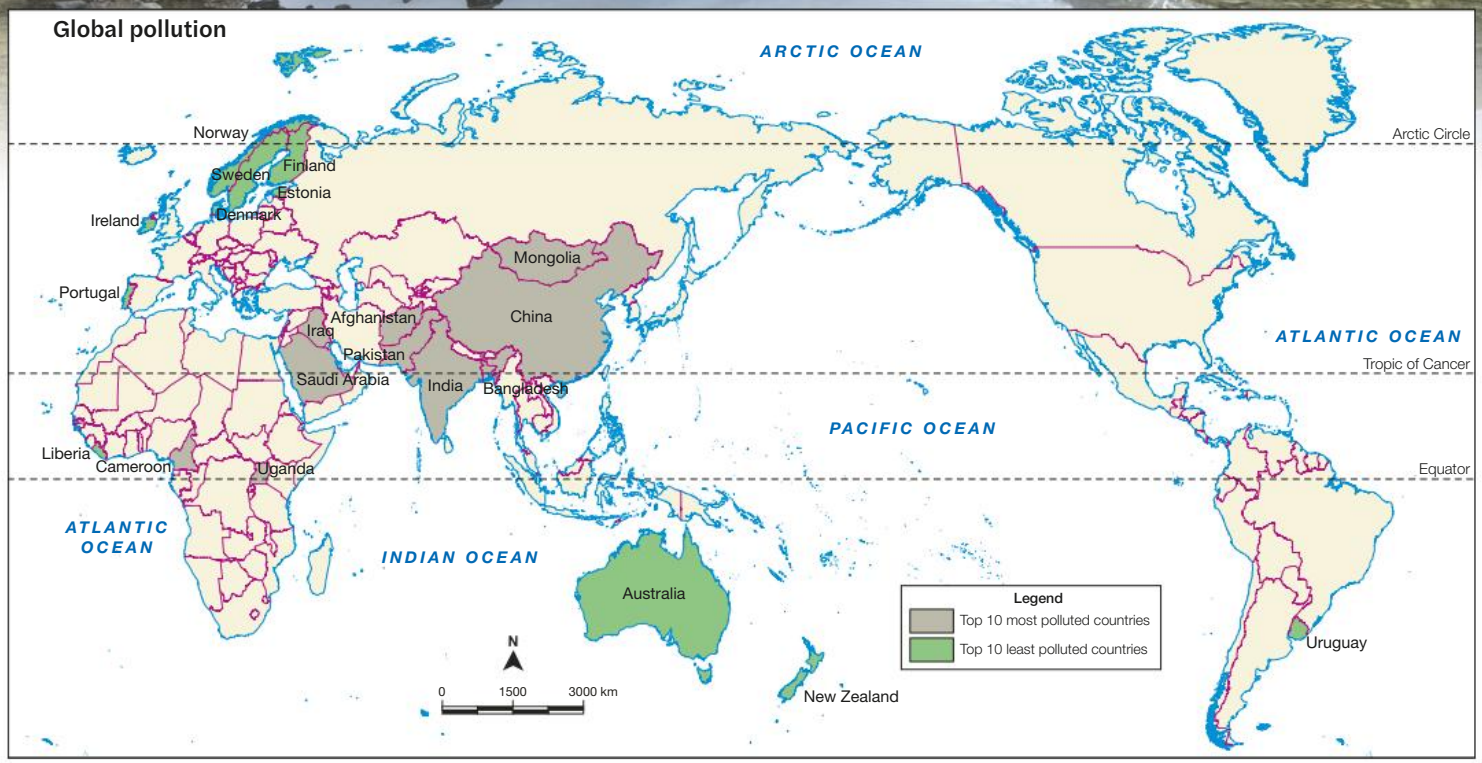
Each year, around 4.2 million people die because of exposure to air pollution – and 99 per cent of the world's population lives in places where air quality is worse than (or 'exceeds') World Health Organization guidelines.

Air pollution affects both high-income and low-income countries, with the highest levels experienced in South-East Asia. In 2024, India had 83 of the 100 most polluted cities in the world. In November 2017, air pollution levels in India's capital, New Delhi, were 30 times beyond the level that is safe to breathe. The Indian government closed schools for three days, stopped all construction, and warned people to stay indoors for their own safety.

To improve the liveability of cities, India and other countries and cities have been trying to reduce their air pollution levels. Some have banned old, polluting cars, or reduced the number of cars on the road. Other countries are investing in clean energy, such as solar power and wind power.

Source 1: In New Delhi, November 2017, schoolchildren cover their faces with handkerchiefs as they walk to school through heavy smog. Commuters wore masks or covered their mouths with scarves. The government shut the primary schools, as pollution levels were nearly 30 times the World Health Organization safe level.

Source 2: Te Anau in New Zealand is one of the least polluted areas in the world. It is the gateway to the wilderness area of Fiordland National Park.



▲ **Source 3:** The world's 10 most polluted and 10 least polluted countries

Source: Matilda Education Australia

Learning ladder G4.13

Environment

1. Source 3: Identify where most of the world's most polluted cities are located.
2. Source 2: Describe the environment photographed.
3. Explain how environmental quality impacts your local liveability.
4. Source 1: Assess the potential impacts environmental quality has on education.

Planning and collecting

1. Sources 1 and 2: Compare these photographs. Write two questions that come to mind.
2. Create a list of three survey questions which would help collect data for the inquiry question, 'Is air quality an important liveability factor for my local community?'
3. Explore the EPA website. Under the 'For Community' tab, select 'Air quality monitoring data across Victoria'. What is the current air quality for your suburb?
4. Walk around your school or local community. Record some observations of potential pollution sources (e.g. traffic congestion, industrial emissions). Document your findings through photographs and notes. How might this data, combined with the EPA data collected in Question 3, help you understand the air quality of your local area?

Make it spicy

Source 1: How is air quality *interconnected* to liveability?

Interconnection, page 227; photographs, page 436; place, page 226; planning and collecting, page 410; space, page 224

HOW TO

Why do people move to coastal and rural towns?

The quality of the environment is an important factor in the liveability of a place. In large cities, liveability improves with access to clean air and open space. To find clean air and open space, people are increasingly moving away from cities to coastal or rural areas so they can enjoy a more liveable environment.

Sea change

More people are choosing to live in coastal towns, where they can enjoy the natural environment as well as swimming, surfing, fishing and walking along the beach. The decision to move to a coastal location is known as a **sea change**. Increasingly, large numbers of people are moving to coastal areas to get away from the pressures of big city life. Apart from capital cities, coastal communities are the fastest growing regions in Australia.

Tree change

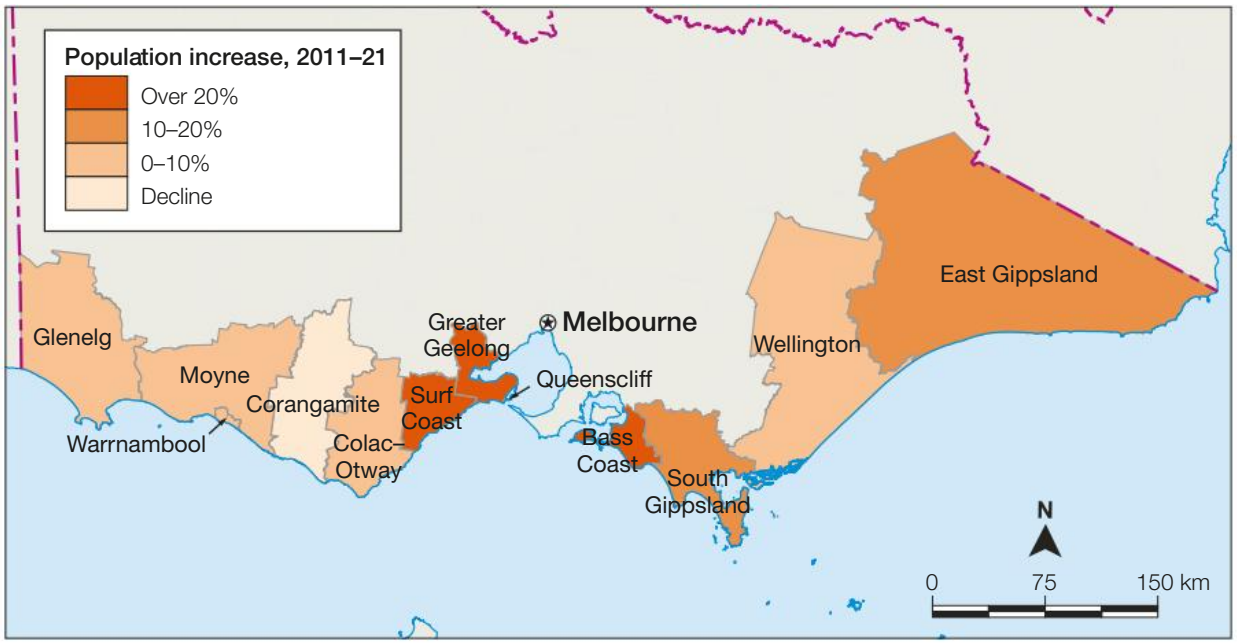
When people move from the city to a rural area, it is known as a **tree change**. A tree change is usually made in search of a more liveable environment. Country towns offer people a better balance of work and leisure (called 'work–life balance'), a lower cost of housing and living, clean air and a slower pace of life.

For people considering a tree change, the lower cost of homes in rural areas is tempting. A buyer might get a large home on a block of land for the price of an apartment in a capital city. More than 30 per cent of people moving to country areas say cost of living was their main reason for moving.

▲ **Source 1:** Birregurra is a small rural town with a population of 828 people. It is located in the foothills of the Otway Ranges, about 130 kilometres south-west of Melbourne. Birregurra is surrounded by grazing land and is close to coastal attractions such as Port Campbell.

▲ **Source 2:** Residents of Victoria's Surf Coast enjoy a pre-dawn surf. Some of them will then head off to work locally. Others will be driving to jobs in Geelong (20 minutes) or Melbourne (90 minutes). More and more people are making a 'sea change' to enjoy the coastal environment and the activities available there.

Victoria population increase in coastal migration, 2011–21



Source 3: Population increase in Victorian coastal regions, 2011–21

Source: Matilda Education Australia

With improvements to internet connections across Australia, more residents can make a tree change and work from home to minimise their travel time and increase their quality of living.

A key motivation for a person to make a tree change to a rural area is to find a better living environment. The aesthetic appeal of rolling green pastures with grazing animals and fresh air appeals to many people.

Green belts and wedges

Green belts and **green wedges** are undeveloped areas within or around cities that have been set aside for open space. Green belts surround the outer limits of cities, and green wedges run through urban areas.

These green zones help make major cities more liveable, as they:

- protect natural and rural environments
- improve air and water quality
- give city residents access to rural and natural environments
- provide bushwalking, camping and riding areas close to cities
- provide a connected habitat for native animals and plants.

Learning ladder G4.14

Environment

1. Define the term 'sea change'.
2. What is a tree change? Why do people choose to make them?
3. Explain how green belts and green wedges improve liveability.
4. What challenges would a rural town face if there is a sudden population increase due to sea or tree changers?

Representing information

1. Source 3: This is a choropleth map. What do these types of maps show?
2. Source 1: This is an oblique aerial photograph. How is this form of data useful in understanding places?
3. Source 2: Why has Victoria's Surf Coast become such a popular place to live for an increasing number of people?
4. Brainstorm four places you would like to move to for a tree change or sea change. Map these locations and provide annotations explaining your choices.
5. Source 3: Evaluate the impact on environments in the fastest growing regions. How might the quality of the environment suffer?

Make it spicy

How does the natural *environment*, including access to green spaces and clean air, contribute to the overall liveability of a *place*?

Environment, page 230; photographs, page 436; place, page 226; representing information, page 420

HOW TO

How does climate change impact liveability?

Climate change refers to increasing global temperatures and changing weather patterns. The current rapid rate of change is a result of additional carbon dioxide and other greenhouse gases emitted into the atmosphere by people, particularly through the burning of fossil fuels. Environmental changes resulting from climate change are impacting the liveability of places.

Higher average temperatures cause heatwaves and increase heat stress, particularly in large cities where a 'heat island effect' already impacts millions of residents. Heatwaves result in more deaths than any other climate-related disaster, and wildfires start more easily and spread faster in these conditions.

Fire events increase air pollution and reduce environmental quality. The quality of life of vulnerable groups such as babies, the aged and people with lung diseases is reduced and working outdoors is more difficult.

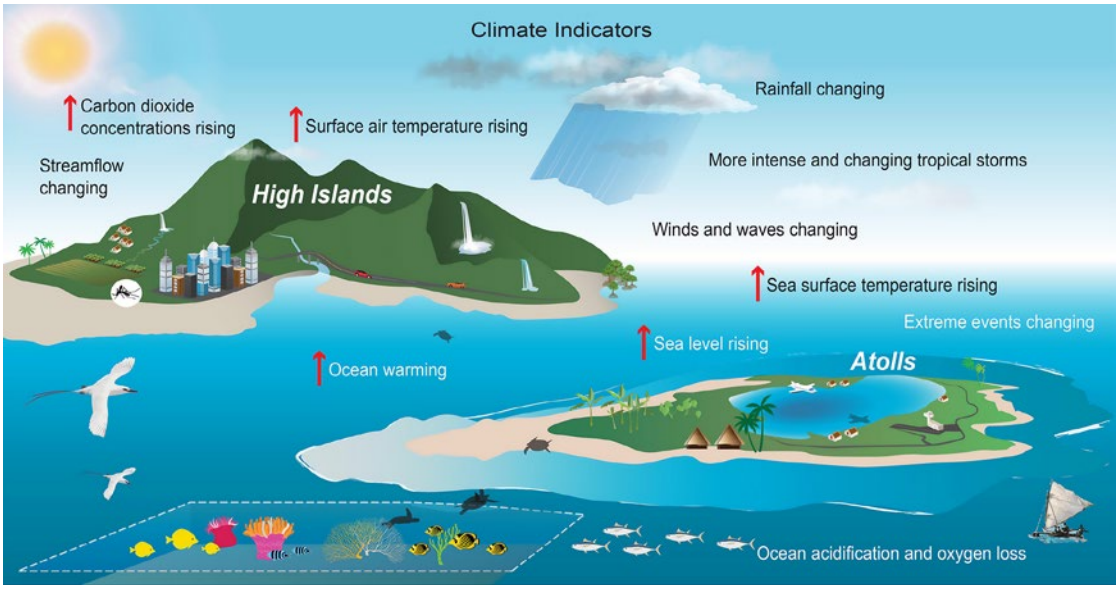
Extreme weather events such as floods, droughts, cyclones and bushfires become more common. In recent years, New South Wales has experienced greater frequency and intensity of heatwaves and heavy rain, while parts of Africa have had more severe droughts and are at increased risk of famine.

Marine heatwaves change coastal ecosystems that human livelihoods and cultures depend on.

Melting sea ice and permafrost in polar regions reduces the capacity of traditional communities to travel across their lands and onto sea ice to hunt and fish. The loss of sea ice also means greater coastal erosion and the loss of liveable land. Coastal villages in Alaska are being relocated because of rising sea levels.

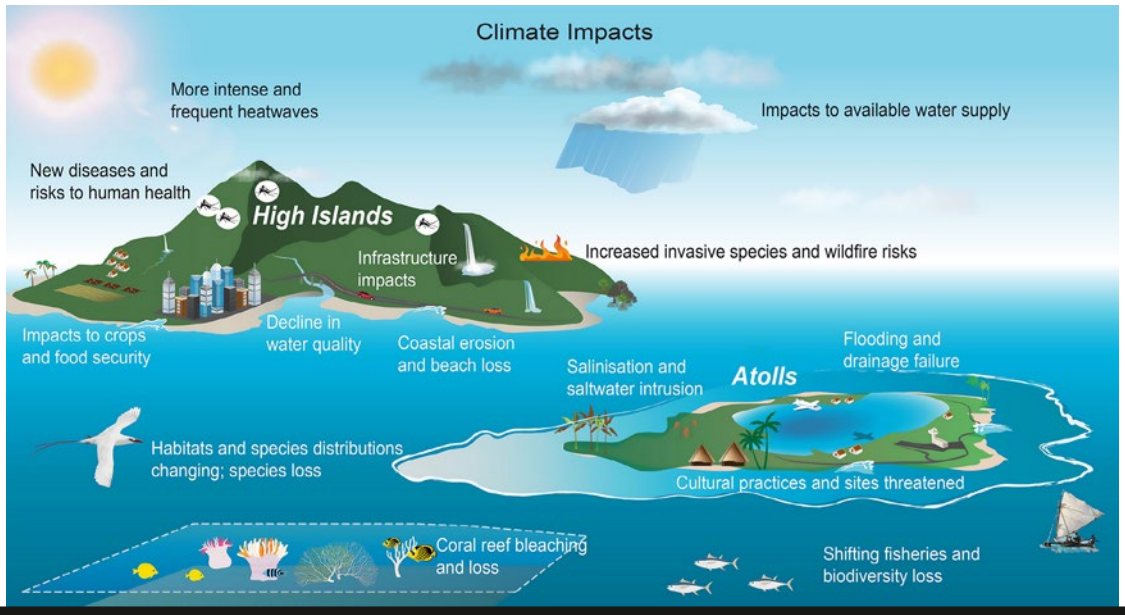
All of these climate-related issues reduce liveability: places become unsafe, people face increased risks to their health and survival, and their quality of life deteriorates. The cumulative impact of climate change for small islands is drastic.

Source 1: Coral bleaching and other ecological changes are occurring due to rising ocean temperatures.



Source 2: Indicators and impacts of climate change in Pacific Island nations

Source: Island Press



Learning ladder G4.15

Environment

1. Source 2: Identify the types of environments in the Pacific Islands.
2. Use a mind map to identify the ways climate change impacts people and environments.
3. Source 2: Explain why the Pacific Islands are vulnerable to climate change. How might that impact regional liveability?
4. Source 1: Assess why coral reefs are used to illustrate the impacts of climate change on fragile environments.

Planning and collecting

1. Suggest a suitable inquiry question which would investigate the impact of climate change on a local coastal area.
2. Identify two websites that would provide useful information to answer the inquiry question from Question 1.
3. Access the Climate Central website. Select 'Our work' and 'Coastal risk screening tool'. Choose the 'Warming choices' map. What information does this map provide? What is predicted to happen for various stages of warming in your local area?
4. Collect data from your local place to identify environments that might be impacted by climate change in the future.

Make it spicy

How has climate *change* impacted liveability and *environmental* quality?

Change, page 228; environment, page 230; planning and collecting, page 410

HOW TO

Where will sea-level rise affect liveability?

One of the greatest impacts of climate change on where people live, and their quality of life, is rising sea levels. The global average sea level has risen 21–24 centimetres since 1880 due to increasing melt water from glaciers and ice sheets, and the expansion of warming seawater.

Small coastal communities

Livelihoods and food sources are lost as farmlands flood, and fisheries fail because coastal ecosystems such as mangroves, the nurseries of the sea, collapse. The most vulnerable people are the poor, who often live on the most flood-prone land and have few other resources. For Indigenous communities, the loss of sacred and culturally important coastal sites means a loss of cultural identity and connection to place.

Coastal cities

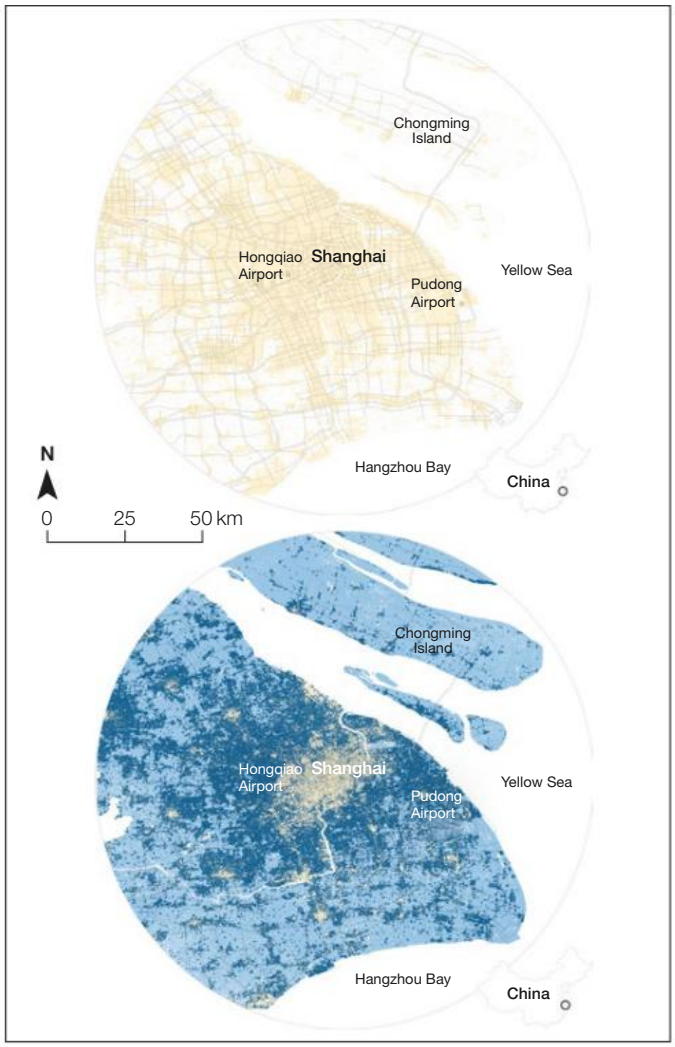
It has been predicted that by 2050, more than 800 million people living in 570 cities will be impacted by sea-level rises of more than half a metre. The largest urban populations vulnerable to flooding are in Asia and include Shanghai, where more than 17 million people are at risk.

Human displacement

Sea-level rise leads to the **forced migration** of millions of people as internally displaced people (within their own nation), migrants to other countries or environmental refugees. An influx of displaced people reduces the liveability of the places where they arrive through increased pressure on resources and lack of permanent housing and employment opportunities. In Bangladesh, 40 million people are at risk of internal displacement if sea levels rise by 1 metre.

Source 1: Urban Miami in Florida could be permanently inundated by the ocean if temperatures increase by 3°C in 2050 (top). Farming communities in coastal Bangladesh already face inundation by the sea (bottom).

Shanghai 2023 and projected water coverage in 2050



Source 2: Shanghai is one of the world's largest cities and largest ports with a population of 29 million in 2023. The city has several large islands and long coastlines crossed by many rivers and waterways that increase its vulnerability to sea level rise. Projections for 2050, with an increase in temperatures of 3°C, show that most of the city would be submerged, including the commercial heart of the city (downtown), airports and large coastal islands. Seawalls have been built along the waterfront, walkways raised, and drainage and water controls put in place to protect people and property.

Source: Guardian News & Media Ltd 2024

Holding back the ocean

Addressing the causes of climate change is the only action that will prevent further rising sea levels and protect the liveability of places. The United Nations is currently committed to help low-lying island nations.

- Retreat: Relocate populations and infrastructure away from the coast.
- Elevate: Create higher land or raise buildings above projected sea levels.
- Block/Defend: Build structures such as seawalls to protect properties.
- Restore: Replant coastal habitats such as seagrasses, coral reefs, kelp and mangrove forests.
- Relocate: Buy land in other countries and plan for relocation.

Learning ladder G4.16

Environment

1. How can you differentiate between areas that are likely to be affected by sea-level rise and those that are safer?
2. What are the key characteristics of coastal ecosystems like mangroves, and why are they important?
3. How does the loss of culturally important coastal sites affect Indigenous communities' sense of identity?
4. How does the flooding of farmlands and fisheries affect local livelihoods?

Strategies for action

1. Describe one way people can overcome the impact of rising sea levels.
2. Explain the current United Nations' approach to help low-lying island nations.
3. Predict how the responses of governments to climate change could affect where people live in the future.
4. Propose two strategies governments could use to protect the liveability of their island nations.

Make it spicy

What cultural and historical significance do coastal *places* hold for Indigenous communities?

HOW TO
Place, page 226; strategies, page 446

Can humans live in extreme environments?

Some of the least liveable places on Earth are mountains, deserts and polar regions. Over time, some people have adapted well to living in these harsh environments. Their bodies have become used to extremes in temperature, or less water or oxygen.

Difficult environments

Some environments have very harsh conditions that make it difficult for humans to survive. They may be extremely hot or cold, or there may be no water or little oxygen to breathe. Polar regions, deserts and high mountains are examples of extreme environments where the few humans who live there have had to adapt to survive.

Polar regions

The Arctic and Antarctica are the Earth's two polar regions. The Arctic is the cold area around the North Pole. One Indigenous group who lives there is the Inuit. The Inuit have adapted their diet, clothing, transport and housing to help them live in the extreme cold.

Antarctica is the coldest, highest and windiest place on Earth. It is the only continent that has no permanent human population. Scientists from Australia, New Zealand and many other countries work and live in scientific stations in Antarctica, where even in summer the temperature can drop to –50°C.

Buildings on Antarctic stations are heated to 18°C. When working outside, people have to wear lots of layers topped with a thick, quilted freezer suit. Hypothermia (lowering of body temperature below normal) and frostbite (freezing of the skin and other tissues) are both dangerous risks.

Antarctic air is so dry that a person's body can lose water just through breathing. A person needs to drink 6 to 8 litres of water per day to stay hydrated while in Antarctica.

Desert regions

Deserts are very dry areas that receive less than 250 millimetres of rain a year. Most people think that deserts are hot places, and in the day many deserts are. But overnight, deserts are cold. Deserts known as 'cold deserts' also have relatively low temperatures during the day.

Places without a water supply are difficult to live in. People such as the Bedouins of the Middle East and North Africa are nomadic – they herd animals around in search of the most productive land. In Chile's Atacama Desert – the world's driest place – the people of the village of Chungungo use fine nets to capture moisture from the sea fogs that pass over the desert. The water droplets drip into large containers and pipes that supply the village with water.

Mountain regions

People living in the high mountains of the world need to adapt to cold temperatures and rugged terrain. Living in mountains also offers unique challenges for breathing. Many visitors to high altitudes suffer mountain sickness caused by the oxygen-thin air.

Source 2: Traditional Inuit people live in the Arctic areas of Alaska, Canada, Siberia and Greenland. The Inuit learnt to make warm winter homes, known as igloos, from snow and ice. They used animal skins and furs to make warm clothing. The Inuit people are unable to grow their own food because the Arctic climate is so harsh, and mostly eat meat from seals, whales, polar bears and caribou. Originally, Inuit used dog sleds for transport, but today they use snowmobiles.

Symptoms range from shortness of breath, dizziness and headaches, which can result in coma or even death.

Groups that have lived in high altitudes for many generations, such as Tibetans and Sherpas in the Himalayas and Quechuan in the Andes Mountains, have developed a genetic change in their blood that allows them to comfortably live and work at high altitudes with less oxygen.

Source 1: Bedouin tribes live in desert areas in North Africa and the Middle East. They have herds of camels and other animals that are well adapted to desert conditions. Their traditional nomadic lifestyle means they frequently move to find scarce resources in the dry desert environment. Bedouin tents are designed to allow air to circulate. Animal hair is used to insulate the tents so they stay cool during the hot days but warm during the freezing nights.

Learning ladder G4.17

Environment

1. Identify what makes an environment 'extreme'. What is the definition of an extreme environment?
2. Describe two examples of people who live in extreme environments.
3. Explain the characteristics of the environment shown in Source 2 and how they affect liveability.
4. Assess the challenges of living in high mountain areas. Why might groups like Tibetans, Sherpas and Quechuan peoples view these environments differently?

Planning and collecting

1. What questions could you ask to find out how people survive and adapt to living in different extreme environments?
2. Choose one extreme environment. What steps would you take to investigate how people live and work there?
3. Use Sources 1 and 2 to summarise how the Bedouins and Inuit have adapted to extreme environments. How might communities need to adapt further as the climate continues to change?
4. Design a simple fieldwork task or survey to explore how people living in or near an extreme environment (such as a desert, alpine, or coastal area) are experiencing the effects of climate change. What questions would you ask or what data would you collect?

HOW TO

Place, page 226

How do I conduct a good inquiry?

Throughout the chapter you have developed knowledge and understanding of liveability. Background knowledge is important as it helps you make connections to new information, ask better questions and consider different perspectives. As you were progressing through the chapter you have been gathering information through highlighting, note taking or responding to the Learning ladder. It is now time to start planning your inquiry! Refer to pages 452–8 for a step-by-step guide to this process.

Throughout the chapter, a range of case studies was presented to apply your learning to real-life events. Review these pages and select a case study to build your inquiry around.

- Why is Vienna the world's most liveable city?, page 346
- Where do First Nations Peoples live?, page 348
- How does Tokyo's railway system enhance liveability?, page 356
- Why is Kyiv an unsafe place to live?, page 360

For your selected case study, complete a 'see, think, wonder' to help build curiosity and develop ideas you may cover in your inquiry.

Remember: A good inquiry will be focused on an aspect of the topic that interests you. It is more than just a research task that you present as a PowerPoint; it is a genuine investigation into something you are wondering about.

See
What do you see?
What are the human and physical characteristics?

Think
What do you think about that?
Where is it?
Why is it there?
When did it occur?

Wonder
What questions does this raise in your mind?
What else do you need to know to understand what is happening here?
What are other people saying about this?

Write down five observations you make when viewing the data presented.

The following are a list of example open-ended questions which may help you to develop your inquiry.

Liveability

- **Descriptive question:** *What factors contribute to the liveability of a town or city?*
- **Procedural question:** *How has the liveability of my local area changed over the past decade?*
- **Comparative question:** *How does liveability in a large city compare to that in a small town?*
- **Evaluative question:** *How effective are green spaces and parks in improving the quality of life in urban areas?*

Level up!

Throughout the chapter you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to attempt new skills. When planning your inquiry, consider how you may integrate geospatial technology into your fieldwork or how you may explore a range of perspectives. Use the How-to chapter to support you in planning and research.

Enhancing liveability

G5

WHY IS COMMUNITY OF PLACE IMPORTANT? 378

HOW DO PEOPLE LIVE IN REMOTE COMMUNITIES? 382

HOW CAN WE ENHANCE AUSTRALIA'S LIVEABILITY? 390

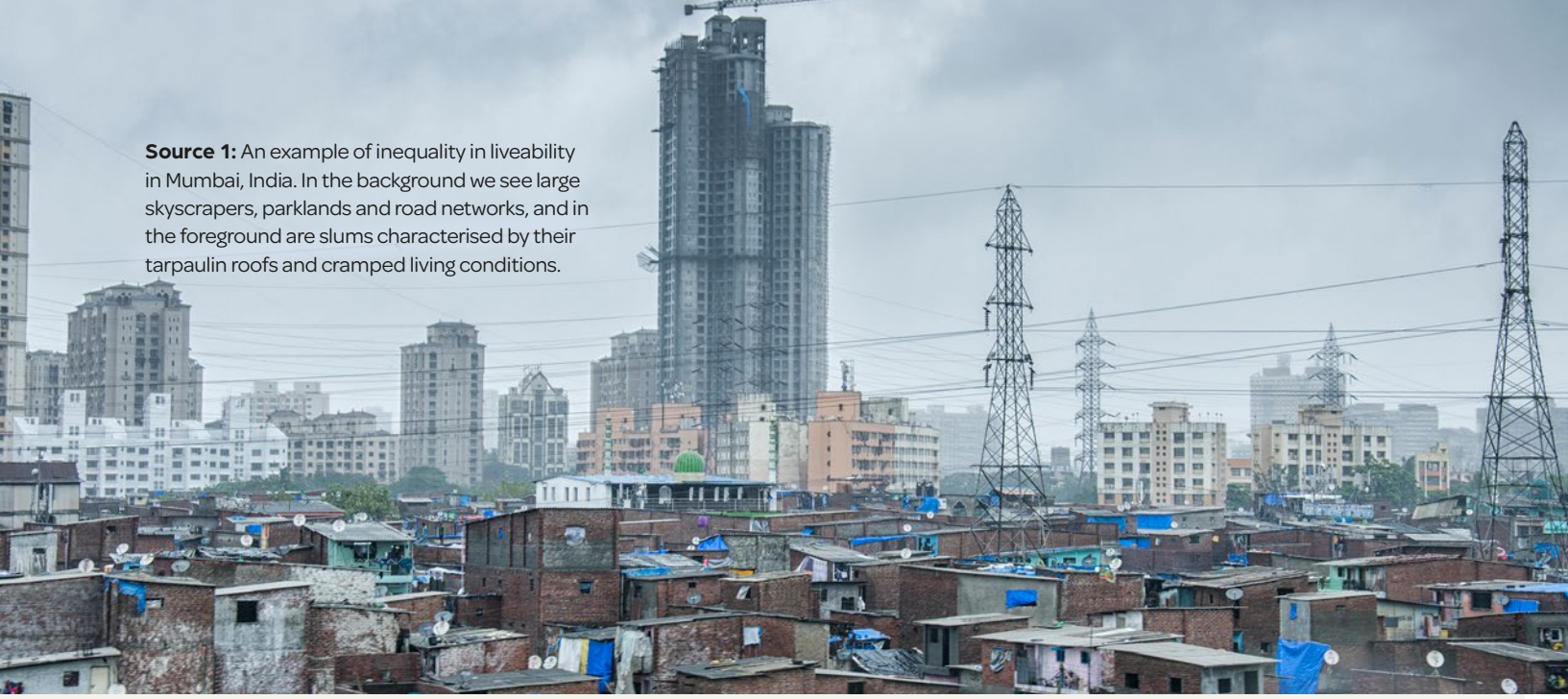
How can I understand enhancing liveability?

Liveability varies between regions. High-income countries tend to have access to resources, high-quality education and advanced health care, while low-income countries may not have the technology and infrastructure to support their growing populations.

Learning ladder

The Learning ladder lists the knowledge and skills you will develop throughout the year, with five levels of increasing difficulty. By mastering foundational knowledge and skills at the lower levels, you will build a solid understanding that prepares you to tackle more advanced concepts and skills as you progress towards the top.

Steps in knowledge progression	Social and cultural influences	Interconnections	Enhancing liveability	Planning and collecting	Representing information
5	I can assess the influence of connectedness on liveability.	I can use interconnections to evaluate liveability.	I can evaluate strategies to enhance liveability.	I can use geospatial technology to record data.	I can follow ethical practices when working with data.
4	I can discuss First Nations Peoples' connection to Culture and Country.	I can predict the impact of interconnections.	I can suggest ways to enhance liveability.	I can gather primary data.	I can use geospatial technologies to create maps.
3	I can explain social cohesion.	I can explain interconnections.	I can predict the impact of liveability enhancement strategies.	I can gather information from reliable secondary sources.	I can use geographic conventions to construct maps.
2	I can describe a community and connectedness.	I can describe interconnections.	I can describe ways to enhance liveability.	I can plan an inquiry.	I can represent data and information.
1	I can identify community characteristics.	I can identify interconnections.	I can identify local places.	I can ask open-ended questions.	I can select data relevant to a question.
	Enhancing liveability			Geographical inquiry	



Source 1: An example of inequality in liveability in Mumbai, India. In the background we see large skyscrapers, parklands and road networks, and in the foreground are slums characterised by their tarpaulin roofs and cramped living conditions.

	Interpreting information	Making conclusions	Strategies for action	Presenting ideas
5	I can use geographical concepts to structure data analysis.	I can evaluate ethical considerations.	I can consider perspectives to evaluate strategies.	I can analyse the implications of phenomena.
4	I can predict change to patterns.	I can assess the reliability of data.	I can design strategies.	I can explain interconnections with data.
3	I can explain distributions and patterns.	I can write evidence-based conclusions.	I can predict the impact of a strategy.	I can support explanations with data.
2	I can describe distributions and patterns.	I can describe the impact of geographical phenomena.	I can explain a strategy.	I can explain the relevance of information.
1	I can read graphs and maps.	I can answer geography questions.	I can describe a strategy.	I can describe phenomena using geographical terms.
		Concluding and decision-making		Communicating

Steps in skill progression

Why is community of place important?

Living in a community brings people together. Being part of a community helps people feel more connected and supported – and makes a place more liveable.

Sense of place

Sense of place is the emotional and personal connection people feel towards a location, shaped by experiences, memories and cultural significance. It encompasses how individuals perceive and attach meaning to a place. The most liveable places are those where everyone feels a strong sense of place and belonging, and are connected to the local **community**.

Connected communities

A community is a group of people who have something in common such as a neighbourhood, a workplace, a school, a sporting club, a music or crafting club, or a language group.

We are all members of many different communities that make our lives more enjoyable. For example, more than 6 million Australians are actively involved in sporting communities. They might play sport at an elite level or just for fun, or they might be a spectator or follow a particular sporting team.

Source 1: Shri Shiva Vishnu Hindu temple at Carrum Downs is a popular community venue for Melbourne's Indian community.

Source 2: Agricultural shows are a way of bringing rural communities together. Local, regional and state shows give an opportunity to showcase livestock and produce. For many people in remote areas, the local show is the highlight of the year – and the focus for the whole community.

Community of place

A **community of place** is a community of people who come together because of where they live, work, visit or spend time.

People living in remote or rural areas need the support and sense of belonging to a local community to overcome the isolation of where they live. Places such as schools, churches, recreational clubs, cafes and hotels are important meeting points for country people. Community events – such as rodeos, agricultural shows, festivals, sporting events and social celebrations – are important to help overcome the loneliness felt by many people on the land.

Cultural communities

People are often attracted to a place where they know there are other people from the same cultural background. Half of Australia's population was either born overseas or has a parent who was born overseas. So some people find specific rural towns – and specific suburbs in some cities – are more liveable for them because they know there are other people living there who share their language and culture.

Cultural communities often share the same religious beliefs. Melbourne has Australia's largest Indian community, so Hinduism, which is India's biggest religion, has become Melbourne's fastest-growing religion. Belonging to a religious community helps make places more liveable for new Australians who have migrated from another country.

Learning ladder G5.1

Social and cultural influences

1. Source 1: List the characteristics of this place.
2. Source 2: Why are opportunities for interconnection through a community of place even more important for people in rural communities?
3. Describe what factors contribute to the community of place in your region.
4. How does connection to Country describe First Nations Peoples' connection to place?

Presenting ideas

1. Where do you feel a strong 'sense of place'?
2. Why is the information about the emotional connections people have to their communities relevant when discussing liveability?
3. Using examples from your own life, explain the importance of developing connections to community for liveability.
4. Source 1: Explain the interconnection between religion and sense of place.

Make it spicy

Define the term 'community of *place*'.

HOW TO

Interconnection, page 227; place, page 226; presenting ideas, page 449

Case study

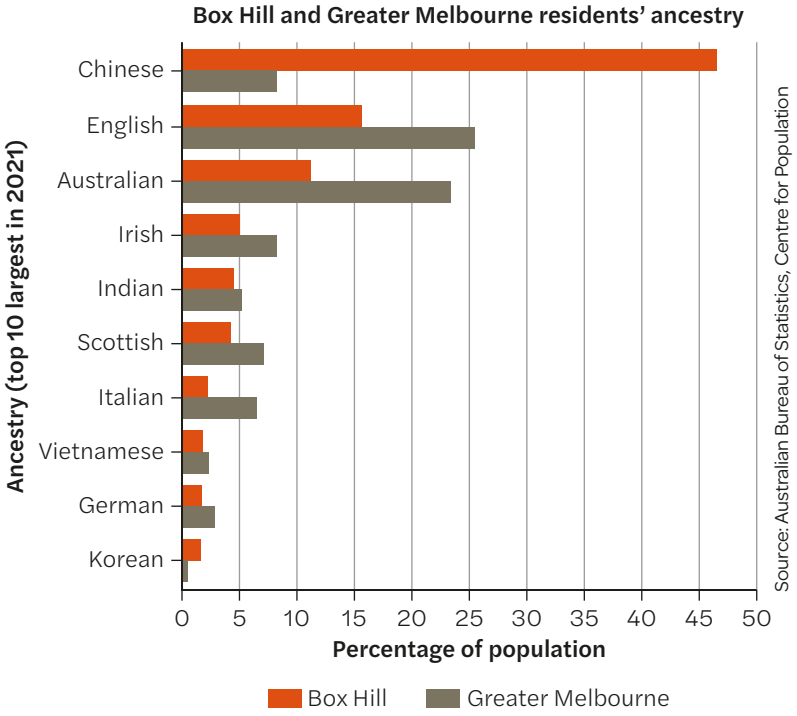
How has the Chinese community developed in Box Hill?

Box Hill has one of the highest concentrations of Chinese-born residents in Australia, at more than 12 times the national average.

Chinese community in Box Hill

Thirty-two per cent of Box Hill's residents were born in China. Proximity to the CBD, public transport, shops and education facilities make this eastern suburb of Melbourne an attractive place to live.

The high concentration of Chinese people in Box Hill has transformed the suburb. Shops display Asian languages, food stores and restaurants provide a wide range of Asian foods, and many staff in services such as banks speak Mandarin and Cantonese. The influx of Chinese migrants has significantly changed the characteristics of central Box Hill, creating more familiar environments for new arrivals.



Source 2: Ancestry of Box Hill residents compared to all of Melbourne

Source 1: Older adults play the traditional Chinese board game called mahjong at the Box Hill Senior Citizens Club.

Source 3: The annual Lunar New Year Festival held at Box Hill honours age-old traditions through traditional dances, decorations and Asian cuisine.

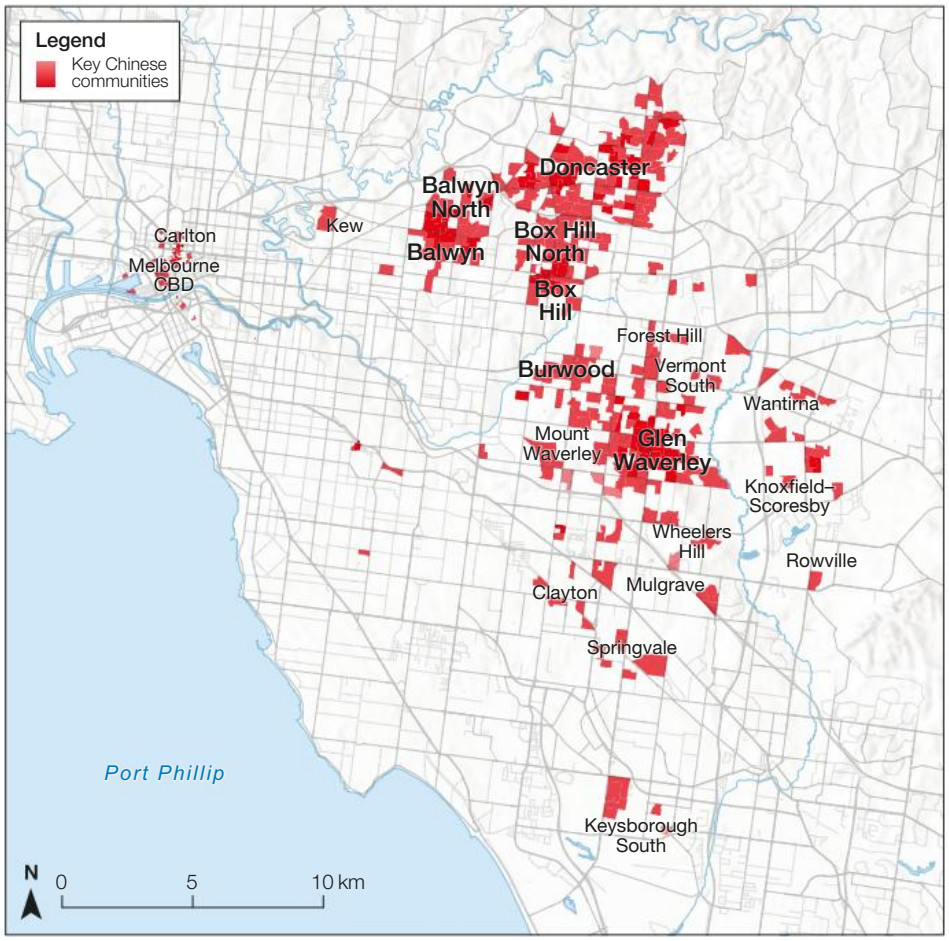
Box Hill census 2021

Country of birth	Box Hill %	Victoria %
Australia	32	65
China	32	3
Malaysia	6	1
India	5	4
Vietnam	2	1

Home language	Box Hill %	Victoria %
English	33	67
Mandarin	34	3
Cantonese	9	1
Korean	2	0.5
Hindi	1	1

Source 4: Cultural diversity statistics comparing Box Hill to Victoria from the 2021 Census conducted by the Australian Bureau of Statistics

Melbourne geographic distribution of Chinese ethnic groups



Source: Matilda Education Australia

Source 5: The relative majority of Chinese ethnic groups live in the eastern suburbs of Melbourne.

Learning ladder G5.2

Social and cultural influences

1. Sources 1–3: Identify the characteristics that make Box Hill a community.
2. Source 3: How do cultural events and festivals help connect locals?
3. Explain how the changes to Box Hill over time have led to social cohesion for Chinese-born residents.
4. How does multiculturalism impact liveability of a place?

Interpreting information

1. Source 2: Rank the top four ancestral origins for people living in Greater Melbourne.
2. Source 5: Describe the distribution of Chinese communities in Melbourne.
3. Source 4: Explain why language spoken at home is important to consider when developing a liveable community.
4. Source 5: Predict how other places may change over time as a result of cultural diversity.

Make it spicy

How have communities *changed* Box Hill over time?

Change, page 228;
interpreting information, page 428

HOW TO

How do people live in remote communities?

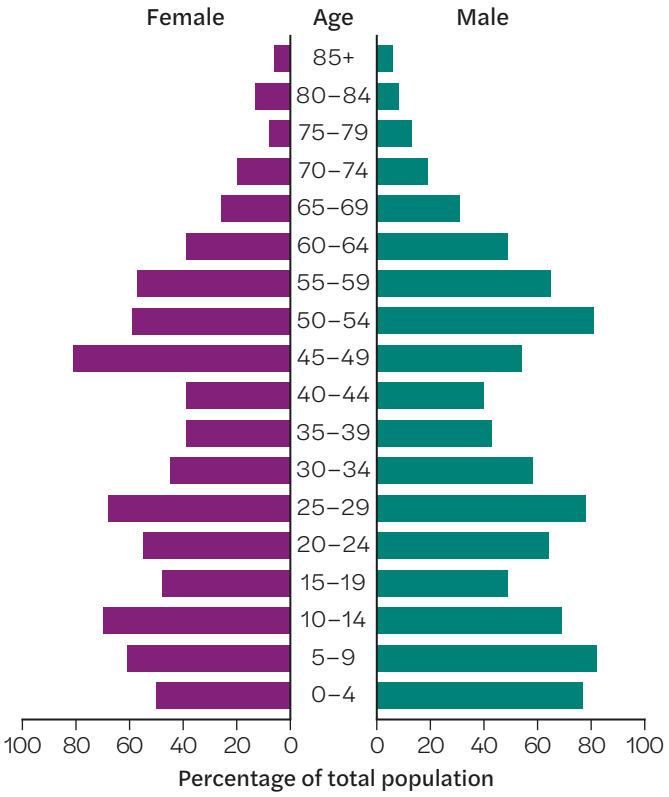
Rural and remote communities like Brewarrina depend heavily on community and school initiatives to staff and support environmental programs that ensure the liveability of their towns and the maintenance of cultural integrity.

Brewarrina

Brewarrina is a remote community located in the outback region of north-west New South Wales on the banks of the Barwon River. The town is located on the traditional lands of the Muruwari, Ngemba, Weilwan and Yualwarri Peoples.

In 2021 the town had a population of 1339 people, with more than 50 per cent of the population identifying as Aboriginal. The population of the town has declined by 40 per cent over the past 25 years.

Population pyramid for Brewarrina, NSW, 2017



Source: Matilda Education Australia

Source 1: Age/sex profile for Brewarrina in 2017

Barwon River fish traps

The Barwon River cuts through the town of Brewarrina and then meanders through parts of western New South Wales, feeding downstream into the mighty Darling River. This river sustains the broader community in many ways but was established by First Nations Peoples long before non-Indigenous people came to the area.

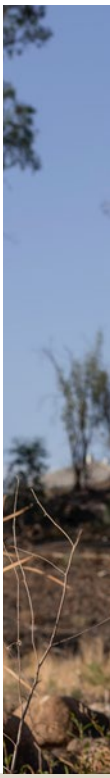
The Barwon River flows through the oldest built structure on Earth at Brewarrina, the Ngunnhu (Aboriginal fish traps). Ngunnhu's dry-stone rock weirs and fish-holding pens allowed large numbers of fish to be sustainably herded and caught, particularly during spring migrations. Archaeologists estimate the Ngunnhu to be more than 40 000 years old.

Today's custodians (caretakers) are the Ngemba people. As the key custodians of the fishery, maintenance and use of the fish traps is shared with other First Nations communities in the area, including the Barabinja, Morowari, Paarkinji, Ualarai, Weilwan and Kamilaroi peoples. Ngunnhu provides tourists with a range of experiences that include story sharing about the complex river hydrology, fish ecology and Aboriginal connections to this special place in western New South Wales.

Ecosystems under threat

Introduced to the Barwon River, fish like carp are a key threat to ecological communities and the fish trap structures if they undermine riverbanks. Carp feeding behaviours have led to reduced clarity levels in the Barwon River.

A number of native fish species have become threatened: trout cod, Macquarie perch, silver perch, southern purple-spotted gudgeon, olive perchlet, Murray hardyhead and southern pygmy perch.



All these species are declining in numbers as a result of the ongoing competition these carp bring to a number of rivers in Australia. Each year the community at Brewarrina has a big river clean-up, and undertakes regeneration programs such as the supply of native fingerlings to the waterways. The aim is to increase the number of native fish in the Barwon River as a longer-term management strategy.

Living and working in Brewarrina

Burra McHughes is an 'on-call' firefighter with New South Wales Fire and Rescue. Employing First Nations people and working interculturally is an important way for councils like Brewarrina Shire to work 'both ways' and develop respectful relationships with local First Nations knowledge holders.

Burra works on community and council initiatives that focus on improving the liveability of his community through a range of land and water management strategies. Some of this is done in his volunteer roles and others are a result of his work activities with Brewarrina Shire Council.

Burra was successful in winning a position to be part of a small team to travel to Canada to learn about other global First Nations communities and share his growing knowledge about traditional burning methods back in Australia. First Nations communities in Australia have used cultural burning as part of larger land-management practices for at least 65 000 years as just one way communities care for Country.

Source 2: Burra McHughes is team leader of one of New South Wales' first Indigenous fire crews.

Source 3: Introduced species like carp can cause problems in natural ecosystems.

Learning ladder G5.3

Social and cultural influences

1. Whose Countries is the town of Brewarrina located on?
2. Who are the Traditional Custodians of Ngunnhu, and what are they responsible for?
3. Why was it important for Burra McHughes to travel overseas to share First Nations practices of cultural burning?
4. How does an introduced species such as carp impact the liveability of a place?

Strategies for action

1. Describe how the local community is working to improve the quality of the Barwon River.
2. Does access to knowledge exchanges improve the liveability of places?
3. Source 2: How seriously does Burra McHughes take his responsibilities of Aboriginal Custodianship of Country? Provide examples of how he is making a difference.
4. Design a new program that supports the teaching of First Nations' practices and land management to increase remote liveability.

Make it spicy

What are the difficulties of living in remote *places* such as Brewarrina?

HOW TO

Place, page 226; space, page 224; strategies, page 446

G5.4

Case study

How did the pandemic increase community isolation?

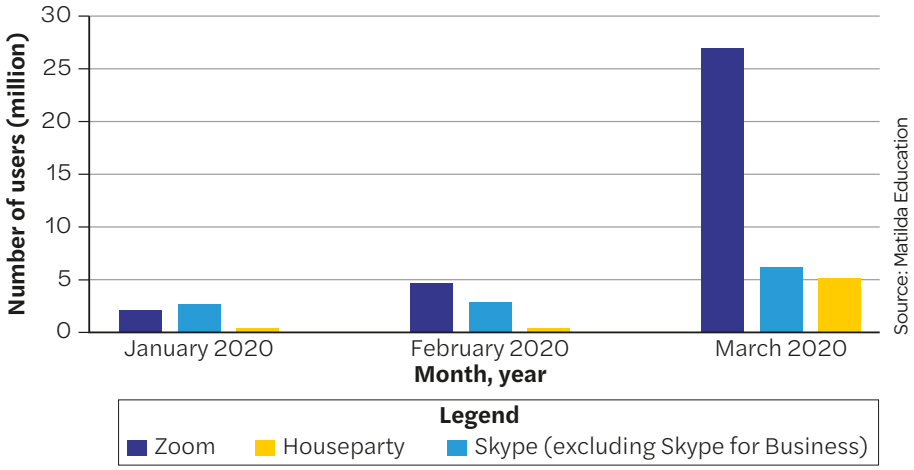
Loneliness is increasingly seen as a public health issue. In 2022, around 20 per cent of Australians (aged 15 and over) reported feeling lonely. Loneliness is most common among young adults (under 25) and older adults (over 65).

During the COVID-19 pandemic, Melbourne experienced significant lockdowns and social distancing measures. This reduced social connectedness, particularly among youth, and led to increased community isolation and decreased liveability. Studies conducted in 2020 reported that over 45 per cent of survey respondents were experiencing loneliness.

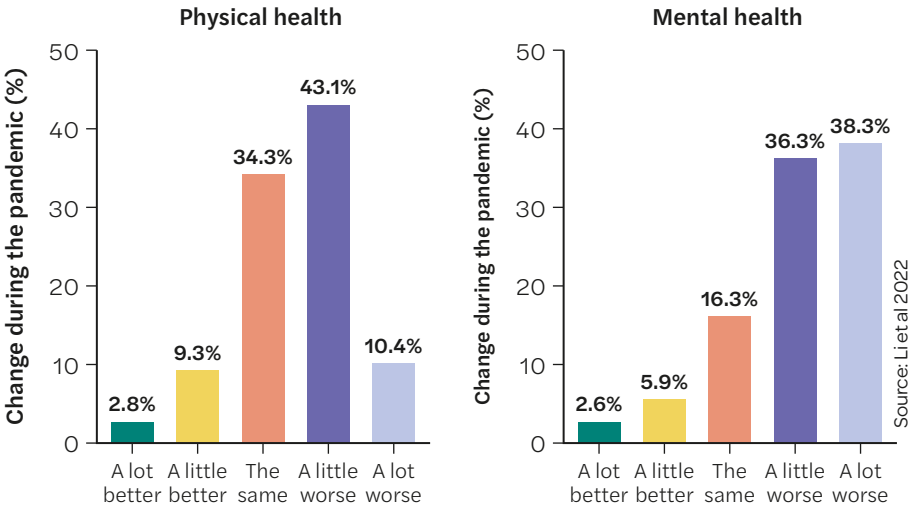
Increased isolation

As the lockdowns continued, feelings of loneliness increased, with around 75 per cent of young Australians reporting feeling isolated. The restrictions on movement and gatherings meant that they were unable to attend school, sports or social events.

The Royal Children's Hospital Melbourne found that the number of young people seeking mental health support increased by 30 per cent during the pandemic. Many reported heightened anxiety and depression linked to isolation and the disruption of their regular routines and social interactions. Online school, texting and video chatting with friends and family became more important to ensure that everyone remained connected in some way and felt a sense of virtual community.



Source 1: Use of online meeting platforms and apps, such as Zoom, exploded during the pandemic to ensure workplaces, schools and communities could stay connected and move forward.



Source 2: Feelings of loneliness and reduced physical and mental health were reported in young people during the lockdowns.

Older people

Before the COVID-19 pandemic, loneliness and social isolation were already common among older adults. Studies showed that up to 40 per cent of older people (over 65 years old) in countries like the United States, Europe and China felt lonely or had few social connections. The pandemic made things worse, with 'social distancing' keeping many older adults from seeing their family or friends for long periods of time, and many within care facilities being isolated to their rooms to prevent viral spread. Such isolation can have serious health effects, including increased rates of depression and poor sleep. Online classes and even chatting through windows became commonplace to try to maintain important connections with loved ones.

Source 4: In Melbourne, the 'Ring of Steel' was enforced from July 2020 to November 2020, involving more than 500 police officers managing checkpoints and inspecting more than 150 000 vehicles.

Source 3: Playgrounds were also closed to limit virus spread, impacting children's physical outside activity and socialisation, and contributing to increased stress and isolation among families.

Learning ladder G5.4

Interconnections

1. How did social distancing measures impact different age groups in the community?
2. Describe the interconnection between online learning and the sense of community among students during the pandemic.
3. Create a pros and cons list for the lockdowns experienced by Melbourne during the pandemic. For each point, explain the impacts on people and place.
4. Predict what may have happened if the government did not enforce nation- and state-wide restrictions.

Interpreting information

1. Source 2: How do these graphs illustrate the changes in feelings of loneliness among young people? What key data points stand out to you?
2. Source 1: Describe the change in usage of online platforms such as Zoom and Microsoft Teams during the pandemic.
3. How did the restrictions imposed during the pandemic affect the distribution of youth activities, such as sports and social events, in Melbourne?
4. How might the patterns of social interaction among youth change in the future as a result of the isolation experienced during the pandemic?

Make it spicy

What *changes* in community behaviour and interactions were observed as a direct result of the pandemic restrictions on gatherings and social events?

HOW TO

Change, page 228; interpreting information, page 428; PQE, page 438

What are the challenges for liveability in Melbourne?

While Melbourne has frequently been celebrated as one of the most liveable cities globally, it still faces a number of challenges that impact its overall liveability for particular groups of people.

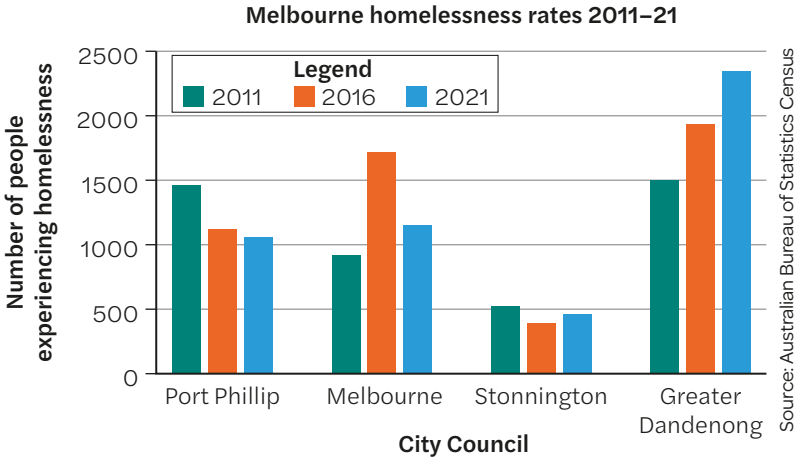
Cost of living

The 'cost of living' has been referenced frequently in the media over the past few years. It references how the prices of everyday or essential items and services are increasing. This puts pressure on people to use more of their income for their daily needs. The cost of living has had a range of impacts on the liveability of Melbourne. In Victoria, the rate of recorded theft offences has increased by 17 per cent over 12 months in 2023–24, which has been linked to cost of living pressures. While the overall crime rate in Melbourne remains low compared to other major cities, certain areas have experienced higher crime rates, affecting residents' sense of safety and security.

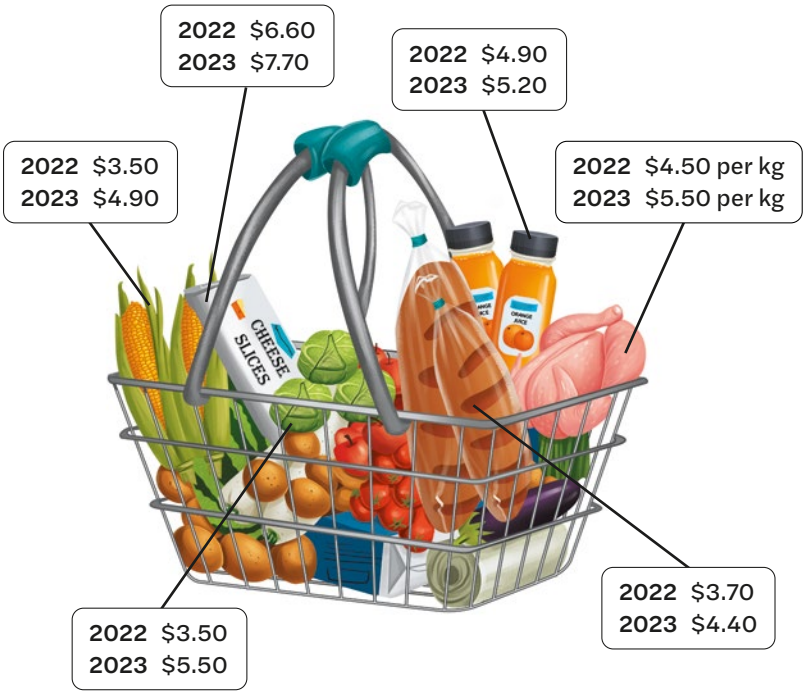
The 2021 Census found that homelessness in Victoria had risen by 16 per cent since 2016. In Melbourne, more than 1300 people are estimated to experience homelessness on any given night. The increasing cost of housing and a lack of affordable accommodation contribute to this crisis.

Spatial wealth

In 2020–21, the richest 1 per cent of people in Melbourne earned 10.3 per cent of the city's total income. Economic, social and digital inequalities continue to be a challenge with unequal access to education, employment, social services, and reliable internet and mobile services for residents. This is referred to as **spatial wealth**. The wealthiest neighbourhoods in Melbourne have six times more access to education, 10 times more social support, and more than three times the number of jobs compared to the least advantaged areas.



Source 1: Access to affordable housing, food and resources, as well as physical and mental health services, is vital to reduce rates of homelessness in Melbourne.



Source 2: The cost of living has increased dramatically in Melbourne. It is harder for families to afford the weekly shop and pay for activities and services.

Source 3: Transport service gaps create issues for people living in outer Melbourne suburbs.

Efficiency of transport

As the population of urban spaces increases, so does traffic congestion, pollution and pressure on local infrastructure and services. There is a gap in public transport access and reliability between Melbourne's inner and outer suburbs. Only around 52 per cent of Melbourne's population has access to all-day frequent services near their home. Access to public transport is reported to be up to 27 per cent lower in lower income suburbs, reducing connectivity and access to essential services and facilities.

Other transport options, such as bike-sharing schemes, have also faced significant issues, including high operational costs and low usage. In 2019, Lime's data showed just 1000 daily rides from a 600-scooter fleet. Vandalism also plagued the services, with more than 100 scooters being found dumped in the Yarra River within the first few months of operation.

Learning ladder G5.5

Interconnections

1. List some challenges for liveability in Melbourne.
2. How are higher living costs connected to the rising crime rates in certain neighbourhoods?
3. How does the efficiency of transport options impact the overall quality of life for Melbourne residents?
4. Source 2: What are some of the possible long-term effects of rising costs of living on families in Melbourne?

Making conclusions

1. What is meant by 'cost of living'?
2. How does the concept of space help us understand wealth?
3. Source 3: How does the information about infrastructure gaps help us understand liveability in different places in Melbourne?
4. Source 1: How reliable are Melbourne's homelessness data?

Make it spicy

Research ways in which physical *environment* contributes to the challenges faced by people experiencing homelessness in Melbourne.

HOW TO

Environment, page 230; making conclusions, page 443; space, page 224

G5.6

How can we enhance global liveability?

Countries around the world have different challenges to improve the liveability of places for their people. Those challenges depend very much on where you live.

Different challenges

In poorer **low-income countries**, some of the challenges to improve liveability are to provide a secure supply of food, give access to clean water, provide somewhere for people to shelter, and supply education for all.

In richer **high-income countries**, governments are solving problems such as reducing travel times, improving technology, developing entertainment facilities and making places greener and more sustainable.

Low-income countries

Low-income countries have an income of $1045 or less per person, per year. The percentage of people living in low-income countries has fallen by more than 80 per cent.

In 1994, there were 64 low-income countries. By 2023, there were just 28 countries classified as low-income countries by the World Bank. Most low-income countries are now in Africa – the only low-income countries outside Africa are Afghanistan, North Korea, Syria and Yemen.

Improving young lives

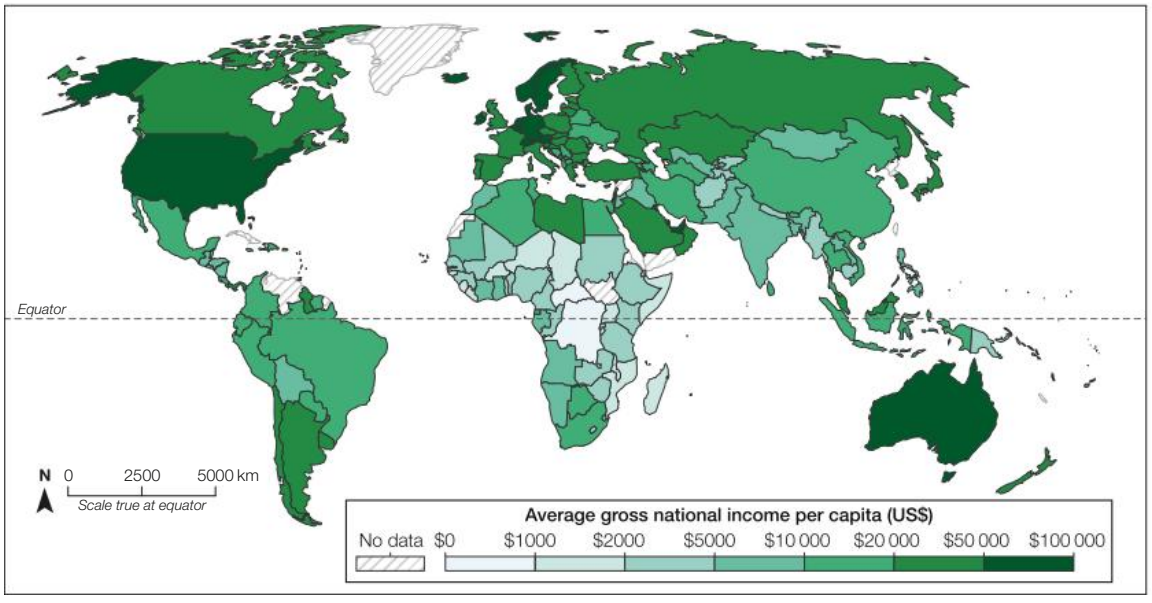
Ninety per cent of people aged between 10 and 24 live in low-income and **middle-income countries**. In general, young people in these countries have less access to education, health care and good work opportunities than young people in high-income countries. Children in low-income and middle-income countries also tend to have more family responsibilities than children in high-income countries.

Young women in low-income and middle-income countries face extra challenges. About 90 per cent of births to teenagers occur in low-income and middle-income countries – and the leading cause of death for young women aged 15 to 19 in low-income and middle-income countries is complications from pregnancy and childbirth.

Education is the key to improving the lives of people in low-income and middle-income countries:

- A child born to an educated mother is twice as likely to survive to the age of five.
- Educated mothers are 50 per cent more likely to immunise their children against disease.
- Individual earnings increase by 10 per cent for each year of school completed.

Gross national income per capita 2021



Source: Our World in Data

Source 1: Gross national income per head of population in 2021. Gross national income is the total amount of money earned by a nation's people and businesses.

Source 2: Students at a primary school in Kenya are having a lunch supplied by a school feeding program. Students receive a healthy meal, which is extra encouragement to come to school each day.

School feeding programs

Statistics from the United Nations show that 66 million primary-school-aged children in the world go hungry every day – with 23 million of these hungry children living in Africa. Further, 75 million school-aged children do not attend school – of these, 55 per cent are girls and 47 per cent live in Africa.

To overcome this, feeding programs have been set up to supply meals for children who attend school. Meals are given to children at school during morning and afternoon meal and snack times. These meals might be a bowl of porridge or some crackers rich in nutrients. Families whose children regularly attend school might also receive packs of basic food items, such as rice and cooking oil.

School feeding programs provide both educational and health benefits to the most vulnerable children in the world. They reduce hunger, improve the health of children, increase the numbers of children at school – and give parents a reason *not* to send their child to work.

School feeding programs in low-income countries often begin through funding by **humanitarian organisations** such as the United Nations World Food Programme. Schools have also been used to introduce other health programs, such as health education.

Learning ladder G5.6

Enhancing liveability

1. Source 2: Identify the place photographed.
2. Source 2: Describe how school feeding programs operate.
3. Predict the roles non-government organisations such as World Vision may have on liveability in low-income countries in the future.
4. Suggest other ways global liveability could be improved.

Planning and collecting

1. **a** What are some of the challenges low-income countries face to improve liveability?
   b What are some of the issues that high-income countries are facing to improve liveability?
2. What data would be most beneficial to collect when trying to understand the importance of actions in low-income and high-income countries to improve liveability?
3. Research and evaluate the role of a non-government organisation such as World Vision to improve liveability in low-income countries.
4. Source 1: How might geographers have collected the data displayed on this map?

Make it spicy

How has the number of low-income countries *changed* since 1994?

HOW TO Change, page 228; planning and collecting, page 410

G5.7

How can we enhance Australia's liveability?

As Australia's cities grow and change, governments and urban planners are working to make cities more liveable.

For people who live in cities in high-income countries, this means:

- reducing transport times
- creating and protecting open space
- providing resources for recreation and entertainment
- providing affordable housing
- making sure there is work available
- providing a clean and sustainable environment.

Transport

As cities grow, traffic problems increase – as well as noise and air pollution. Australian cities have largely been designed for cars.

To manage the increasing number of cars on the road, urban planners have introduced a number of measures to control city traffic. These include:

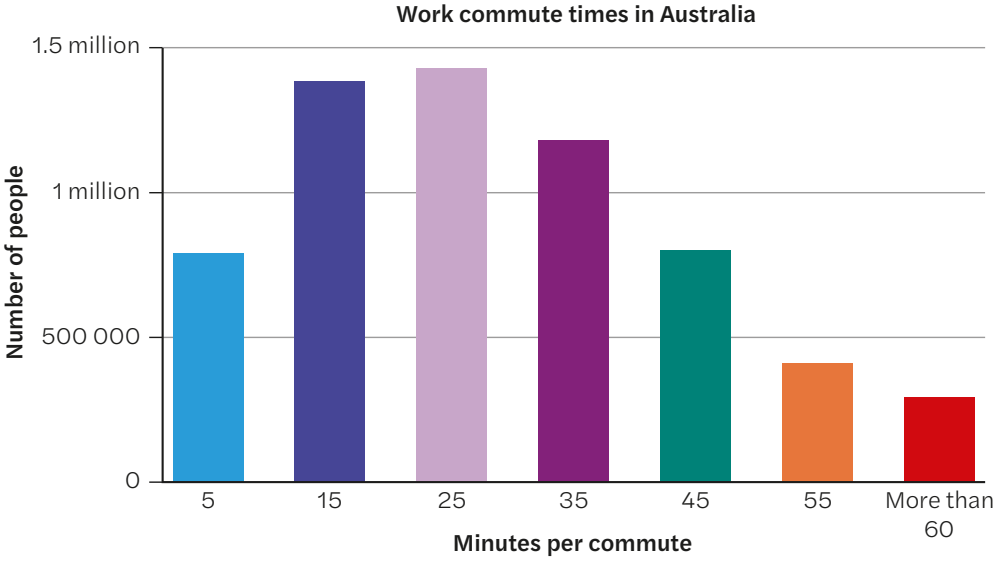
- introducing special traffic lanes for cars with passengers
- introducing 'park and ride' systems to encourage drivers to park their cars and travel into the city by bus, train or tram
- banning cars from the central business district and allowing only public transport, pedestrians and bicycles
- charging car drivers a toll when they enter the city centre
- restricting the times or days people can access the city by car.

Effective public transport systems are those within easy walking distance and that provide a frequent and convenient service.

Open space

In liveable communities, most people live near an open space such as a park or playground. Parks provide green spaces in urban areas for plants and animals – they also cool urban areas and purify the air. For nearby residents they provide a space for activities such as exercise, ball sports, jogging and walking dogs.

The inner-city area of Prahran in Melbourne has among the least open space per head of population in Victoria. Stonnington Council invested $60 million to build an urban oasis on top of a car park. The community space, completed in 2019, is 9000 square metres in size and features a forest, gardens, lawns and water features, as well as spaces for community events.



Source 1: It is common for Australians to travel more than an hour to get to work each day. Since the COVID-19 pandemic, the rise in working from home has made it easier for some people to have flexible working arrangements, reducing their time spent commuting.

Source: Matilda Education Australia

Source 2: The Marina Reserve in the inner-city Melbourne suburb of St Kilda is community space that has been created for young people. It includes a huge skatepark and an off-leash dog area.

Resources for youth

In planning to make cities more liveable, the views of young people need to be considered. Public transport needs to be safe and reliable, and it needs to service local schools and shops, as well as sports and entertainment facilities.

Public spaces and facilities need to be designed to cater for the interests of young people. Young children need playgrounds and parks. Teenagers require sports grounds, stadiums, skateparks, mountain-bike tracks, cafes, cinemas and music venues.

Educational facilities need to be designed to cater for different types of learners, with flexibility in learning spaces and freely available technology, such as wi-fi and fast internet.

Source 3: The original artist's impression of the urban park on top of a car park in Prahran, Melbourne. In urban areas, parks provide healthy green spaces for residents to enjoy.

Learning ladder G5.7

Interconnections

1. What factors are interconnected with liveability at a national scale?
2. Source 1: Describe the interconnection between commute times and liveability.
3. Explain the interconnection between access to open space and liveability.
4. Source 3: Predict the impact of urban parks on liveability in Melbourne.

Strategies for action

1. Source 3: Describe the change that has taken place on the roof of this car park.
2. Source 2: Explain why changes to the Marina Reserve were made in this inner-city suburb.
3. Source 2: Predict the impact of this strategy on the local community.
4. Design a strategy to improve liveability for youth in your local community.

Make it spicy

Why is providing a clean and *sustainable environment* important for liveability?

HOW TO

Environment, page 230; interconnection, page 227; SHEEPT, page 440; strategies, page 446; sustainability, page 234

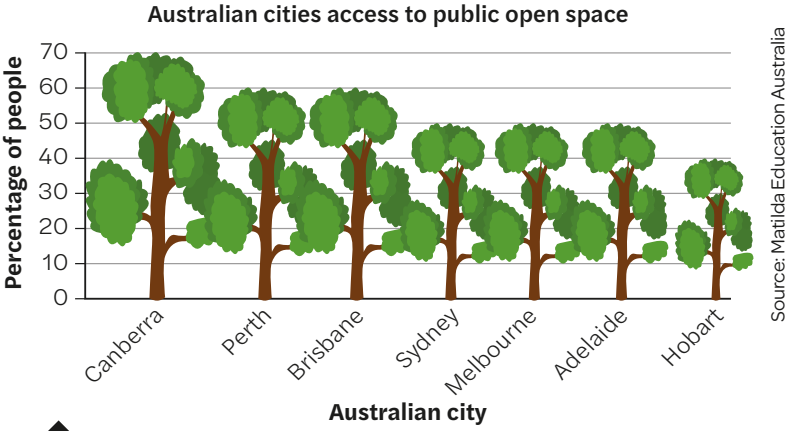
Is Canberra the world's most sustainable city?

In 2021 Canberra was named the most sustainable city in the world in a study conducted by UK company Uswitch. The study scores cities according to sustainability measures such as energy, transportation, affordability, air quality, carbon dioxide emissions and green space.

Measuring sustainable cities

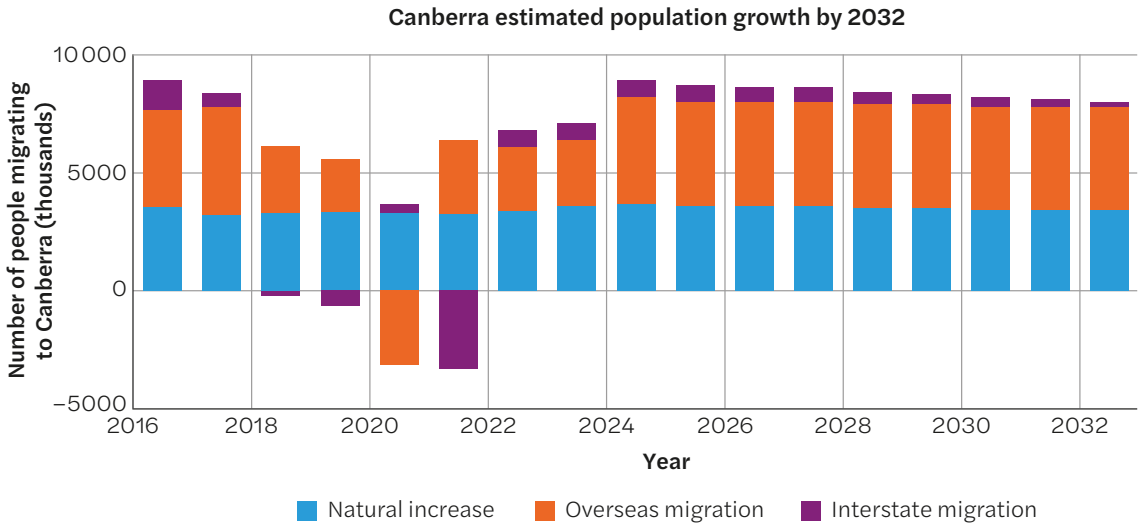
Canberra was named the world's most sustainable city according to a report published by UK comparison company Uswitch. Canberra scored highly in the rankings due to the fact that all of its energy comes from renewable resources generated from nearby solar and wind farms. Madrid in Spain was listed at number two and Brisbane in Queensland was ranked at number three. Cities were assessed on a range of sustainability measures:

1. **Transportation infrastructure**: Canberra ranked number one for this measure, with 88.6 per cent 'green' transport services. Public transport is fast and ride-sharing services reduce traffic.
2. **Energy**: Canberra uses 100 per cent renewable energy. About 5 per cent of electricity is produced by local solar farms and the rest is provided from wind and solar providers throughout Australia.
3. **Housing availability and affordability**: Canberra only improved housing availability a little, and needs to improve in this measure of liveability.
4. **Pollution and air quality**: Canberra has low pollution levels, with a score of 13.89, meaning out of every 100 particles of air, only 13.89 are polluted. Canberra came in second behind Wellington in New Zealand for this measure.
5. **Carbon dioxide emissions**: Canberra's use of renewable energy drives low carbon emissions. The Australian Capital Territory government aims to have net-zero carbon emissions by 2045.
6. **Green space**: Canberra has 353 square metres of green space for each of its residents, whereas Sydney has 81 square metres and Melbourne has 116 square metres.



Source 1: Percentage of people living within 400 metres of public open space of 1.5 hectares or more in Australian cities

Source 2: The National Arboretum in Canberra contains more than 44 000 rare and endangered trees across a 250-hectare site.



Source 3: Canberra's estimated population growth

Source: Australian Bureau of Statistics, Centre for Population

Source 4: The Mugga Lane Solar Park in Canberra contains 53 000 solar modules and generates 24 500 megawatt hours of electricity to power more than 3000 homes.

Learning ladder G5.8

Interconnections

1. Give three different examples of green space. One form is shown in the oblique aerial view of Canberra's National Arboretum in Source 2.
2. Describe the interconnection between environmental sustainability and liveability.
3. Explain why Canberra rated highly in the sustainability rankings.
4. Source 3: Explain how the projected population growth of Canberra by 2032 may impact ongoing liveability.

Representing information

1. List the criteria used to judge the sustainability of world cities according to Uswitch.
2. Create an infographic that highlights how Canberra met the six sustainability measures.
3. Source 2: Create a sketch map of this space. Annotate the key features that contribute to the sustainability and liveability of Canberra.
4. Create a Google My Maps and annotate the key characteristics of Canberra that make it liveable.

Make it spicy

Is Canberra the world's most *sustainable* city?

HOW TO

Interconnection, page 227; mapping with BOLTSS (NA), page 424; representing information, page 420; SHEEPT, page 440; sustainability, page 234

G5.9

Case study

What is the local council's role in improving liveability?

Local councils play an important role in enhancing liveability through the development and maintenance of infrastructure and services. In Victoria, councils are actively involved in a range of projects, including upgrading roads and revegetating public spaces.

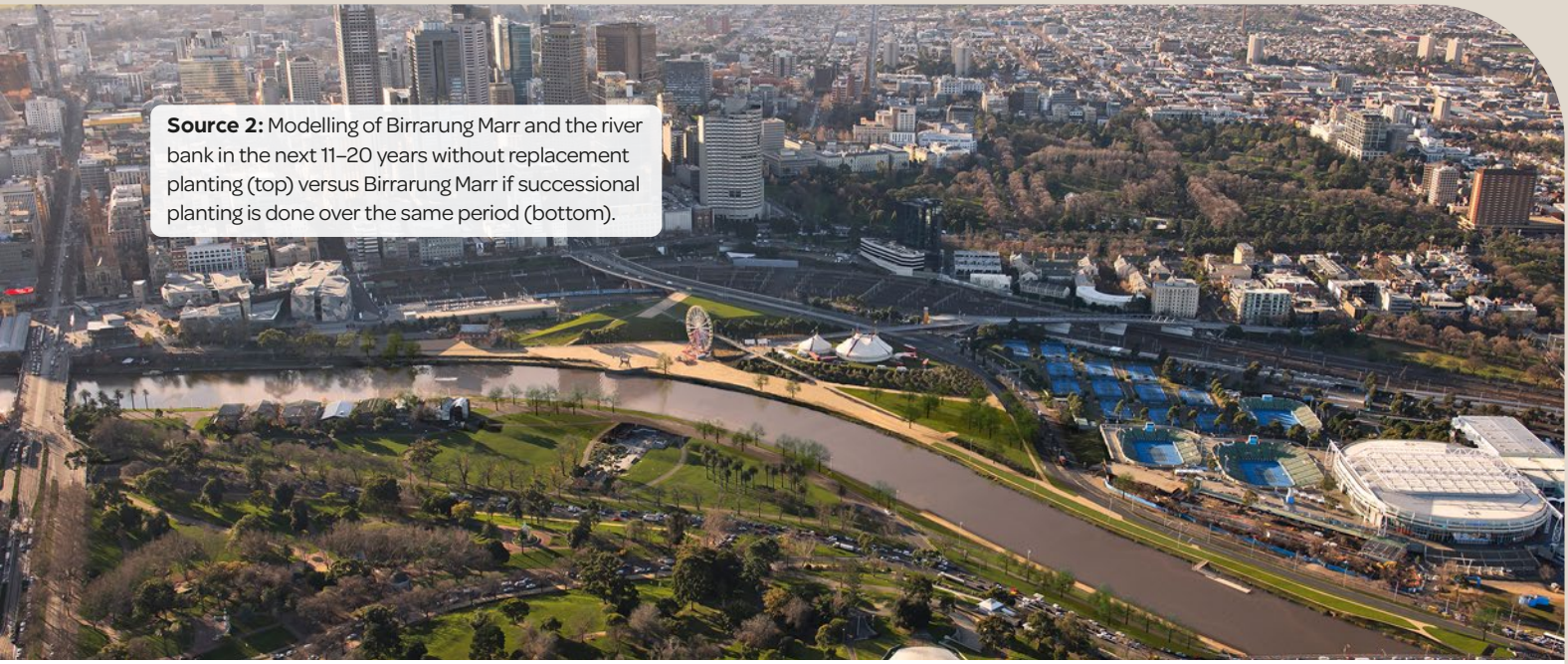
Upgrading roads

The Cardinia Sealing the Hills project aims to seal and upgrade road networks in the local area. Since 2021, the Cardinia Council has sealed seven roads across the townships of Beaconsfield Upper, Cockatoo, Emerald and Gembrook. A further 38 dirt roads are earmarked for sealing in the future. Around 85 per cent of this project is funded by the Australian Government, while the remaining costs are paid by the local council and property owners using a Special Charge Scheme.

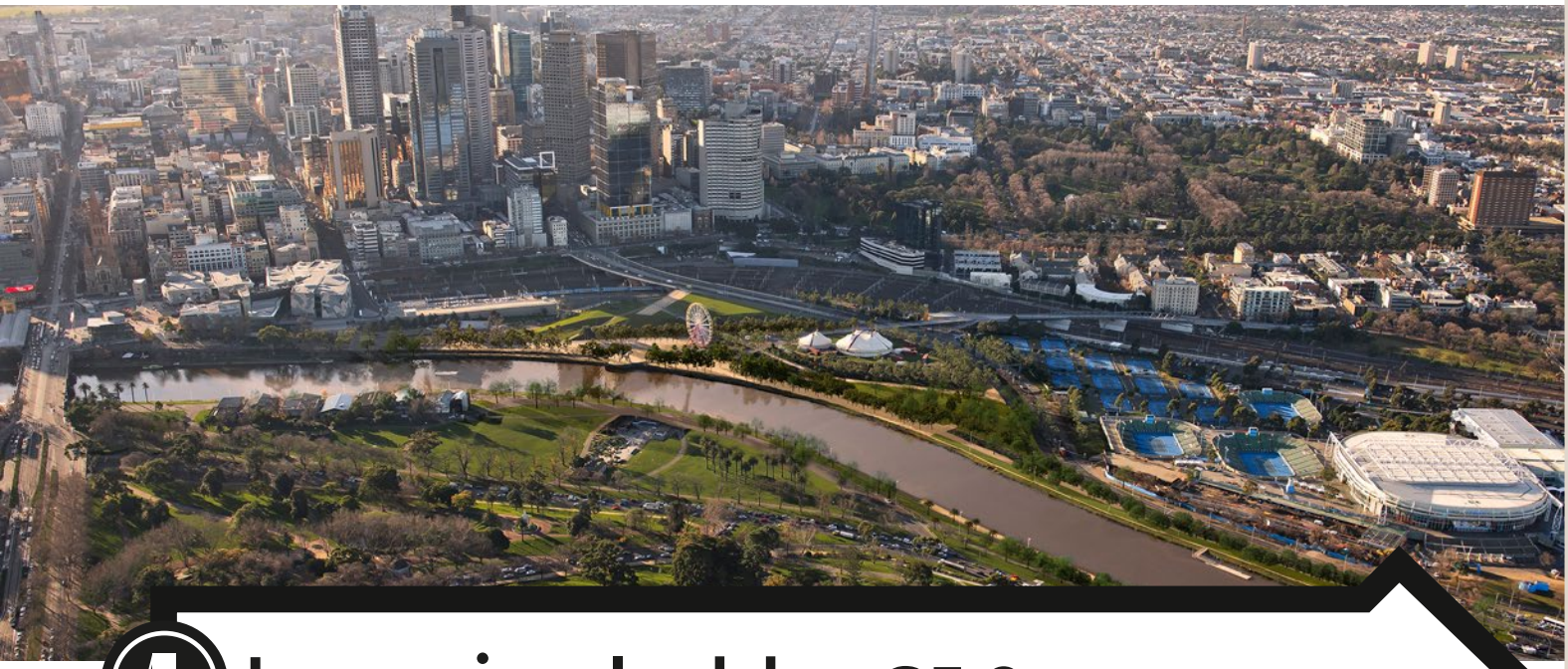
Revegetation projects

Councils engage in revegetation projects to improve environmental quality and green space availability. The City of Melbourne has implemented the Urban Forest Strategy, which aims to increase canopy cover by up to 40 per cent by 2040. This strategy includes maintaining the health of existing trees, and increasing the diversity of tree species planted and the soil moisture. The strategy presents potential benefits for enhancing urban cooling and air quality, while also encouraging locals to engage in outdoor activities and increasing green spaces for people to meet and connect.

Source 1: Roads are a vital way to connect places, especially where public transport is limited. Dirt or unsealed roads provide risks for motorists including potholes and corrugations. Dust also reduces air quality in the local area. Councils have programs in place to maintain unsealed roads or upgrade them when funding is available.



Source 2: Modelling of Birrarung Marr and the river bank in the next 11–20 years without replacement planting (top) versus Birrarung Marr if successional planting is done over the same period (bottom).



Learning ladder G5.9

Enhancing liveability

1. Source 2: Identify the key changes along Birrarung Marr if successional planting is carried out.
2. What are some benefits of implementing revegetation projects in urban areas?
3. How might sealing dirt roads impact the safety and accessibility for residents in rural areas?
4. What additional projects could local councils implement to improve green spaces in your community?

Strategies for action

1. List infrastructure other than roads that the council could improve to enhance liveability.
2. Explain how the City of Melbourne's Urban Forest Strategy aims to increase community engagement and improve environmental quality.
3. How might the Cardinia Sealing the Hills project improve community interactions and social activities in the local area?
4. Design one new strategy local councils could implement to further enhance social connectedness in communities.

Make it spicy

How *sustainable* are the strategies being implemented by local councils in promoting long-term social connectedness?

Scale, pages 232, 429; strategies, page 446; sustainability, page 234

HOW TO

G5.10

Case study

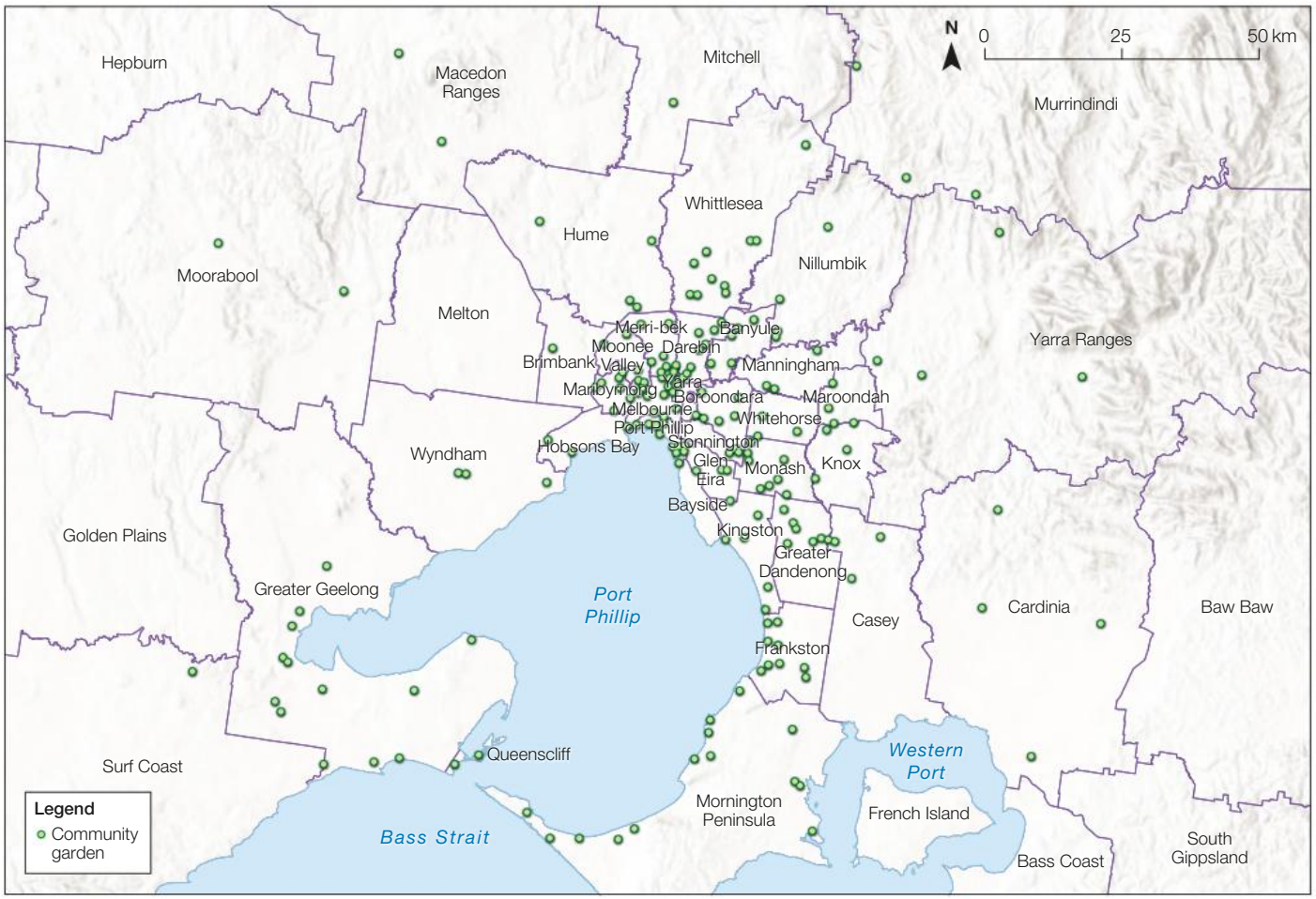
How can we improve social connectedness within local communities?

Local initiatives, such as social groups, sporting clubs, exercise programs and community gardens, can help improve social connectedness and increase community of place.

Through its Community Grants Program, the City of Darebin has allocated around $500 000 to support more than 116 local projects, including cultural festivals, sports clubs and youth programs. In 2023, some of the council funding went to support the Reservoir Indochinese Elderly Refugees Group.

This group supports elderly refugees to resettle, promotes Vietnamese culture and traditions, and encourages connectivity by arranging activities, walking groups, technology and English classes, physical wellness programs and cultural celebrations.

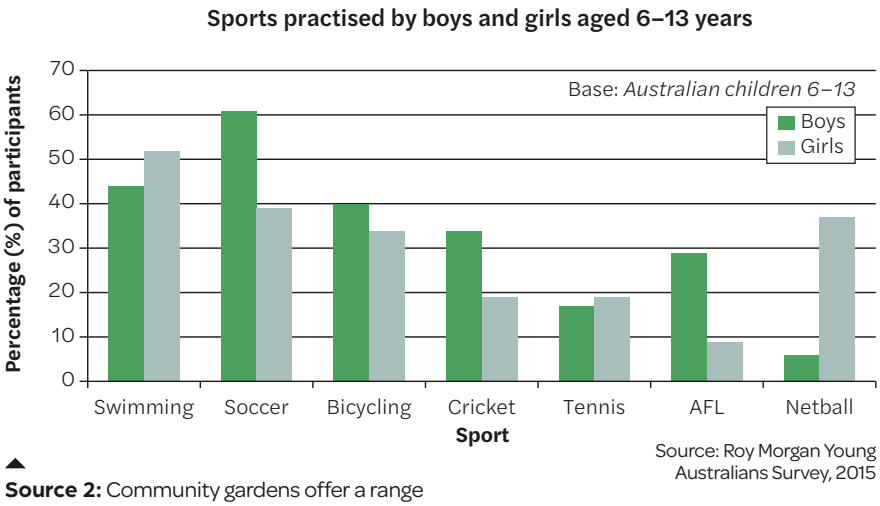
Community gardens in Victorian local government areas



▲ **Source 1:** Spatial distribution of community gardens in different local government areas of Victoria

Source: Matilda Education Australia

Community gardens are popular for increasing social connections and promoting environmental sustainability. The Docklands Community Garden, revitalised by a small group of residents, now has 215 volunteers who participate in activities like planting, watering and weeding. Regular events, including seasonal planting and social gatherings, allow people to connect with their local place and gain gardening tips, and collect homemade compost and fertilisers from garden volunteers.



Source 2: Community gardens offer a range of environmental and social benefits.

Source 3: People connect with each other when they join up to share a common interest, such as sport, music or games. If people feel connected through communities, the place they live in becomes more liveable.

Learning ladder G5.10

Social and cultural influences

1. What types of activities are commonly organised in your community to help people connect?
2. Describe how the Reservoir Indochinese Elderly Refugees Group enhances social connectedness among its members.
3. What role do cultural festivals play in bringing different groups together and enhancing social cohesion?
4. Why is the connection to Country important for First Nations Peoples, and how can it be supported in local communities?

Strategies for action

1. Describe what a grant is and how a grant can help improve local services.
2. How do community gardens contribute to both social interaction and environmental sustainability?
3. How might increasing funding for community gardens influence social connections among residents?
4. How might local councils collaborate with community members to identify the needs for future social programs?

Make it spicy

How do local groups and sporting clubs *interconnect* with other community initiatives to improve overall social connectedness?

HOW TO

Interconnection, page 227; strategies, page 446; space, page 224

How can liveability factors be improved for First Nations Peoples?

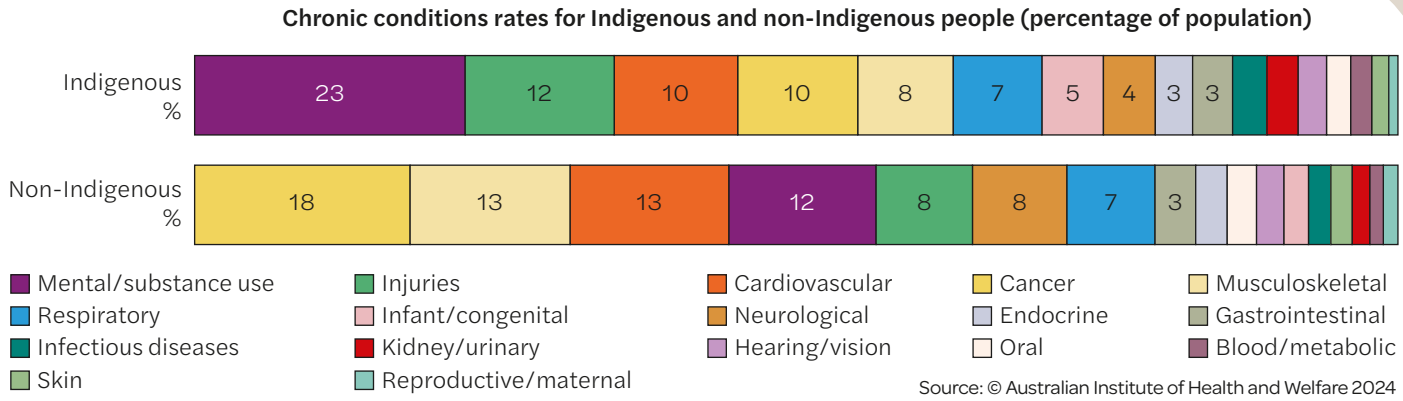
First Nations people play a significant role in enhancing liveability through their contributions to preserve cultures, sustainably manage the land and empower communites to help improve living conditions. Their efforts contribute to the creation of a more inclusive and equitable society that benefits all Australians.

Improving liveability

The liveability of a place relates to the quality of the environment, its **infrastructure** and the health, culture and safety of the community. Many First Nations communities face barriers to improving their wellbeing. Ineffective government policies have made it difficult for First Nations people to achieve home ownership, business opportunities, and parity with non-Indigenous Australians in health and education.

Health care

There is an unacceptable gap in health and life expectancy between Indigenous and non-Indigenous Australians.



Source: © Australian Institute of Health and Welfare 2024

▲ **Source 1:** In 2018, the impact of chronic conditions among Aboriginal and Torres Strait Islander people was 2.3 times greater than among non-Indigenous Australians. Those in remote areas experienced even higher rates of chronic conditions than those living in cities.

A number of factors contribute to the gap in life expectancy for First Nations people, including maternal health, education, poverty, safety, housing and racism. An Australian Bureau of Statistics survey indicated that about one-third of the total health gap between Indigenous and non-Indigenous Australians is due to poor access to local, affordable and culturally appropriate health services.

To improve the health outcomes for First Nations people, dramatic improvements to the health system are needed. To address limited access to culturally appropriate health care, governments must increase the number of healthcare professionals in First Nations communities, improve healthcare infrastructure, and integrate First Nations healing practices into mainstream healthcare systems. Additionally, addressing the socioeconomic factors that contribute to health disparities, such as inadequate housing, is crucial. Promoting cultural pride, supporting community-led initiatives, and actively combating racism and discrimination are also important steps in creating a more equitable and liveable future for all Australians.

◀ **Source 2:** Koori Maternity Service delivers culturally appropriate health care to help First Nations women and their families feel safe and included throughout pregnancy, delivery and postnatal care.

Source 3: Bililuna Community School is a remote school located in a desert region approximately 1100 kilometres east of Broome and 150 kilometres south of Halls Creek in Western Australia.

Education

When discussing education in Australia, government priorities such as school attendance and attainment of literacy and numeracy standards are seen as an issue to be solved in Indigenous communities. Colonised classrooms often harm First Nations students by erasing First Nations knowledge and cultural practices, disconnecting them from their identities.

A culturally relevant school curriculum including the use of First Nations languages can help preserve cultural identity and improve educational outcomes. Students may occasionally need to miss school to participate in ceremony or cultural practices, which are integral to their cultural identity and wellbeing.

A study involving Indigenous and non-Indigenous educators in Queensland in 2022 highlighted building confidence in young Indigenous people to deal with issues such as identity and racism. This helps young people feel safer and more connected.

> In our school, once students knew their identity, they excelled. Nurturing identity and culture is very important – growing young people in an environment where being Indigenous was negative but turning that into a positive is re-imagining the story for all Indigenous students.
>
> Culture and identity play an important role in students believing in themselves and striving to be the best version of themselves [...] students have to know that they [are] included and recognised as Aboriginal and Torres Strait Islander people [...] space to call their own is important. They like to be there.

Source 4: Statements from educators working with First Nations students, *The Conversation*, 9 November 2022

Housing, infrastructure and economic development

Improvements to housing, infrastructure and economic development can lead to improved liveability and better health, social and economic outcomes for First Nations Peoples.

The Redfern Aboriginal Housing Company in Sydney is a community-led initiative that focuses on improving housing options for First Nations people. By involving community members in decision-making processes and providing safe, affordable and culturally appropriate housing choices, this organisation empowers First Nations communities to shape their living environments and promote self-determination.

The government can enhance liveability by investing in infrastructure projects that improve community facilities based on the needs and priorities of local First Nations communities. For example, the construction of the Wiradjuri Study Centre in Condobolin provides a space for cultural education, language preservation and community gatherings, contributing to inclusive and thriving community spaces.

Initiatives like the Indigenous Procurement Policy (IPP) and the Aboriginal Economic Development Strategy support the growth of Aboriginal businesses and employment opportunities. These initiatives aim to create economic opportunities, foster economic self-sufficiency, and improve wellbeing within Aboriginal communities, thereby improving liveability.

Source 5: The Pemulwuy Project is the redevelopment of the Aboriginal Housing Company land known as 'the Block' in Redfern, Sydney. The new site will contain affordable housing for 62 First Nations families, student accommodation spaces for 110 First Nations students, a childcare centre, and commercial and retail spaces.

Learning ladder G5.11

Enhancing liveability

1. Source 1: What is an important factor that impacts the high rate of disease in First Nations communities?
2. How does the inclusion of a culturally responsive curriculum enhance liveability?
3. What would happen to the prevalence of disease in First Nations communities located away from cities if access to housing, water, health care and education improved? How would access to these services make a difference?
4. What is an infrastructure project that could be developed in your local area to enhance liveability? How would this improve liveability outcomes?

Presenting ideas

1. Source 5: What is the role of the Redfern Aboriginal Housing Company?
2. How do services such as the Koori Maternity Service contribute to improving health outcomes for First Nations women and families?
3. Using data, explain the health inequities experienced by First Nations people and the barriers preventing improvement.
4. Explain the interconnection between government policy and local liveability.

Make it spicy

Source 3: Identify *changes* to a traditional classroom to make the Bililuna classroom more culturally appropriate for First Nations students.

HOW TO

Change, page 228; interconnection, page 227; presenting ideas, page 449; SHEEPT, page 440

Why is cultural connection important for liveability?

For millennia, First Nations Peoples have been caring for Country by applying fundamental scientific principles to manage the landscape and ecology. The connection to Country, however, goes far beyond the 'how' of managing the landscape, but also includes important spiritual connections to Country that address the overall question of why caring for Country is important.

The science of caring for Country

The application of scientific principles has impacted the ecology and the landscape on the Australian continent and the adjacent islands for millennia. These scientific principles have included complex understandings of ecology, botany, geology, zoology, meteorology and many other sciences focused on observations of the environment. This meant that prior to colonisation, First Nations Peoples had extensive knowledge of Country, and were able to maintain its fertility and productivity.

At the heart of the science of caring for Country was an understanding that all outcomes had to be sustainable. This meant that people cared for Country and considered both the immediate needs as well as the needs of those yet to come. Plants were cultivated with consideration not only of what the initial output would be, but also of the impact they would have in the years and decades to come. This was also true with regard to the waterways, soil, insects, animals and bird life.

The spirituality of caring for Country

The science of caring for Country was not enough to ensure that there would always be enough for the future. Another central aspect of connecting to Country is recognising that people are, and have always been, part of the landscape. This is in contrast with many non-Indigenous cultures that consider humans to be at the top of, or separate from, the environment. Because people are not considered to be separate from Country in the First Nations' perspective, this means that the concept of ownership of Country is different. Ownership of Country in non-Indigenous contexts is a 'one way' relationship; Country has been commodified and is bought, sold, developed and exploited.

Source 1: This is an image of a painting about Country. Note that the sacred parts of Country are shown, demonstrating how First Nations Peoples have a complex relationship to the environment.

My Country, 2023 by Damien Marks Jangala and Yilpi Marks Atira
© Damien and Yilpi Marks/ Copyright Agency 2024

Source 2: Dancing features prominently at many cultural ceremonies. There are many different dances and each usually has specific knowledge or a purpose to share. Dancing is one of the many ways that First Nations Peoples learn about and renew relationships with Country. These dances were severely disrupted by colonisation and there are many projects working to revive the dances and the relationships with Country in contemporary Australia.

For many First Nations Peoples, Country is not a commodity, but as Country is owned by people, people are also owned by Country. For some, Country is like part of the extended family; for others Country feels like an extension of self. In these cases, it is a 'two way' relationship where people are responsible to Country as Country is responsible to people.

This means that people have a responsibility and an obligation to care for Country and everything that lives and exists there, and because of this, First Nations land management practices are sustainable to ensure that Country is always able to provide for those who need it. Furthermore, this also means that there are specific places where Country is considered sacred, and these are places where First Nations Peoples conduct ceremony. It is not uncommon for these places to have restrictions on who can access them and when. There are many different types of ceremony and these collectively support First Nations Peoples to connect with Country, language, culture, community, ancestors, spirits and self, and this results in renewed focus on the relationship and responsibility to Country.

By connecting to Country in both scientific and sociocultural ways, First Nations Peoples have been able to improve liveability to ensure constant and sustainable access to food, medicine, textiles, building materials, and important cultural materials like various ochres and other sacred substances.

Learning ladder G5.12

Social and cultural influences

1. What characteristics are displayed by First Nations communities to show they have always cared for Country?
2. How is the relationship with Country often experienced by First Nations Peoples?
3. Why is it important to conduct the ceremony of Country? How does this support the community?
4. How does the connection that First Nations Peoples have with Country differ from the relationship that non-Indigenous people have with the land?

Planning and collecting

1. Source 1: Record three questions you would ask the artist of this painting to gain a better understanding of the science and spirituality of caring for Country.
2. Write an inquiry question and three useful methods to explore the topics raised on this spread.
3. Research: Why is Country spelled with a capital 'C' in this context?
4. Imagine you had the opportunity to interview a local First Nations community Elder. Write four interview questions that would explore the relationship between First Nations Peoples and Country.

Make it spicy

How is the science of caring for Country *interconnected* with *sustainable* landscape management?

HOW TO

Interconnection, page 227; sustainability, page 234

G5.13

How liveable are places for people with disabilities?

The Disability Discrimination Act (DDA) makes it illegal for public places to be inaccessible to people with a disability. A person with a disability has a right to have access to places, services and facilities used by the public. In an inclusive society, places are more liveable because people with disabilities have equal access to services and facilities.

What does accessibility look like?

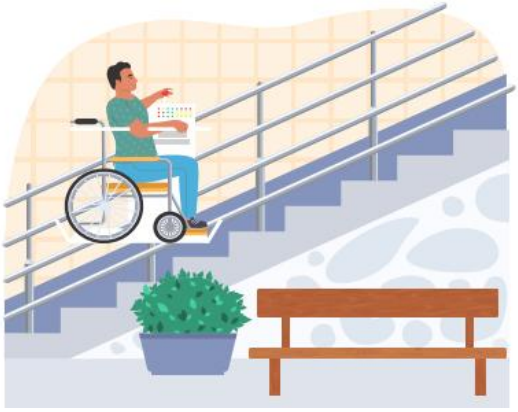
It can be difficult for able-bodied people to see the world from the perspective of a person with a disability and to comprehend the barriers to accessibility. Over time this situation is changing, as new places are planned to be inclusive, and older facilities are retro-fitted so that all people can make the same use of places. Change can be slow, often because of the expense involved. Some places, particularly restaurants and airlines, have resisted change, particularly in regard to guide dogs.

The ability to get into and move within a facility, without segregation and with all of the information needed to use the facility, is essential to accessibility.

Actions being taken to make places more liveable by improving access include:

- local governments providing footpath ramps, lifts and dedicated public toilets and parking spaces, or relocating obstacles to movement such as post boxes, garbage bins or seating in public places
- organisations such as banks and restaurants installing ramps and reorganising furniture to cater for wheelchairs and guide dogs
- signage in braille (tactile points to represent letters) and audio messaging.

Source 1: Access to public facilities is essential to a good quality of life for people with physical disabilities.



Public transport

Evidence shows that one-sixth of young people aged 15 years or more with disability face barriers to using public transport. Their challenges include physical access, information and safety. Public transport is an essential service for full participation in community life because it connects people socially (family, friends and community) and economically (employment and services). In Australia, state rail authorities and public and private bus companies have integrated assistance measures into their transport services.

The role of groups and organisations

Advocacy is when a group or organisation acts on behalf of a group that has been disadvantaged or to help groups gain access to services and facilities available to the general public. Vision Australia is a social enterprise that works with organisations such as banks, arts and culture providers, and education facilities to break down the barriers for the vision-impaired. The enterprise estimates that 453 000 Australians are blind or have low vision, a number expected to grow to 564 000 in 2030 as the population ages. Assistance animals enable the vision-, hearing- and mobility-impaired to safely access places. Under the DDA it is illegal to discriminate against a person with disability accompanied by an animal trained to reduce the effects of their disability.

▲ **Source 3:** Accessible features for public transport include level platforms, tactile surfaces and edges, and available ramps and assistance.

Source 2: There is increasing pressure globally for change that will improve access to services and facilities for people needing the use of assistance or guide dogs.

▼

Learning ladder G5.13

Enhancing liveability

1. Identify accessibility features at your school.
2. Describe how accessibility could be improved in your local community.
3. Predict the impact on liveability resulting from the absence of ramps and other accessibility features for individuals with mobility impairments.
4. Suggest ways to improve the accessibility issues identified in Question 2.

Presenting ideas

1. Source 1: Describe each of the strategies that help connect people with disabilities to access services and facilities.
2. Why is it important to explore the perspectives of different groups in the community when enhancing liveability?
3. What is the DDA's perspective regarding people with disabilities?
4. What is the link between legislation such as the DDA and improvements in accessibility to services and facilities for those with a physical disability?
5. Explain the implications for society of planning places for people with disabilities in mind.

Make it spicy

Create a photo essay of signs at *places* in your community that would improve connections to *places* for the vision or mobility impaired.

HOW TO

Photo essays, page 422; presenting ideas, page 449; place, page 226

What will liveable places look like in the future?

Liveable places meet the needs of people while providing them with the best quality of life they can have. Sustainable places do this while making sure that the Earth's natural resources and environments are conserved and will be available to meet the needs of future generations. There is no single strategy to create liveable, sustainable places.

Barangaroo

Barangaroo in Sydney is the first carbon-neutral development in Australia and provides an example of how to integrate liveability and sustainability into new urban projects. Features of liveability include the natural environment; access to services and facilities within the precinct and the adjacent Sydney Central Business District; accessible public transport (rail and light rail) and walkability; and proximity to cultural precincts such as the Sydney Opera House, Sydney Theatre Company and Australian Maritime Museum.

Features of sustainability include five- and six-star energy ratings for residences and for commercial facilities, water and waste recycling, vertical window shading to save energy, rainwater tanks, LED lighting and the use of water-efficient appliances.

Source 1: Barangaroo, a model liveable and sustainable urban precinct

Marlinja

Marlinja in the Northern Territory is a remote community of 60 people, 700 kilometres south of Darwin. Working with Indigenous clean-energy organisation Original Power, the community has become almost energy self-sufficient by building its own solar farm and installing a battery to use the power at night. Like many remote Indigenous communities, Marlinja had relied on diesel generators for electricity. Diesel supplies were often disrupted in the wet season and generators failed.

A reliable source of clean energy will reduce power costs, and improve health and wellbeing through better access to refrigeration and air-conditioning. Summer temperatures regularly exceed 40°C across the Northern Territory. There is a vision that all remote communities can benefit from similar solar projects.

Source 2: Marlinja community celebrating the installation of a battery to allow their solar power to be stored for use at night

The Maldives

The Maldives has 1190 low-lying islands, mostly less than 1 metre above sea level. Sea-level rise threatens to submerge the country. Using new technologies, a floating city to house 20 000 people is being built in the lagoon near the capital, Male, as an adaptation to climate change. Built in a brain coral-like pattern, the city will have 5000 floating parts containing services and facilities as well as housing. This is one of many global projects creating floating places for people to live in the future, as they adapt to the results of climate change.

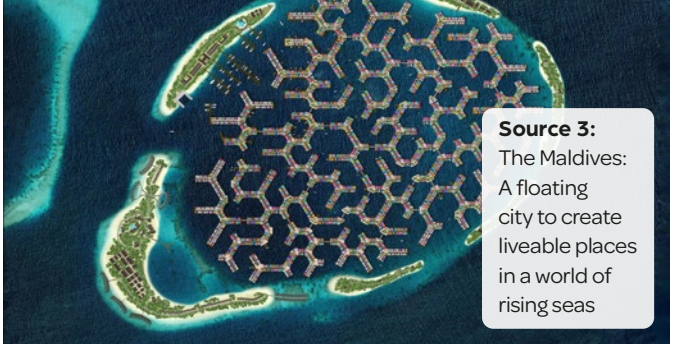
NEOM

NEOM in Saudi Arabia is a massive project being viewed as the future of liveable, sustainable urban places. The Line is the most innovative component of the project, with a planned 170-kilometre structure extending from the mountains to the Red Sea to house 9 million people. The goal is 100 per cent renewable energy, no cars, high-speed rail, and 95 per cent of land set aside for nature. Everything needed for living a quality life will be within 5 minutes' travel and within a climate-controlled structure.

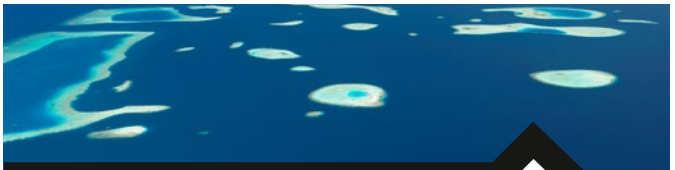
Location of The Line, NEOM, Saudi Arabia

Source 4: NEOM, Saudi Arabia, location of The Line

Source: Adobe/ Peter Hermes Furian



Source 3: The Maldives: A floating city to create liveable places in a world of rising seas



Learning ladder G5.14

Enhancing liveability

1. Sources 1 and 3: Identify the two places pictured.
2. Source 2: Describe how liveability is being enhanced in Marlinja.
3. Source 1: Predict the impact of Barangaroo's carbon-neutral development on the liveability of residents.
4. Based on the ideas raised here, suggest local sustainability improvements for your community space.

Representing information

1. Source 4: Describe the location of Neom and The Line.
2. Look at how Barangaroo, Marlinja, the Maldives and NEOM use sustainable practices. Take a photo of your local area. Annotate the photo to show how sustainability could be improved to make the area more liveable.
3. Source 3: Locate the Maldives on a map. How will a floating city make the Maldives liveable and sustainable in the future?
4. Source 1: Access https://mea.digital/q5h and explore the map. List some of the key features that makes this place liveable. Can you find examples of sustainable characteristics?
5. Why have all these places taken different approaches to enhancing sustainability? Consider perspectives, environment and policy.

Make it spicy

Source 2: Why are reliable and cost-effective sources of energy *interconnected* with enhanced liveability for remote communities?

HOW TO

Interconnection, page 227; photographs, page 436; place, page 226; representing information, page 420; space, page 224

How do I conduct a good inquiry?

Throughout the chapter you have developed knowledge and understanding of enhancing liveability. Background knowledge is important as it helps you make connections to new information, ask better questions and consider different perspectives. As you were progressing through the chapter you have been gathering information through highlighting, note taking or responding to the Learning ladder. It is now time to start planning your inquiry! Refer to pages 452–8 for a step-by-step guide to this process.

Throughout the chapter, a range of case studies was presented to apply your learning to real-life events. Review these pages and select a case study to build your inquiry around.

- How has the Chinese community developed in Box Hill?, page 380
- How did the pandemic increase community isolation?, page 384
- What is the local council's role in improving liveability?, page 394
- How can we improve social connectedness within local communities?, page 396
- How can liveability factors be improved for First Nations Peoples?, page 398
- Why is cultural connection important for liveability?, page 402

For your selected case study, complete a 'see, think, wonder' to help build curiosity and develop ideas you may cover in your inquiry.

Remember: A good inquiry will be focused on an aspect of the topic that interests you. It is more than just a research task that you present as a PowerPoint; it is a genuine investigation into something you are wondering about.

See
What do you see?
What are the human and physical characteristics?

Think
What do you think about that?
Where is it?
Why is it there?
When did it occur?

Wonder
What questions does this raise in your mind?
What else do you need to know to understand what is happening here?
What are other people saying about this?

Write down five observations you make when viewing the data presented.

The following are a list of example open-ended questions which may help you to develop your inquiry.

Enhancing liveability

- **Descriptive question:** *What factors contribute to the liveability of a town or city?*
- **Procedural question:** *How has the liveability of my local area changed over the past decade?*
- **Comparative question:** *How does liveability in a large city compare to that in a small town?*
- **Evaluative question:** *How effective are green spaces and parks in improving the quality of life in urban areas?*

Level up!

Throughout the chapter you have been working to move up the Learning ladder. An inquiry investigation is a great opportunity to attempt new skills. When planning your inquiry, consider how you may integrate geospatial technology into your fieldwork or how you may explore a range of perspectives. Use the How-to chapter to support you in planning and research.

G6

Geo How-to

Mastering geographical concepts helps you think like a geographer, while developing skills in using maps, images, graphs and other data sources allows you to analyse patterns and distributions effectively. These skills are fundamental for exploring spatial relationships and conducting fieldwork, enabling you to answer important questions about how different factors interact with and affect the environment.

Geographical inquiry

This section will enhance your geography skills by offering explanations and practical examples. Some examples will address real-world challenges and solutions, while others will use Happy Town, a fictional place that illustrates issues and processes that could occur in your own community.

Planning and collecting

1 I can ask open-ended questions

Open-ended questions cannot be answered with a simple 'yes' or 'no'. They often begin with words like 'how', 'why' or 'what'. These questions make us think and we may need to conduct some further research in order to answer them fully.

Some examples of open ended-questions are shown in Source 1.

Source 1: Some possible open-ended questions to ask about this place

2 I can plan an inquiry

Inquiry projects in geography help you explore real-world issues, develop critical thinking and improve research skills. Careful planning is important because it makes sure you collect reliable and useful resources, prepares you for challenges you may face and supports clear communication of your findings.

Before you start an inquiry, complete the following three steps:

1 Select a topic that interests you or is relevant to your surroundings.

When thinking about what topic you would like to investigate you may:

- Review the case studies and data presented throughout this book. Do any of these ideas spark curiosity and make you want to investigate an idea or challenge further?
- Explore local scale issues; for example, look at current water-related or liveability issues in your community, such as pollution, drought or housing affordability, and investigate how these issues affect people's daily lives.
- Explore recent news articles and reports on water and liveability topics.
- Use digital maps to explore patterns related to water in the world or place and liveability. What do these patterns make you wonder?
- Investigate historical changes and how water availability or liveability in your area has changed over time, or what factors contributed to these changes.
- Consider the scale of your investigation. Will you explore locally or regionally, or will you conduct a national or global study?

2 Choose your inquiry question.

Identify the key aspects of the topic, issue or challenge you want to explore. Write a clear and concise inquiry question. An **inquiry question** is an overarching idea that you or your class wants to investigate. A good inquiry question is one that is measurable and quantifiable. You need to be able to collect data and answer the question within the limitations you are presented with. For example, will you have to conduct your fieldwork at school? Will you be able to survey members of the public? How much time will you have to complete your inquiry?

You may wish to create some sub-questions for your big inquiry questions to help you frame your research (Source 3).

Source 2: Some examples of inquiry questions

Source 3: For the question 'Why has water usage increased in our area?' you may ask a range of sub-questions to help you find an answer.

3 Plan how you will answer your inquiry question.

Next you need to plan ways to find information to discover answers to your inquiry question. You may consider:

- What do I know already about this topic?
- What do I need to find out?
- Where/how/from who can we find that out?

There are two main kinds of data:

- **quantitative data**
- **qualitative data**.

Quantitative data is recorded in numbers; for example, the height of a building, the number of plants on a **sand dune**, the number of people in a population or the flow rate of a river. Qualitative data tends to be more observational. You might write down descriptions of a place, conduct a field sketch or take photos as evidence to answer your inquiry question.

Data is collected in two main ways:

1. *Primary methods* are tasks that you will do while conducting field work.
2. *Secondary methods* are ways that you can collect data back in the classroom to help you answer the question; for example, researching websites, books or other publications.

Source 4: Record your selected methods and use this as a checklist as you begin to collect and gather data.

Primary methods	Secondary methods	Information required for my inquiry
Surveys		Collect perspectives of the local community.
Sketches		Identify processes within my local area.
	Good Humanities textbook	Gain background information and understanding.
	Australian Bureau of Statistics	Collect up-to-date and useful data.

Source 5: Using a field sketch to record primary data for a fieldwork investigation at a coastal location

3 I can gather information from secondary sources

Collecting reliable secondary data is important for conducting accurate and relevant geographical research. Secondary data refers to information that has already been collected by others and is available for analysis.

Secondary data can come from various sources, including academic journals, government reports and reputable databases. These are some reliable online sources:

- Academic journals and books: Look for publications written by experts and checked by other experts (this is called peer-reviewed).
- Government and official reports: Data from government agencies and international organisations (e.g. the World Bank, United Nations).
- Databases and organisations: Use databases like Google Scholar or non-government organisations (NGOs) and research institutes such as the Australian Bureau of Statistics (ABS).

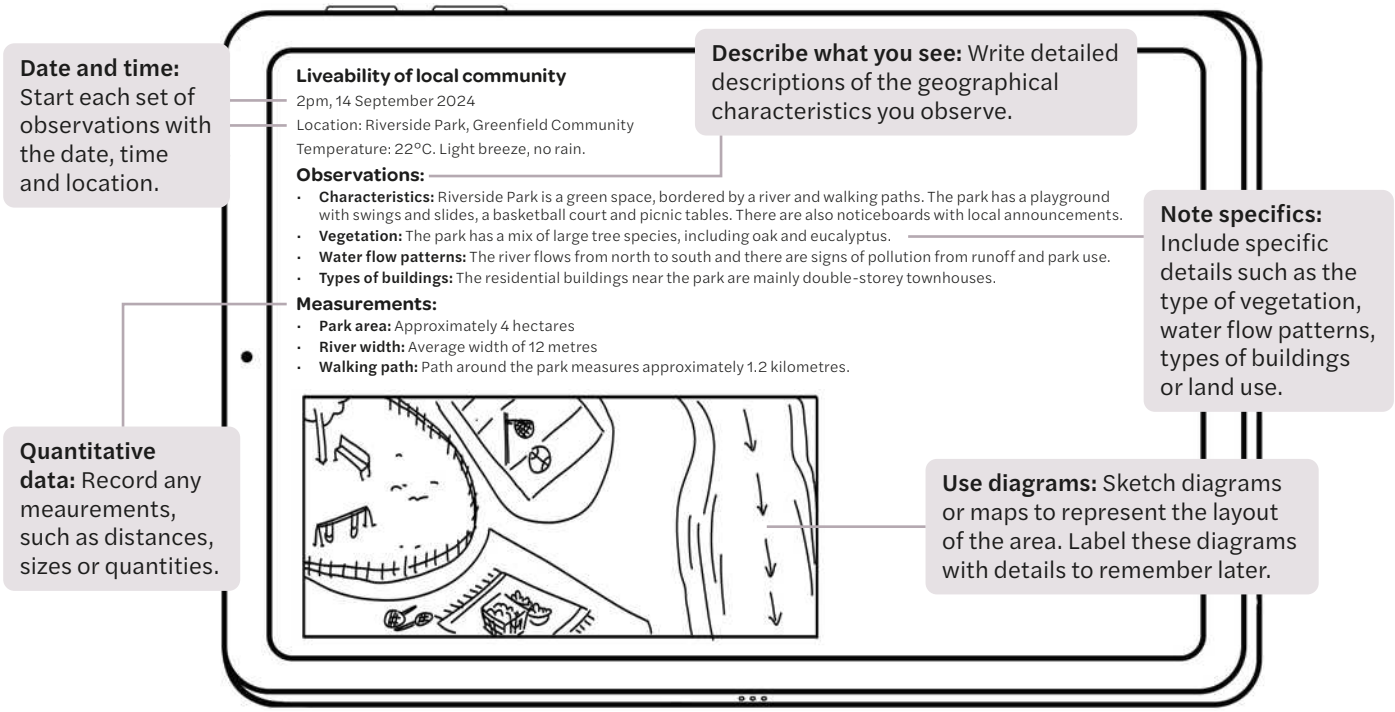
4 I can gather primary data

Primary methods are tasks that you will do to find evidence to answer your inquiry question.

Fieldwork is a fundamental part of being a geographer. While collecting secondary data gives us a broad perspective and understanding, fieldwork provides us with primary data and perspectives. It gives us real-time understanding of spatial patterns and processes, while also improving our observation skills, and our ability to connect what we learn in class to what is happening in our community. The most common fieldwork methodologies are recording observations, conducting surveys, taking photographs and sketching.

Recording observations

Observations are a great way to record what you see and hear while out in the field. Divide your notebook into sections for different types of observations (e.g. physical features, human activities, and environmental conditions).

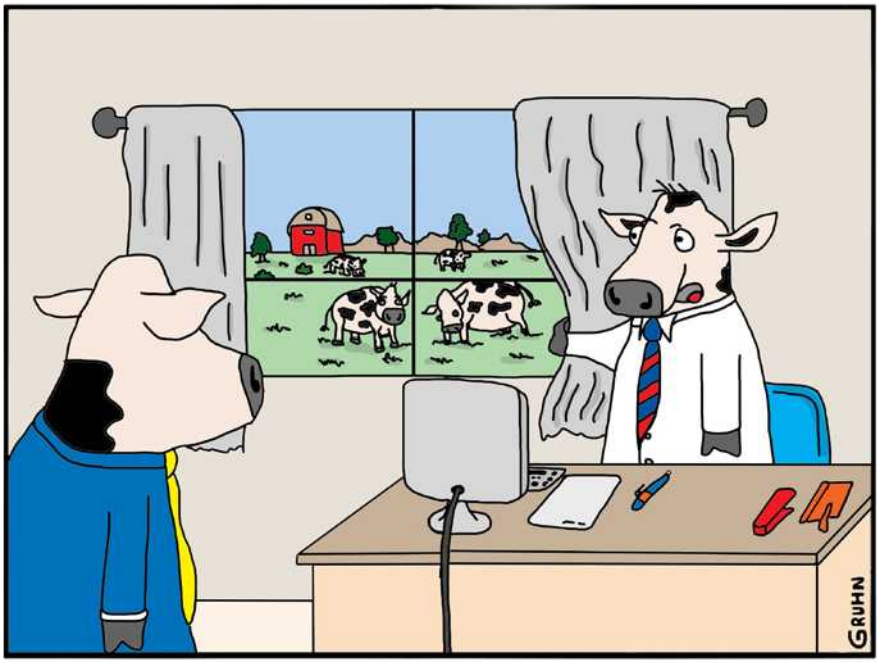


Source 6: You can record your observations in a table or digitally using a phone or tablet.

Observations using multimedia

You can also document your observations using different kinds of media:

- **Photographs:** take photos to provide a visualisation of your notes. Use a smartphone to capture images of significant features, changes or areas of interest. Label each photo with a brief description and its location.
- **Audio notes:** consider using an audio recorder to capture verbal descriptions or insights that you may not have time to write down.



"This desk job is killing me Jim. I need to be out in the field."

Source: CartoonStock.com

Source 7: Photos are a great way to record what you have seen. Remember to provide clear annotations and captions to explain the relevance of the image captured.

Conducting surveys

In geography, surveys are useful ways to collect data in the field. Surveys could be in the form of a questionnaire, where you ask questions about a topic to better understand people's views.

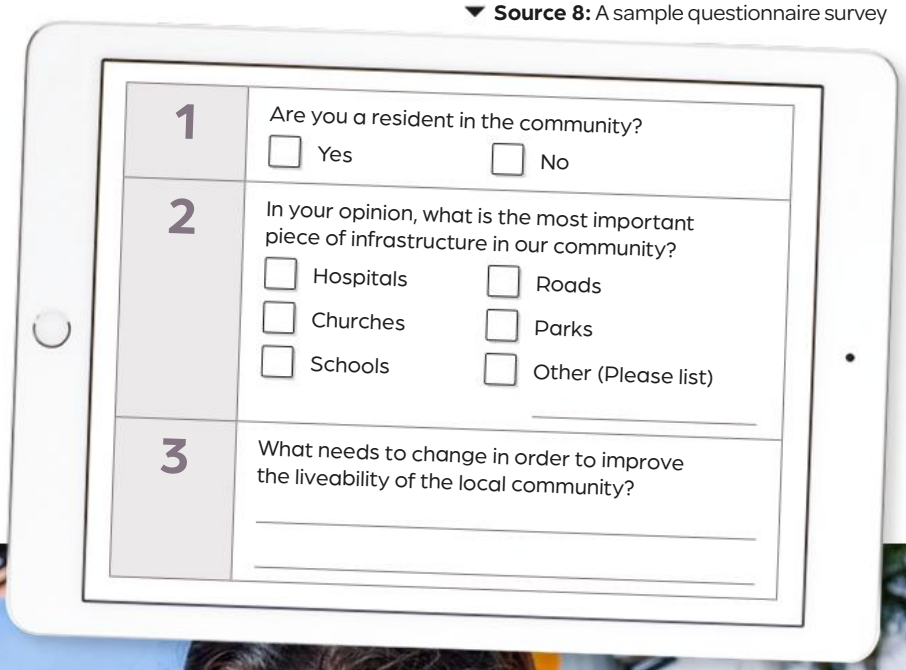
Questionnaire surveys in geography are useful for gathering detailed data on people's behaviours and perceptions, understanding human–environment interactions, and comparing regions.

Questionnaire surveys are best when they are multiple choice and provide a few short, clear options for participants to choose from. You can also do a vehicle survey, and tally up the number of vehicles that pass in a particular amount of time.

Surveys provide you with a sample of what is occurring in a natural or human *environment*.

Surveys can be written by hand or prepared on software such as Survey Monkey or Google Forms (see level 5, page 419). Some sample questions for a questionnaire are shown in Source 8.

Source 8: A sample questionnaire survey



1	Are you a resident in the community? ☐ Yes ☐ No
2	In your opinion, what is the most important piece of infrastructure in our community? ☐ Hospitals ☐ Roads ☐ Churches ☐ Parks ☐ Schools ☐ Other (Please list) _____
3	What needs to change in order to improve the liveability of the local community? _____ _____

Source 9: A geography student conducting a field survey

Sketching and annotating

Field sketches are an excellent way to record data when you are investigating an inquiry question. Sketches allow you to annotate movement, patterns or any interconnections you see. Field sketching is not a test of your artistic skills – the idea is to record a simplified version of what you can see.

When you are making a field sketch, you need to remember **TOASTIE**!

TOASTIE will help you remember the key skills when making a field sketch. It stands for Title, Orientation, Annotations, Scale, Time, Information and Edge.

T Title (1)

Provide a heading for your sketch that tells readers what it is and where it is located. You might wish to record both the absolute and relative locations.

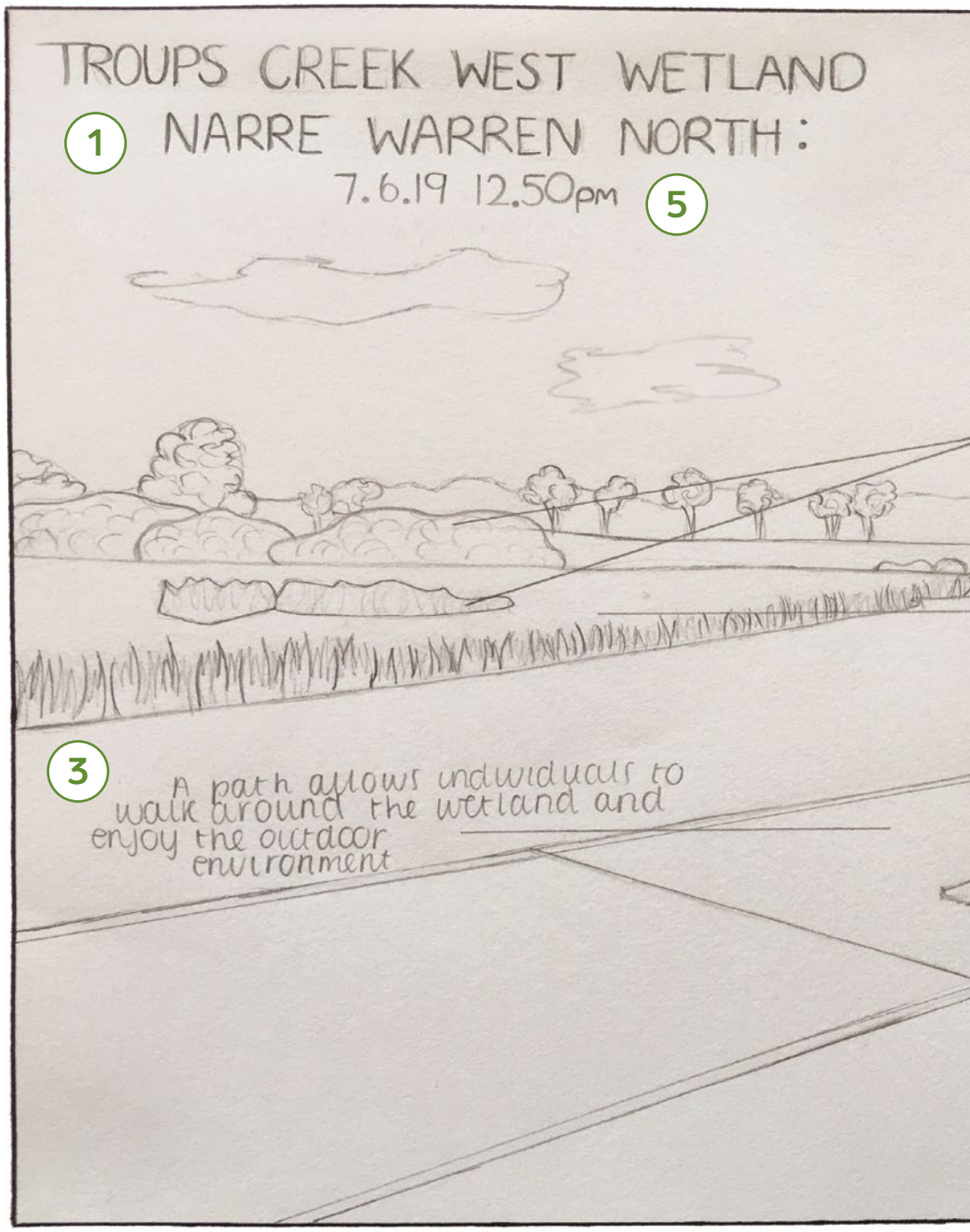
O Orientation (2)

An orientation shows the direction that you were facing when you made your sketch. You need to use a compass so you can record a correct orientation.

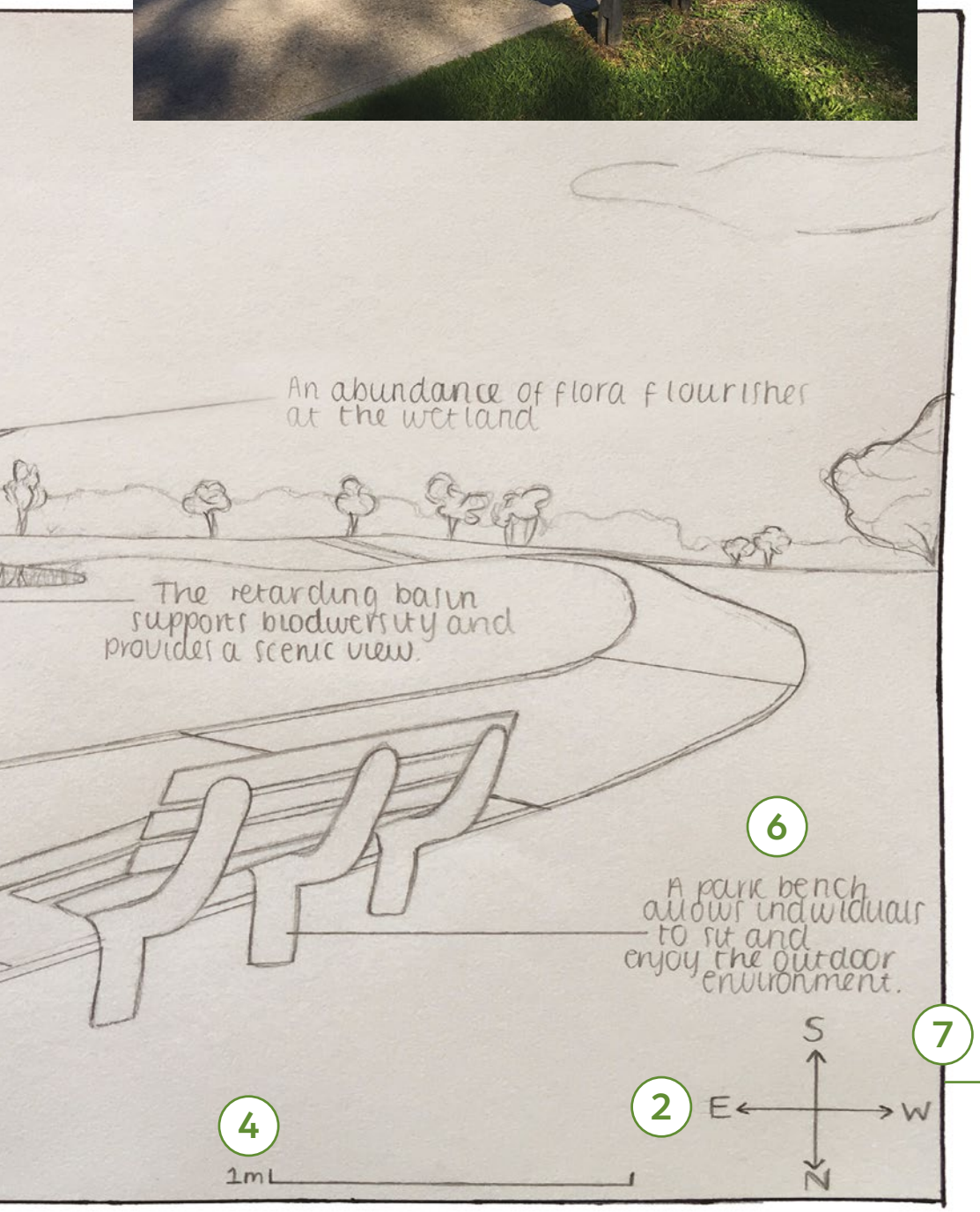
A Annotations (3)

Annotations (or notes) are the most important thing to complete when drawing a field sketch.

Annotations allow you to record details about what you see, and explain how elements of your drawing relate back to the inquiry question. Make sure that the lines to your annotations are made with a ruler – and that they do not overlap.



▲ **Source 10:** An annotated sketch



S Scale

5

Most sketches are not made to scale. However, all geographical maps and sketches require a scale to give the reader some indication of size.

To estimate a scale, use a ruler or pace out the area you have sketched. Then measure how large the same area is on your drawing.

For example, you might estimate that the path you have drawn is 1 metre wide, and when you measure your drawing of the path it is 1 centimetre wide. So your rough estimated scale is 1 cm = 1 m.

T Time

5

By recording the time your sketch was completed, you can analyse how the environment changes over the course of a day, a month or even years.

I Information

6

The annotations on your sketch need to be longer than one word. Annotations should be at least one sentence, and they should inform the reader and help them to identify patterns.

E Edge

7

Always include a border so it is clear where your sketch starts and ends.

Ethical considerations when conducting fieldwork

When conducting fieldwork, you should be mindful of ethical considerations to ensure respectful and responsible research practices.

- **Informed consent:** Always get permission from survey participants before collecting data from them. Ensure they fully understand the purpose of your inquiry, how their data will be used, and that participation is voluntary (they choose to do it and are not forced).
- **Confidentiality:** Protect the privacy of participants by not taking photos of people's faces, or recording names or other personal information without consent.
- **Respect for people:** Treat all community members with respect and sensitivity. Ensure you are being culturally respectful if you visit places of significance.
- **Accuracy and honesty:** Report findings honestly and accurately. Avoid making data up (like survey results) or misrepresenting results so it better answers your inquiry question. As a student you can be limited in the types of data you can collect. Report this rather than inventing data to fill these gaps.

Source 11: Remember to always use allocated pathways and tracks. Avoid damaging habitats during fieldwork activities and follow local guidelines for sustainable travel.

5 I can use geospatial technology to record data

Geospatial technology is an effective way to record data and enhance your data analysis. There is a range of programs and apps you can use to help you collect and record data. Many of these are free for schools to use.

Global positioning system (GPS)

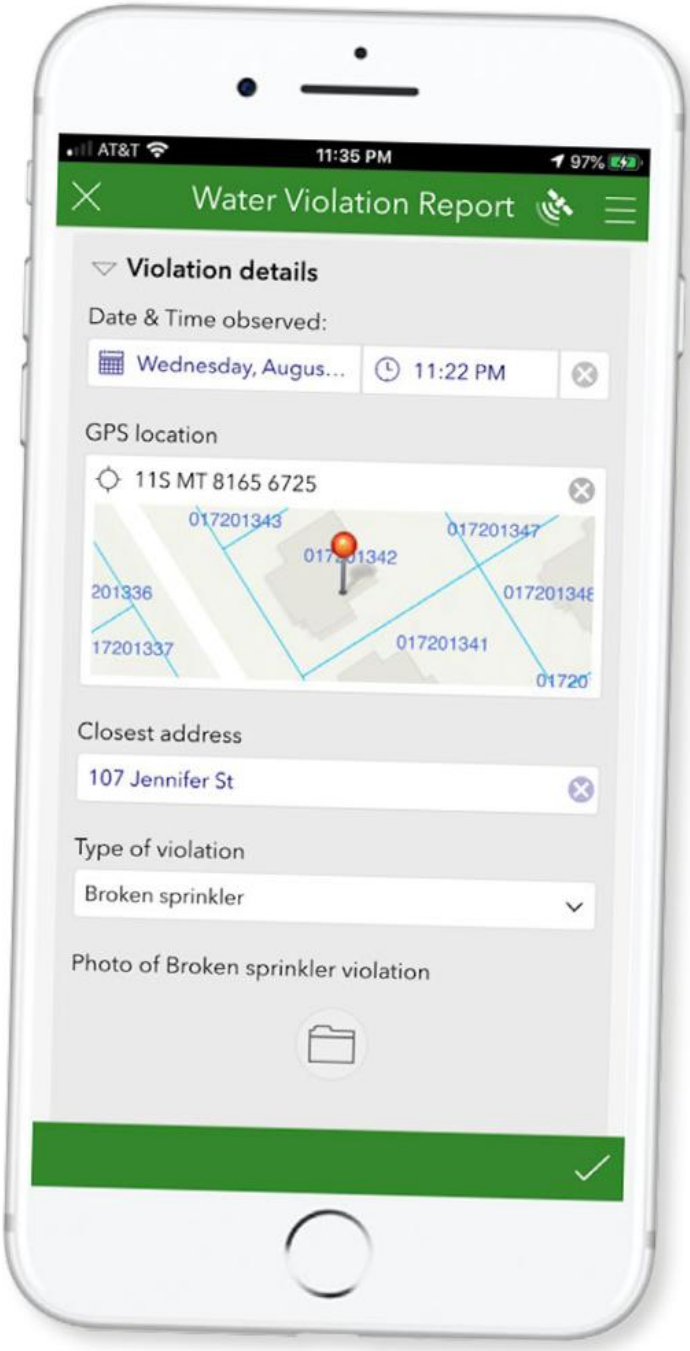
GPS devices or smartphone apps can record absolute locations of where data is collected. This may help you with mapping the exact coordinates of observations, such as the locations of environmental features or infrastructure.

Mobile apps and tools

Mobile apps like ArcGIS Collector, Survey123, or QField allow you to collect data in the field using your smartphone or tablet. These apps allow you to record various types of data, including survey results, observations, photos and GPS coordinates. They make data representation and interpretation much easier when you are conducting analysis later in your inquiry.

Digital survey tools

Online survey platforms such as Google Forms or SurveyMonkey can be used to create digital questionnaires, rather than the traditional paper ones you may have used in primary school. They allow you to create location-based questions and gather geographical information related to specific areas. They also help you create graphs, tables and maps later when you need to represent the data.



▲ **Source 12:** ESRI Survey123 is free for schools and allows you to collect, record and display a range of useful primary data.

Representing information

Imagine you have completed a paper survey with more than 100 participants as part of your fieldwork. Would you take a photo of all 100 surveys and include them in your report? Imagine how much time it would take! Plus, it doesn't give your audience a good understanding of what patterns you have discovered. In geography, we can represent data using maps, graphs, tables and diagrams.

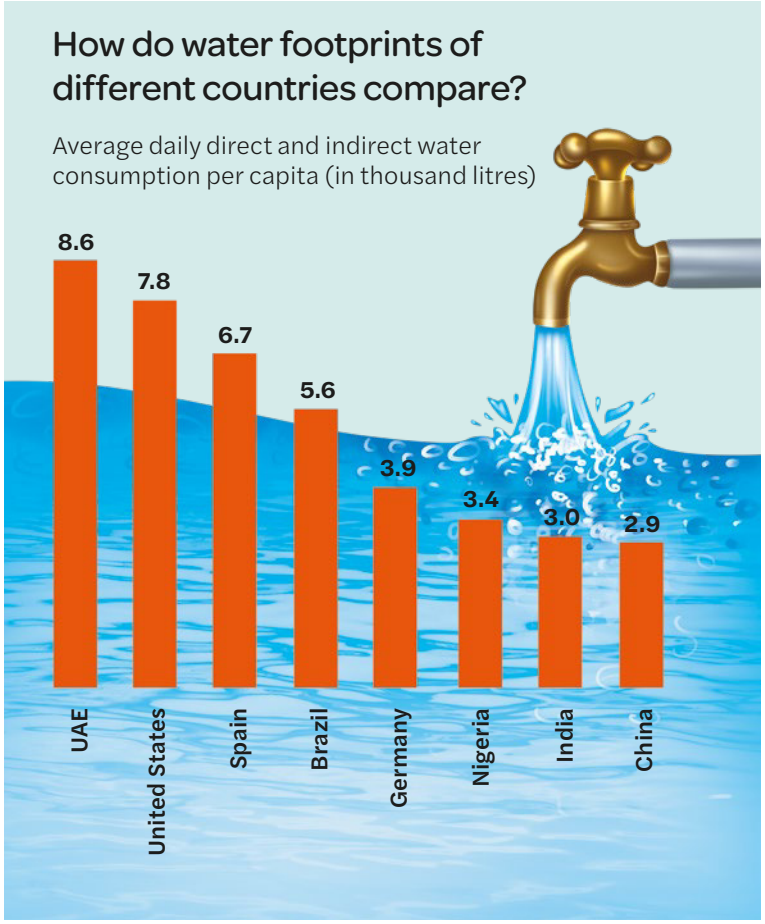
1 I can select data relevant to a question

Not all information and data you collect will be useful in answering your inquiry question. The first step is selecting the information or data you have collected which best tells the story of your inquiry.

Example

To answer the question: 'How does water usage impact urban liveability in a city?' you need to select data that focuses on both water use and its effects on quality of life. Helpful data may include:

- **water consumption:** data on the volume of water used per capita or by residential, industrial and agricultural sectors
- **water use practices:** information on how water is allocated and used, including any restrictions or conservation measures in place
- **policies and regulations:** details on local water management policies, water pricing and conservation programs
- **liveability indicators:** measures such as housing quality, access to facilities and services, public health statistics and access to open, green spaces.



Source 13: Water use per capita for a range of countries. Data like this may be useful in answering your inquiry question by showing how much water is used per person and providing a comparison between places.

2 I can represent data and information

There are various ways you can represent information using diagrams, graphs and maps. You need to select which style is best for the information you have collected.

Visual communication

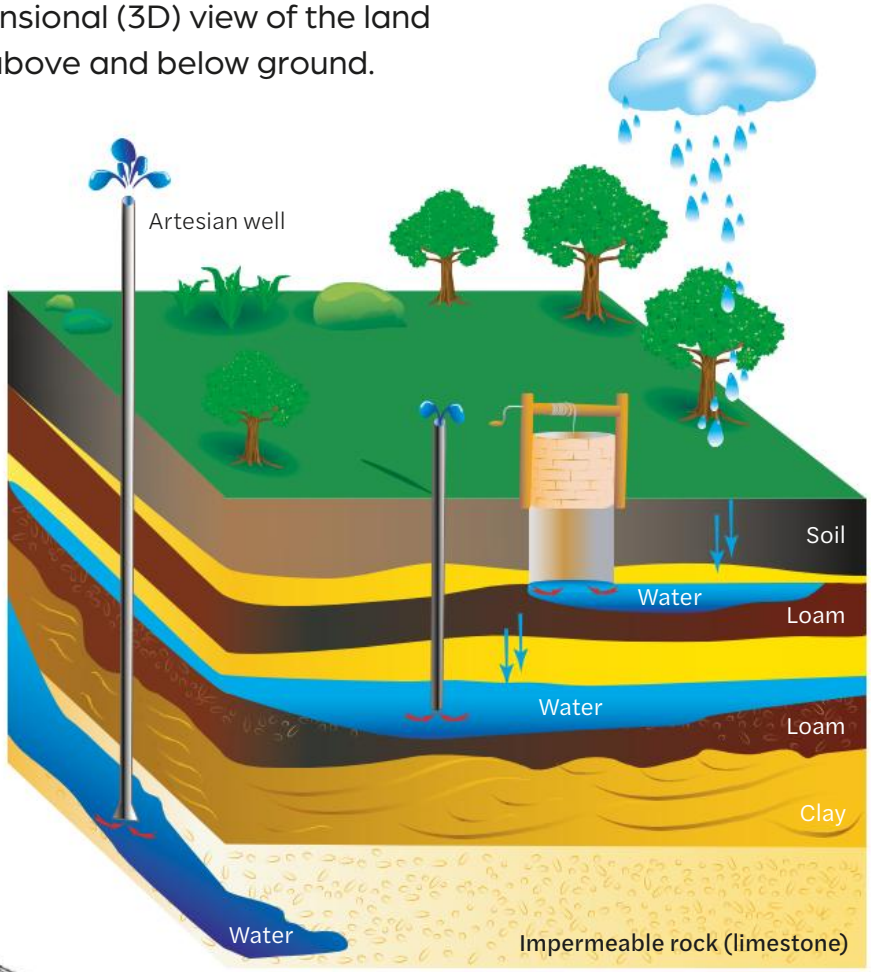
Block diagrams

Block diagrams give a three-dimensional (3D) view of the land and can show what is happening above and below ground.

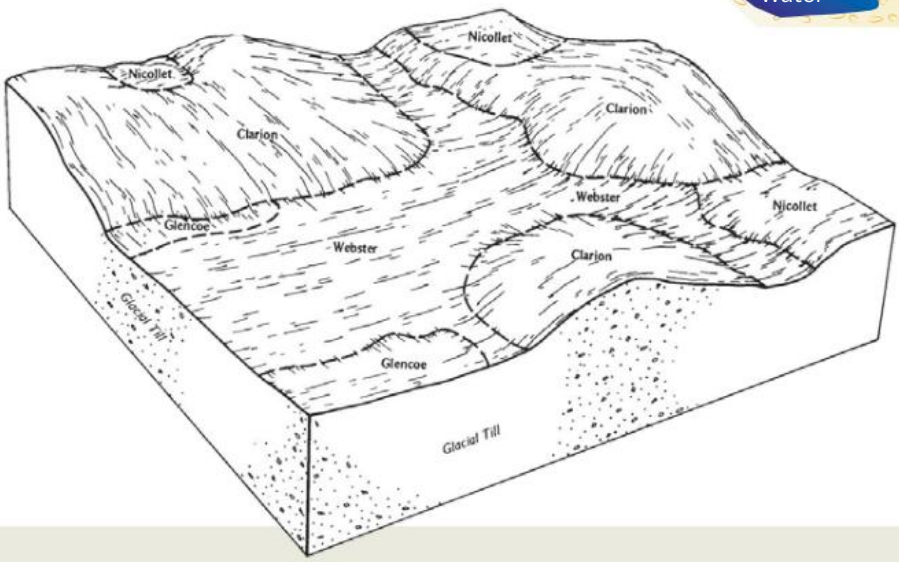
For instance, block diagrams can help us visualise how water can move from the atmosphere to the surface of Earth through rivers, oceans and streams – and also how it can move under the ground.

When you create a block diagram, make sure you draw a 3D object that has an equal amount of drawing room both above and below the surface of Earth.

Labels and annotations are important on a block diagram, as they help your audience to interpret your drawing.



Source 14: A block diagram



Source 15: Sketch of a block diagram

Flow diagrams

Flow diagrams are helpful to show processes or to show how different parts of the environment are interconnected.

Arrows show the movement between stages or how different items are connected. Flow diagrams can be linear, can illustrate a cycle and can be overlaid on other visuals like block diagrams (Source 16).

Source 16: A flow diagram

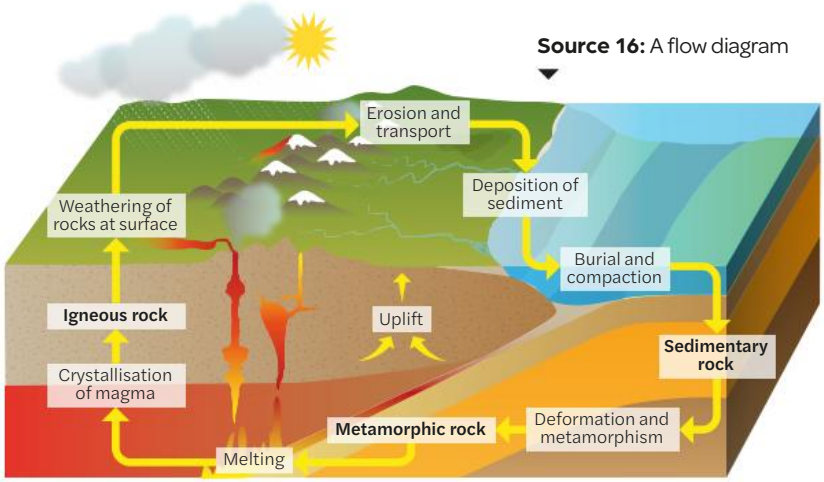


Photo essays

A photo essay is a way of presenting information visually. It is ideal for showing characteristics of a place or a process.

A photo essay usually includes a series of photos with specific annotations or captions. The captions provide brief background information about the key features of the image, or the meaning behind the selected image.

Source 17: A photo essay

Example

Sandbags are prepared ahead of the flood. Sandbags create barriers that help prevent water from entering buildings and help redirect flow away from major infrastructure.

Heavy rainfall is one cause of flooding events, particularly in places with poor drainage or along historical floodplains.

Flood depth indicators, also known as water level rulers, provide a quick visual of the height of rising flood waters. They are a low-cost instrument that is often found in flood zones.

Flood events can have widespread negative impacts on communities. Damage to infrastructure, homes and services means that often government assistance is required to rebuild after an event.

Graphing

Simple graphs

Graphing is an important way of displaying geographic information. It shows us patterns and changes over time.

Graphs best represent data for comparisons (bar graphs), trends over time (line graphs), proportions (pie charts), relationships (scatter plots), distributions (histograms) and statistical summaries (box plots).

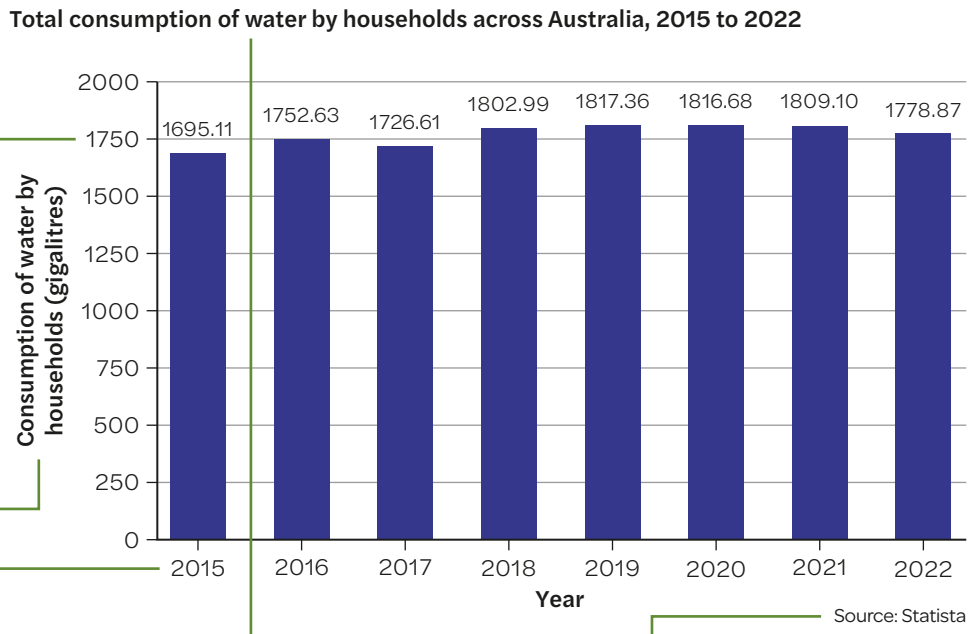
When you are creating a graph, the word to remember is SALTS. **SALTS** is an acronym based on the first letters of five key things about graphs: Scale, Axis, Legend, Title and Source.

S Scale

The scale of your graph will depend on the data you are trying to visualise. To find out the axis scale you need for a graph, first find out the 'range' of the numbers, which means finding the lowest value and the highest value, then fill in the numbers in between so you can mark your data points easily.

A Axis

Each graph has an *x*-axis and a *y*-axis. The *x*-axis is the horizontal axis and the *y*-axis is the vertical axis. Make sure you label each axis.



L Legend

A graph often uses colours to represent data. A legend shows the audience what these colours mean and how to read the data.

T Title

A title lets your audience know what your graph is showing.

S Source

When you graph information, it is important to acknowledge where you obtained the data. Maybe you collected it yourself or maybe you sourced it from a website. By stating the source of your information, the reader knows how reliable it is.

▲
Source 18: A bar graph featuring SALTS

3 I can use geographic conventions to construct maps

Geographers use specialist tools to assist in geographical inquiry. Developing skills in understanding and using these tools helps us display and analyse data effectively. Geographers use the following conventions when constructing a map to ensure it is clear for their audience to read and interpret.

Mapping with BOLTSS (NA)

B Border

Borders are important, because they show the edges of the mapping field. A border provides a clear area for you to construct your map, and makes it look clear and neat.

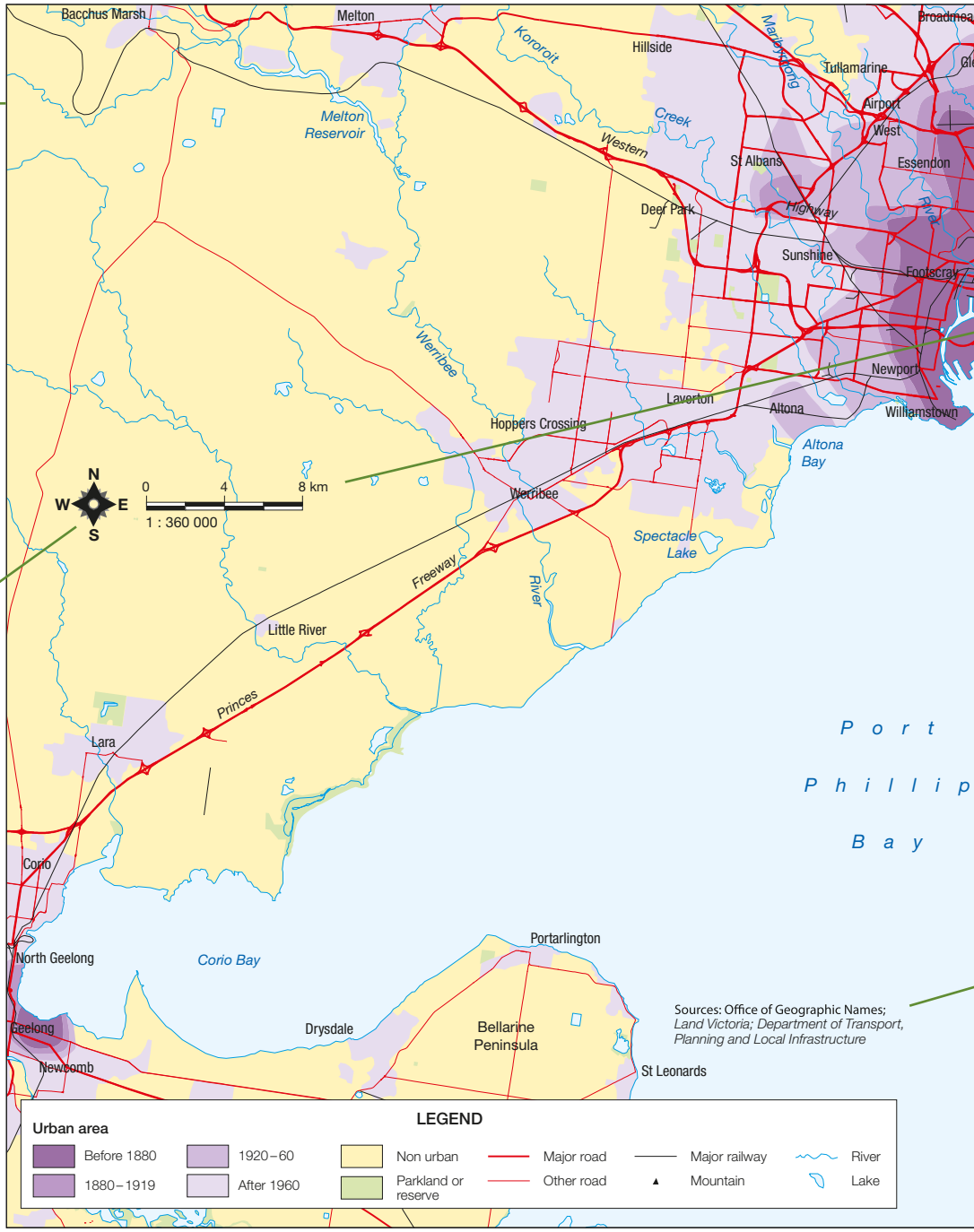
O Orientation

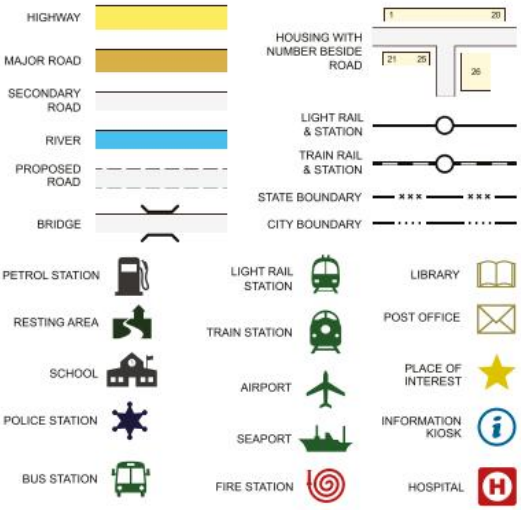
Orientation refers to the compass direction. The four cardinal points on a compass are north, east, south and west. The points in between, such as north-east, give more accurate directions.

▲ **Source 20:** Cardinal points of the compass

Urban growth in Melbourne

▼ **Source 19:** Urban growth in Melbourne





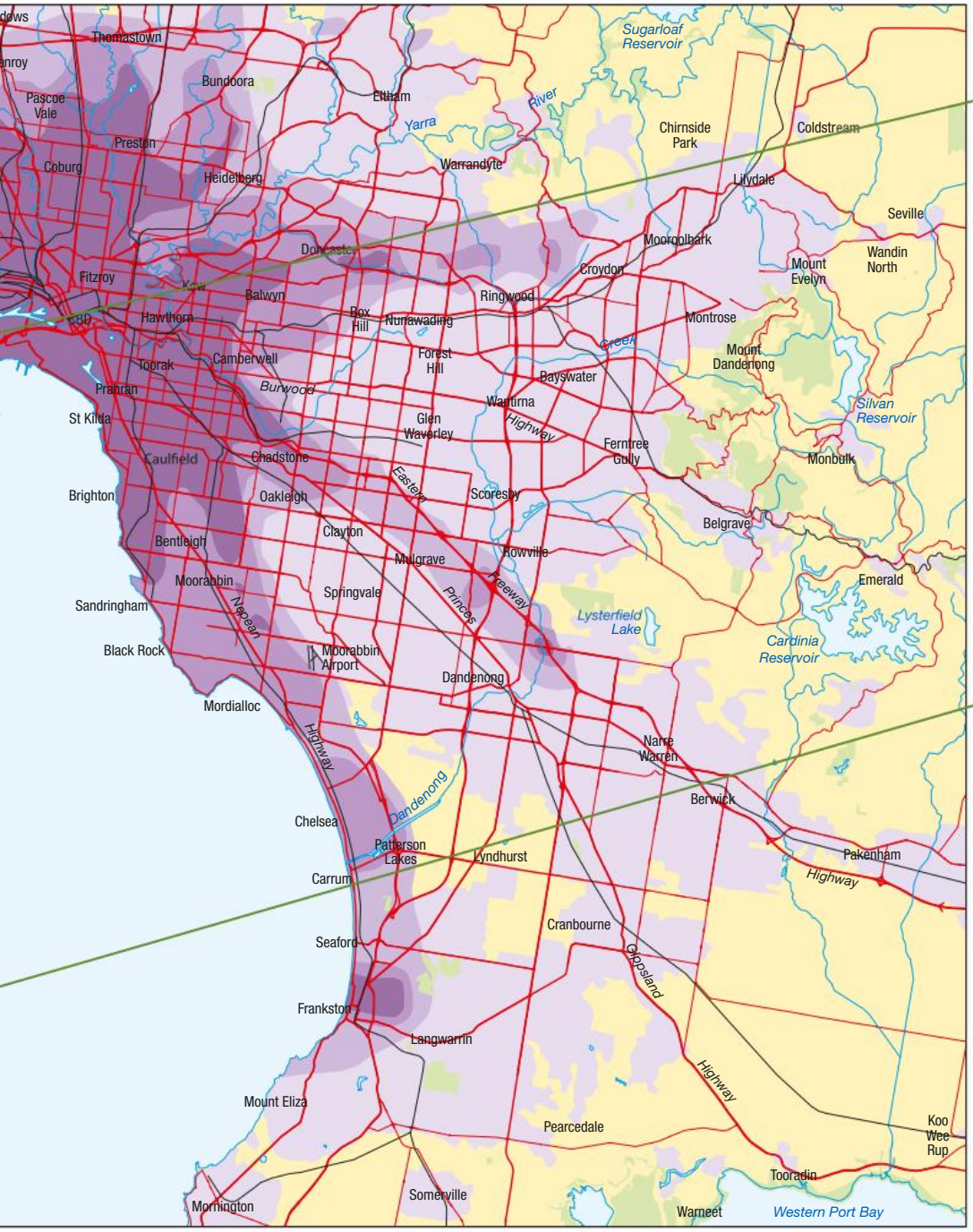
Source 21:
A sample legend

L Legend

A legend or 'key' explains what the colours and symbols stand for. The map in Source 19 uses lines to show rivers and roads and colour to show lakes and parks. It also uses colour to produce a pattern of how Melbourne's urban area has grown.

T Title

A title tells us what the map shows, and gives us some understanding about it. Make sure you always add the date and the time to your sketch maps – this will allow you to monitor change over time in a location. The title of this map is 'Urban growth in Melbourne'.



Source: Matilda Education Australia

S Scale

The scale gives us information about how big something is in real life. Scale can be expressed in three ways:

1. Scale statement describes the scale: 1 centimetre on the map represents 2 kilometres on the ground.
2. Representative fraction uses units to show scale: 1:100 000 means 1 centimetre on the map represents 100 000 centimetres on the ground.
3. Linear scale:

S Source

It is important to let the reader know where you obtained the information for your map – which is known as your source. The source can also indicate whether the map is trustworthy.

(NA) Neatness and Accuracy

When we read a map, we rely on it being neat and easy to read – but we also expect that the data has been displayed accurately. When you construct a map, it is important to correctly show the patterns and distributions you see in the data.

4 I can use geospatial technologies to create maps

While paper maps provide good practice to develop understanding about place and distributions, they are limited in what data they can represent. Digital maps using geospatial technologies allow geographers to show multiple datasets at the same time, illustrating interconnections between data.

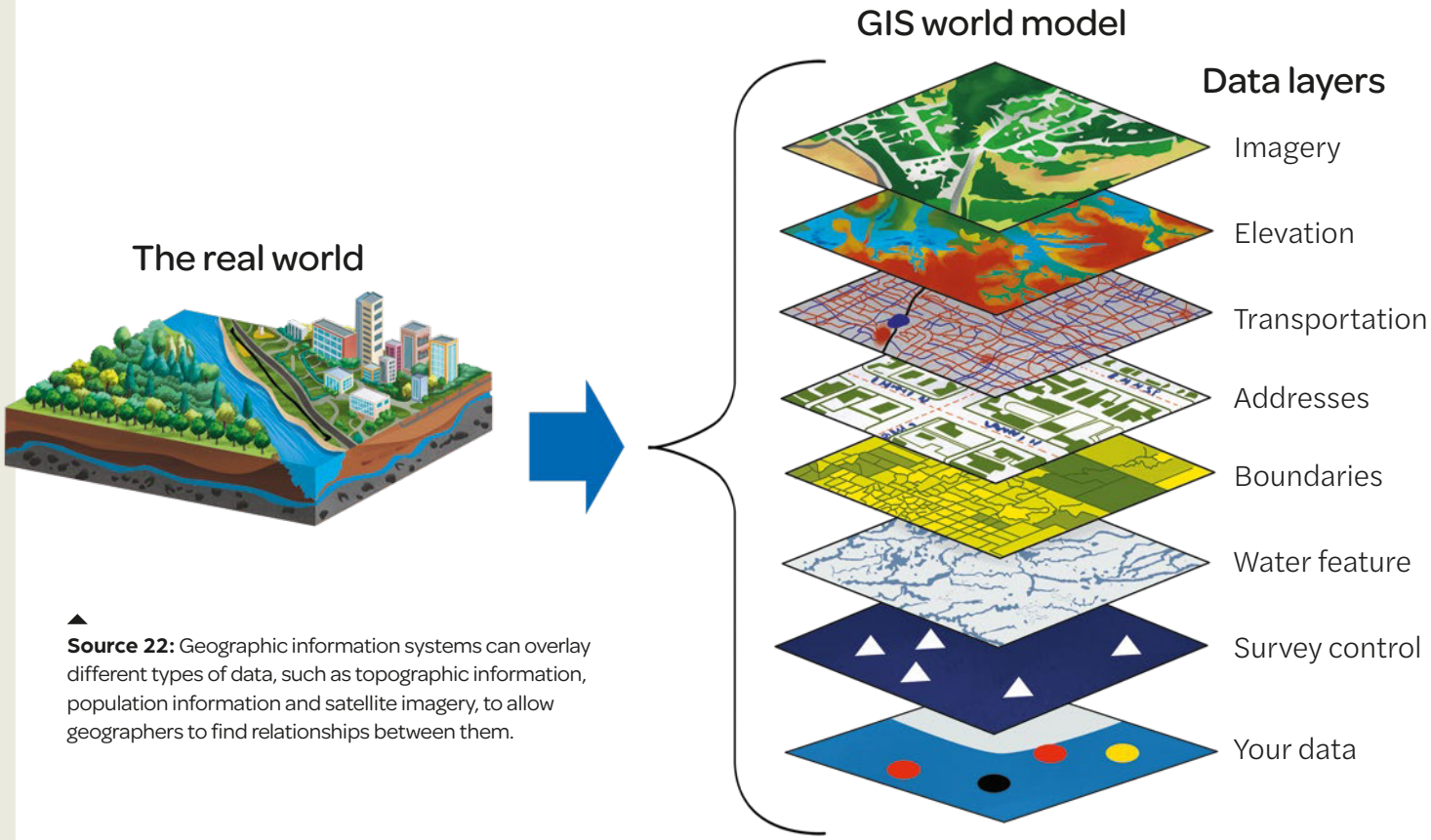
There are a variety of options available that allow you to create maps using your own or existing datasets:

- geographic information system (GIS) software (e.g. ArcGIS, QGIS)
- online mapping platforms (e.g. Google Maps, Google My Maps, Google Earth Pro, Digital Twin).

Example

There are some key words you may come across when creating a digital map. They may include:

- **geospatial data:** information about locations and geographic features
- **layers:** different types of information stacked on top of each other. Each map layer is a different dataset and can be 'turned on' or 'turned off' so geographers can compare specific relationships
- **datasets:** collections of data on a particular topic. For example, one dataset might contain information about river locations, while another might contain data on water use.



Source 22: Geographic information systems can overlay different types of data, such as topographic information, population information and satellite imagery, to allow geographers to find relationships between them.

Layers

Imagine you have a big sheet of clear plastic, and you use different coloured markers to draw on it. Each colour represents a different type of dataset. When you stack these sheets, you can see all the information at once: the city layout, the parks and the schools. Each layer gives you different details and can be added or removed as needed.

Data collection

You may choose to map your own data that you collect in the field. However, there are also lots of freely available datasets available online for you to use to create map layers. ArcGIS provides the Living Atlas with a huge variety of data freely available for public use. The Australian Atlas of biodiversity is another free Australian dataset. You can explore the websets of ArcGIS and Google Earth Pro. Instructions on how to create a digital map will depend on what program you choose to use.

Source 23: You can use layers so that you can see all the information at once, or only particular sections.

Water usage

Another layer could show where people use the water, such as for farming, drinking or industry. This might be represented with icons or colour codes to show different types of water use.

Water quality

On a separate layer, you could add information about the water quality in different parts of the rivers and lakes; for example, some areas might be marked with a red dot to indicate polluted water, while green dots show clean water.

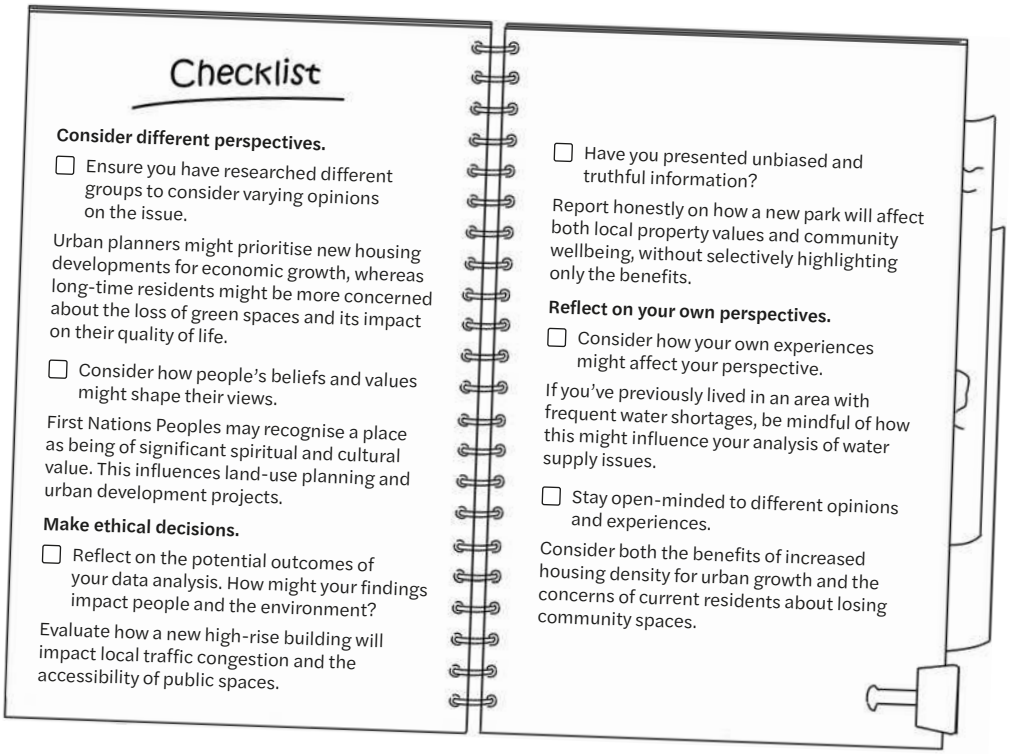
Water bodies

Imagine a map where the base layer shows geospatial data such as locations of rivers, lakes and oceans. This layer outlines where all the major bodies of water are in an area.

5 I can follow ethical practices when working with data

When working with geographical data, it's important to think about making decisions that are fair and respectful. You need to ensure you are considering different perspectives, impacts on people and place, and ensuring the right to peoples' privacy and equal representation.

Source 24: When reviewing your data, use the following checklist to ensure you are using data ethically.



Checklist

Consider different perspectives.

☐ Ensure you have researched different groups to consider varying opinions on the issue.

Urban planners might prioritise new housing developments for economic growth, whereas long-time residents might be more concerned about the loss of green spaces and its impact on their quality of life.

☐ Consider how people's beliefs and values might shape their views.

First Nations Peoples may recognise a place as being of significant spiritual and cultural value. This influences land-use planning and urban development projects.

Make ethical decisions.

☐ Reflect on the potential outcomes of your data analysis. How might your findings impact people and the environment?

Evaluate how a new high-rise building will impact local traffic congestion and the accessibility of public spaces.

☐ Have you presented unbiased and truthful information?

Report honestly on how a new park will affect both local property values and community wellbeing, without selectively highlighting only the benefits.

Reflect on your own perspectives.

☐ Consider how your own experiences might affect your perspective.

If you've previously lived in an area with frequent water shortages, be mindful of how this might influence your analysis of water supply issues.

☐ Stay open-minded to different opinions and experiences.

Consider both the benefits of increased housing density for urban growth and the concerns of current residents about losing community spaces.

Interpreting information

Graphs and maps use colours and symbols to represent data, but they are only useful in an inquiry if the geographer explains them and puts them into context for the audience.

1 I can read graphs and maps

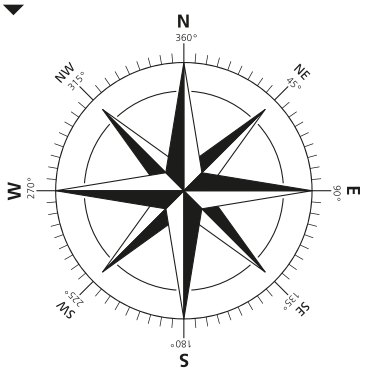
Direction

Geographers use compass points to give accurate directions because these points do not change. No matter where you are, the hand on a magnetic compass will always point towards the Magnetic North Pole.

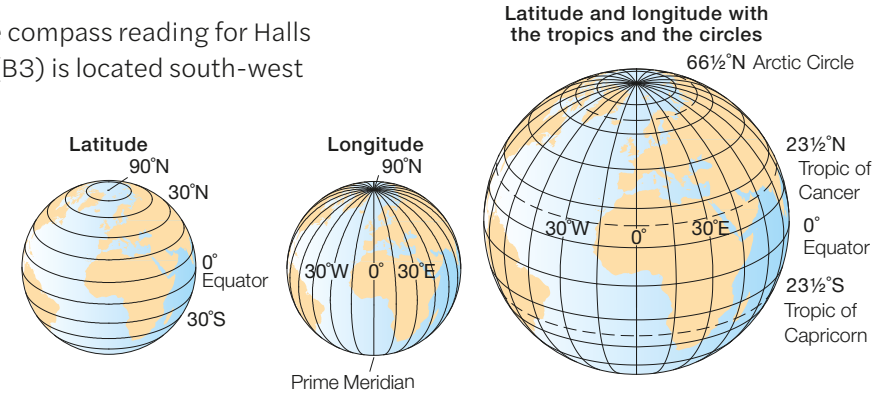
The four cardinal points on a compass are north, east, south and west. The points in between, such as north-east and north-north-east, give more accurate directions. A bearing is the angle measured in degrees clockwise from north to a direction line: a bearing of 90° is due east and a bearing of 180° is due south. Bearings give you 360 points of direction. They are used where highly accurate direction is important, such as in air, sea and land navigation.

On the map of Australia in Source 27, the compass reading for Halls Creek (C4) is east of Broome. Port Hedland (B3) is located south-west of Broome.

Source 25: Cardinal and intercardinal points of the compass



Source 26: To give an accurate location of a place, a geographical grid consisting of imaginary lines of latitude and longitude is used.



Latitude and longitude

We can use latitude and longitude to pinpoint any place in the world with great accuracy. This grid system is used in maps for long-distance navigation. Latitude is stated before longitude.

Parallels of latitude are imaginary lines drawn around the Earth from east to west. Lines of latitude are parallel to one another and are measured in degrees north and south of the equator (0° latitude). The Tropic of Cancer (23.5°N) is the most northerly and the Tropic of Capricorn (23.5°S) is the most southerly parallel of latitude at which the Sun can be directly overhead.

Meridians of longitude are imaginary lines that run from the North Pole to the South Pole. Degrees of longitude increase to the east and west of the prime meridian (0°), which runs through Greenwich, near London. The International Date Line (180°) marks the division point of the western and eastern hemispheres.

Example

In Source 27, Tanami, Northern Territory, is located 20° south of the equator and 130° east of the prime meridian.

For more accuracy, each degree can be further divided into 60 minutes (') and each minute into 60 seconds ("). The location of Darwin is 12°27'26"S 130°50'12"E, expressed in degrees, minutes and seconds.

Political map of Australia

Source: Mapgraphics

Source 27: This political map contains three different ways to locate places – lines of latitude and longitude, an alphanumeric grid and a direction arrow.

Scale

Scale is important in geography as it allows us to make maps and other images, and shrink them down to a size where we can see patterns, distributions and changes over time.

Scale is the ratio between the distance shown on the map and the real distance. To calculate the real distance between Sydney (F2) and Canberra (E2) in Source 27, mark the distance between the cities on the edge of a piece of paper, then place the edge of the paper under the linear scale. You will find the distance is about 250 kilometres. In the source, the scale is shown in three different ways:

- the linear scale is like a ruler for you to measure distances on the map
- the scale statement uses words to say 1 centimetre on the map represents 230 kilometres on the ground
- as a representative fraction – 1:23 000 000 (1 cm = 23 000 000 cm).

Source 28: This car model is a scaled-down version of the real car. This is a 1:64 scale model of a VW Beetle car. One centimetre length of the model represents 64 centimetres of the real car.

Types of maps

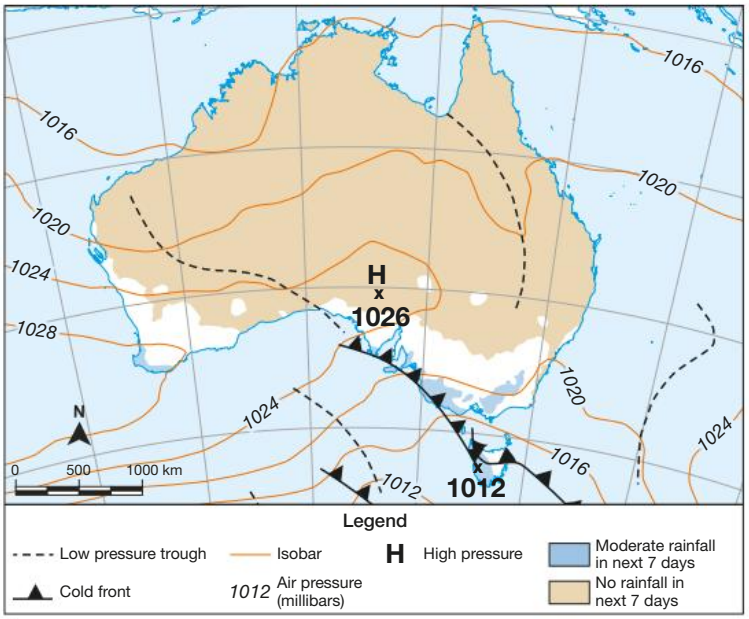
Weather maps

Weather maps show conditions in the atmosphere.

The curved lines you see on a weather map are called **isobars**, and they join areas of the same barometric pressure. Air circulates around high pressure in a clockwise direction and low pressure in an anticlockwise direction, so isobars also indicate the direction of the wind. When isobars are close together, this indicates strong winds. When they are far apart, winds are light.

A cold front line marks the forward boundary of a cold air mass and the triangles point in the direction the cold front is moving. Clouds and rain are expected with a cold front.

Weather map – Australia, 23 August 2017



Source 29: A weather map, also known as a **synoptic chart**, showing Australia on 23 August 2017

Source: Mapgraphics/ Bureau of Meteorology

Choropleth maps

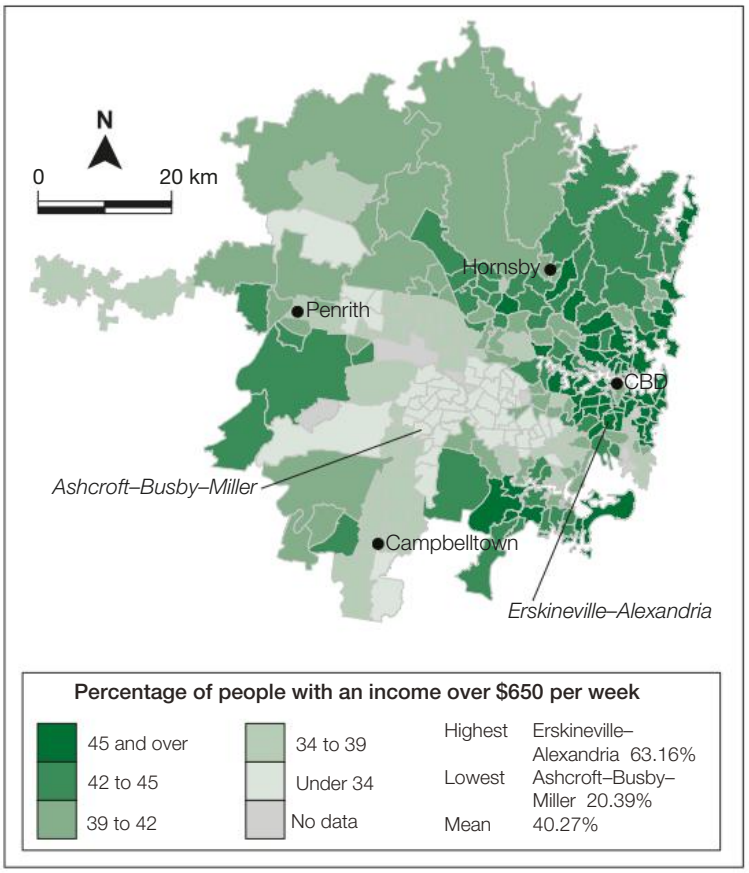
Choropleth maps use colour to show the spatial distribution of data.

To enable the viewer to quickly make sense of a pattern, choropleth maps use different shades of the same colour to reflect a pattern. Darker shades show 'the most' of something and lighter shades show 'the least'.

This choropleth map shows the percentage of people with an income of more than $650 per week in the Local Government Areas (LGAs) of Sydney. The pattern shows that a higher percentage of people earning more than $650 per week live north and directly south of the Central Business District (CBD). A lower percentage of people earning more than $650 per week are located in the LGAs to the west of the CBD.

The graded colour scheme on choropleth maps enables us to see exceptions to the general pattern: the LGAs south and west of Penrith have 42–45 per cent of their working population earning more than $650 per week; higher than the surrounding area.

Income distribution: Sydney



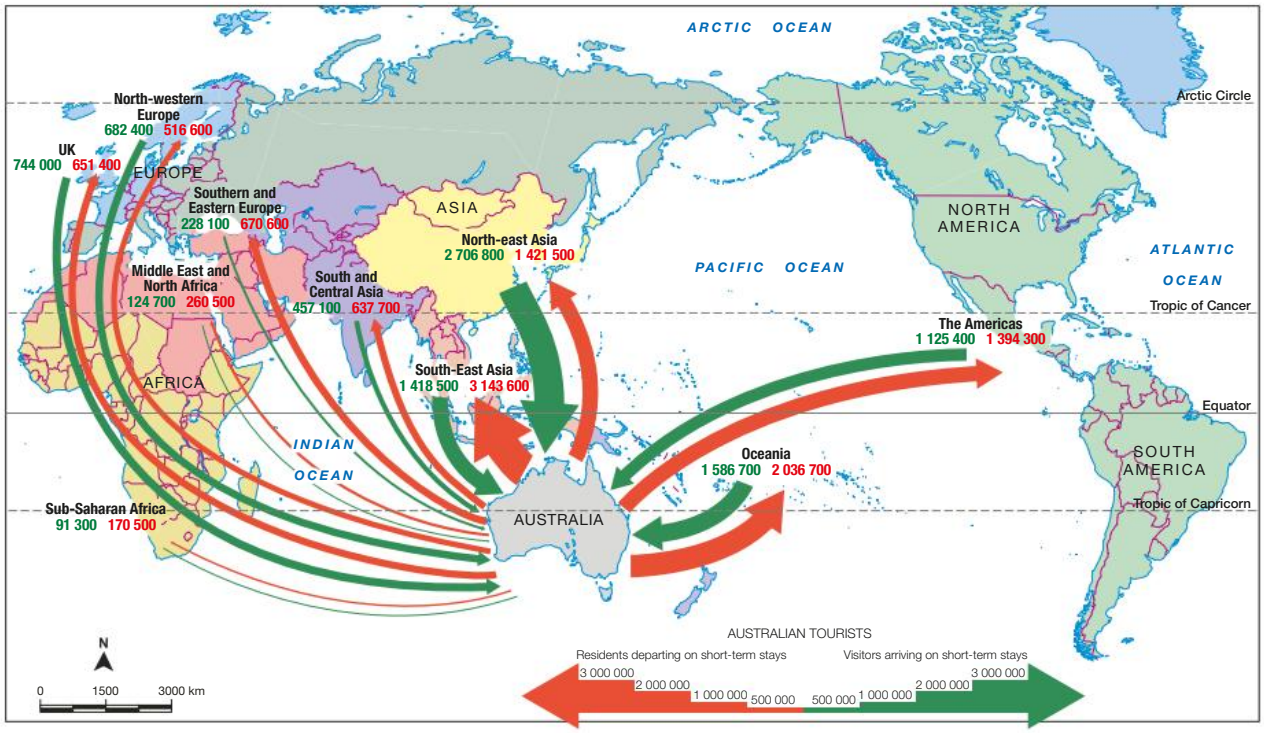
Source: Mapgraphics

Source 30: Choropleth map showing the distribution of income in Sydney's LGAs

Flow maps

Arrows show direction of movement and thickness shows size of movement.

Australian tourism: Arrivals and departures



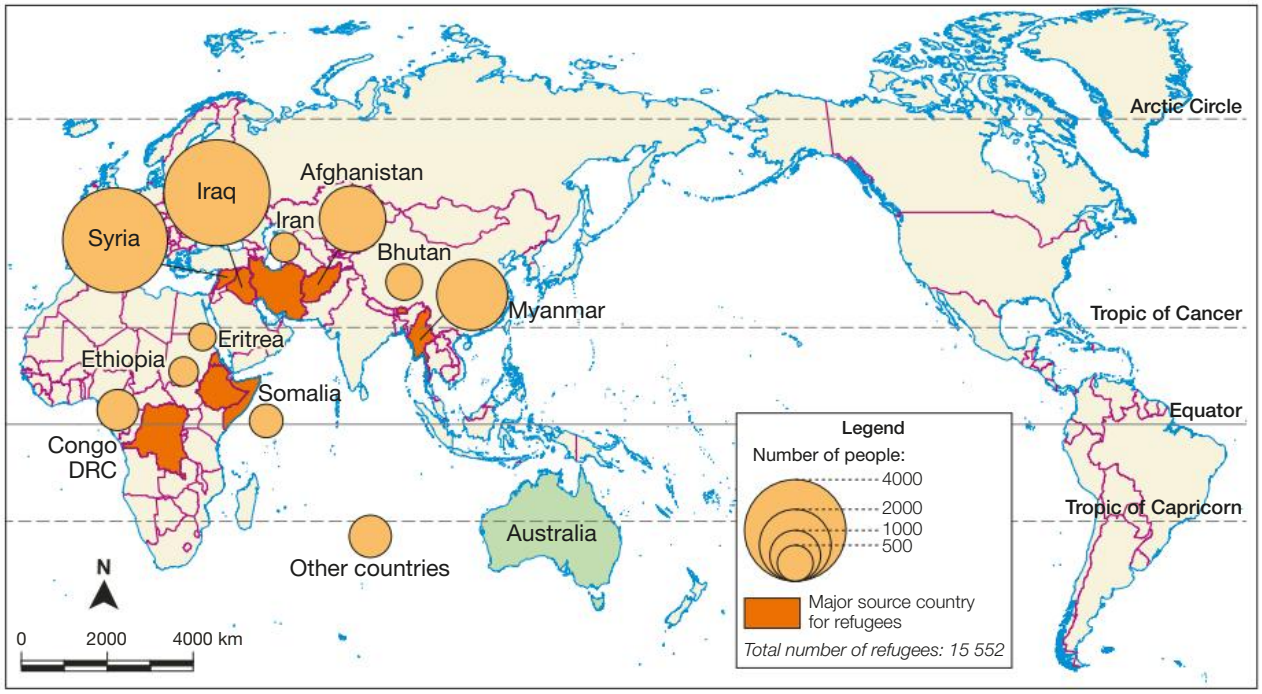
Source: Mapgraphics

Source 31: Flow map showing Australia's international tourist arrivals and departures

Proportional symbol maps

A proportional symbol map uses map symbols (such as circles) that vary in size to represent the data value. The larger the symbol, the greater the value.

Refugee arrivals to Australia, 2016



Source 32: Proportional symbol map showing the number of refugees coming to Australia in 2016

Source: Mapgraphics

Topographic maps

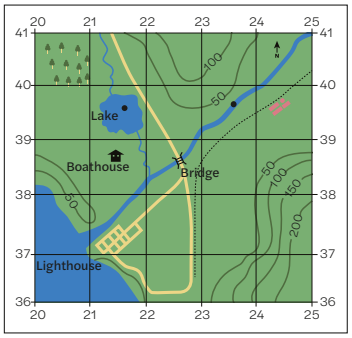
Topography is the study of land surface. Topographic maps show the different human and natural features on the ground, such as towns, roads, railways, forests, lakes and rivers. Topographic maps use contour lines to show different heights, helping you identify the shape of the land and features such as hills, valleys and ridges. A grid over the topographic map allows you to find relative and absolute locations.

Contour lines

Contour lines are imaginary lines on a map that join points of the same height above sea level.

When contour lines are close together, the land is steeper, and when they are spaced further apart, the land is flatter. On the contour map in Source 35, the town of Tully (86°E, 16°N) is located in a flat valley between steep mountain ranges that surround it. The contour lines in the valley are widely spaced. The contour interval is the difference in height between the contour lines. For example, the contour interval used in Source 33 is 50 metres.

A sample topographic map



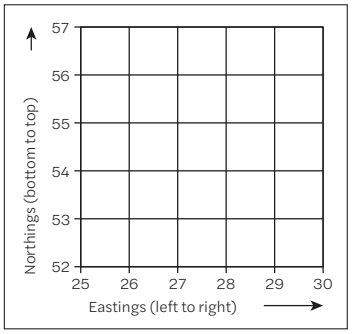
Source 33: This simple map shows contour lines and grid references.

Grid referencing

It is not always easy to describe a specific point on a map using directional terms. Instead, you can use the grid references, also called the area reference (AR), to show the exact or **absolute location** of that place.

For example, you may want to highlight the exact position of the boathouse using the map in Source 33. If you spent time explaining where this was, you would be describing the relative location of that place. You might say, 'It is north-north-east of the lighthouse and west of the bridge'.

To read an area reference, we first look at the numbers (or letters) associated with the vertical lines, reading from left to right – these are called 'eastings'. We then look at the numbers associated with the horizontal lines, reading from the bottom of the map to the top – these are called 'northings'.



Source 34: An example of grid references

Example

In Source 33, the boathouse is located at the four-figure grid reference AR2138. This reference takes us to the bottom left-hand corner of the grid square that the boathouse is located in. The lake is located at AR2139 and the bridge is located at AR2238.

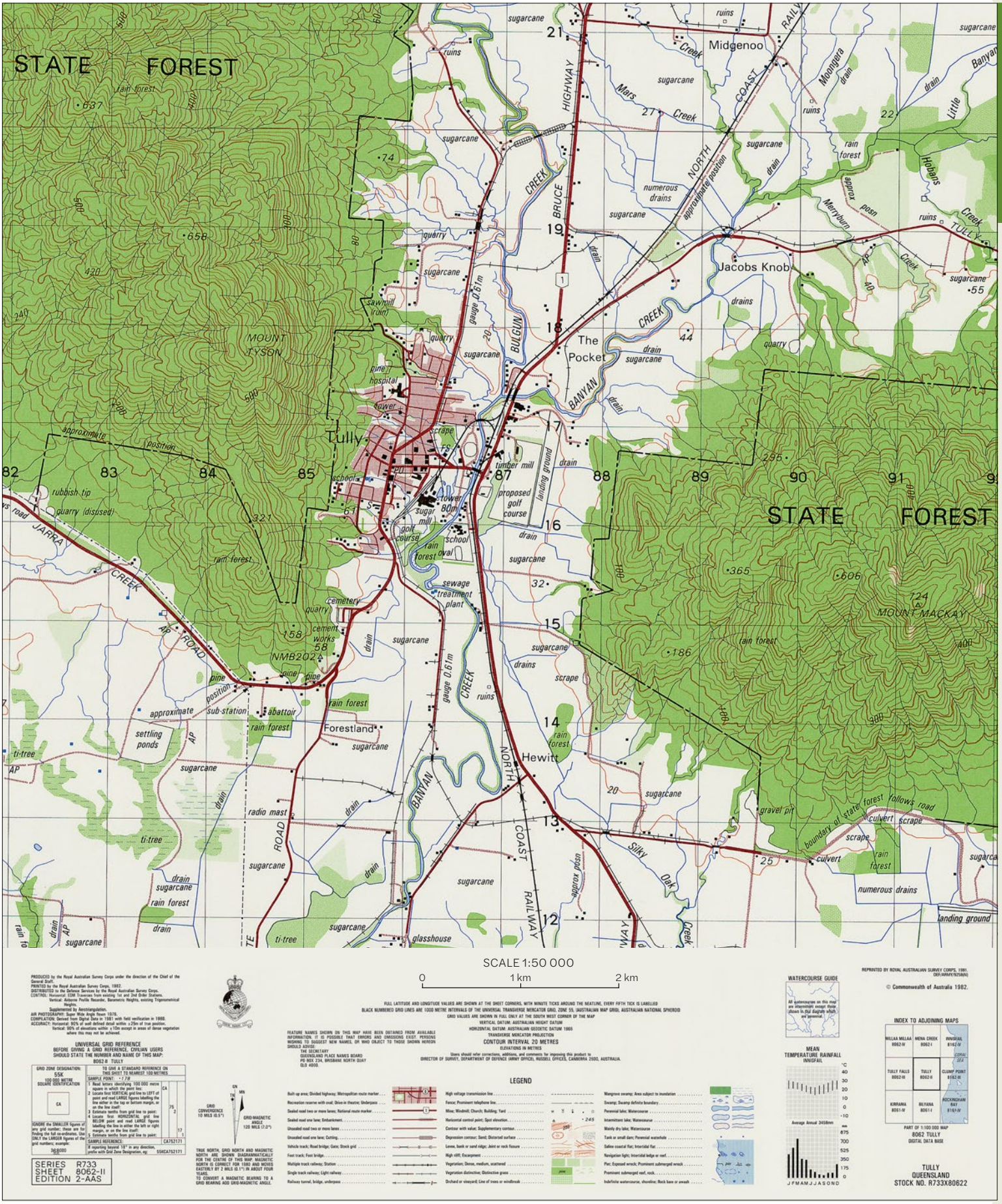
Gradient

Contour lines and spot heights, such as those shown at the top of mountains, can be used to calculate gradient and local relief. Gradient and local relief are important influences on land use.

The formula used to calculate gradient is Vertical Rise (VR; the change in height between two points – use the contour lines) divided by Horizontal Run (HR; the horizontal distance between two points – use the scale map). Make sure that they are using the same unit of measurement.

For example, if the VR is 100 and the HR is 1000 the gradient is 100/1000 or 1/10. This means that for every 10 metres you travel across the land you have walked uphill by 1 metre.

Tully 1:50 000 topographic map



▲ **Source 35:** Tully 1:50 000 topographic map

Source: Commonwealth of Australia (Geoscience Australia)

Climate graphs

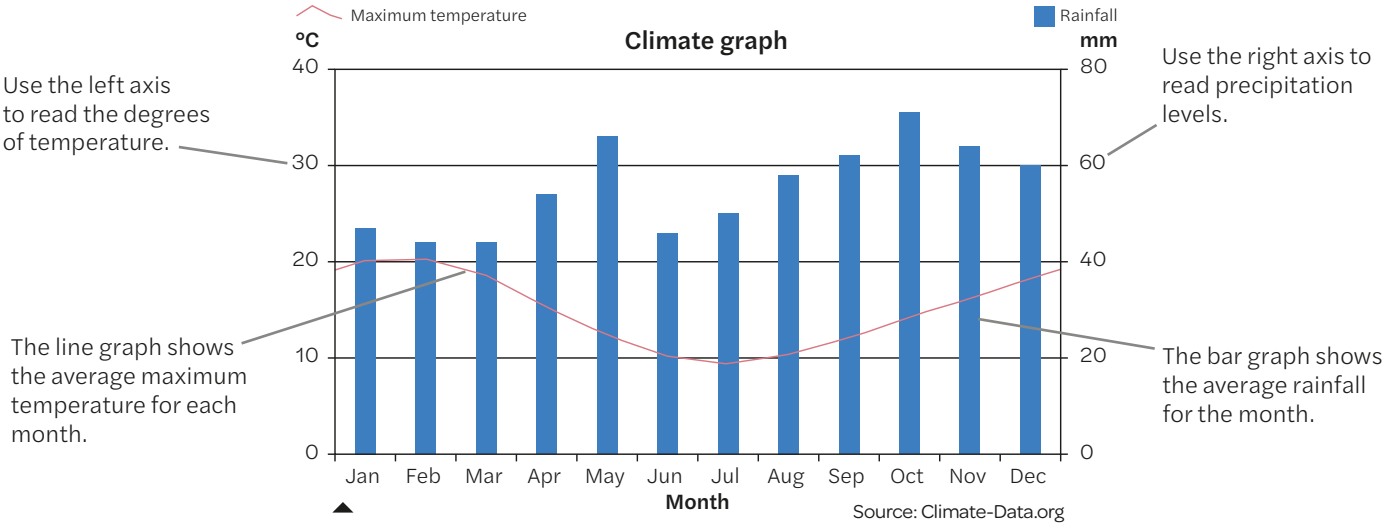
A climate graph shows two types of data on one graph. It shows both the average temperature and the rainfall that a region usually receives over a year.

How do I read climate graphs?

This **climate graph** shows:

- maximum temperature (in degrees Celsius) on the left *y*-axis
- rainfall (in millimetres) on the right *y*-axis
- the months of the year on the *x*-axis
- the red line (or maximum temperature) varying throughout the year, peaking from December to March and decreasing from April to July in the southern hemisphere
- the amount of precipitation varying, shown with the blue bars. In Australia, it tends to be highest in spring from September to November – with the exception of another peak in May.

The best way to describe the patterns we can see in a climate graph is by using two PQE analyses (page 438) – one for temperature and one for precipitation.



Source 36: A climate graph

What is the difference between weather and climate?

Look outside your window and describe today's temperature and the amount of rainfall there has been. Is it cloudy? Has there been a thunderstorm or is the Sun shining? What you have just described is the weather. Weather changes daily and is usually predictable up to 10 days in advance. Apps on your smartphone and the last five minutes of the television news show you these predictions of daily weather.

Now close your eyes and describe the climate of Australia. Do you imagine Australia being hot and dry? Just because we can describe Australia as hot and dry does not mean it is like this everywhere, all year round. Unlike the weather, climate helps us describe the yearly (annual) average temperature and level of precipitation (rainfall and snow) in a region or country.

Climate graphs help us visualise the climate of a region or country. Climate change describes how the average temperature and precipitation levels of a location are changing over time.

Population profiles

Population profiles are graphs that show the percentage of females and males in particular age groups in a population.

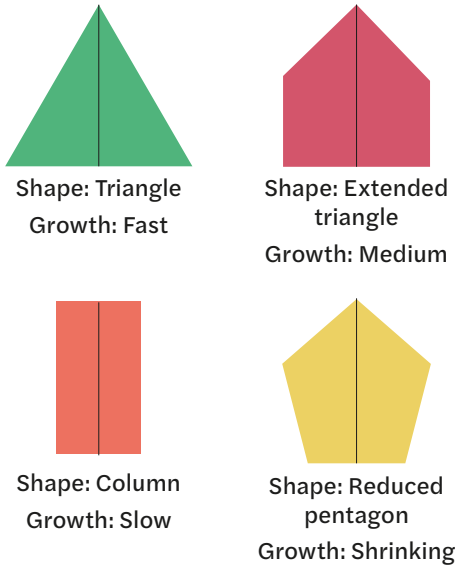
A population profile can be made on a local, national or global scale. On a population profile, female data is normally shown on the right side and male data on the left. The length of each bar represents the number or percentage of males or females in that age group. Source 38 shows the percentage. To calculate the number, use the total population of the place.

The shape of the profile tells us a lot about the population

Population profiles come in different shapes: triangles, columns, pentagons and so on. The shape tells you about the population. If the shape is:

- a triangle: growing population, with more young people than old people
- a box: slow or stable growth, with equal numbers of old and young people
- an upside-down profile: aging or declining population, with more old people than young people.

Source 37: Various population profiles; the shape of the profile tells you about the population.



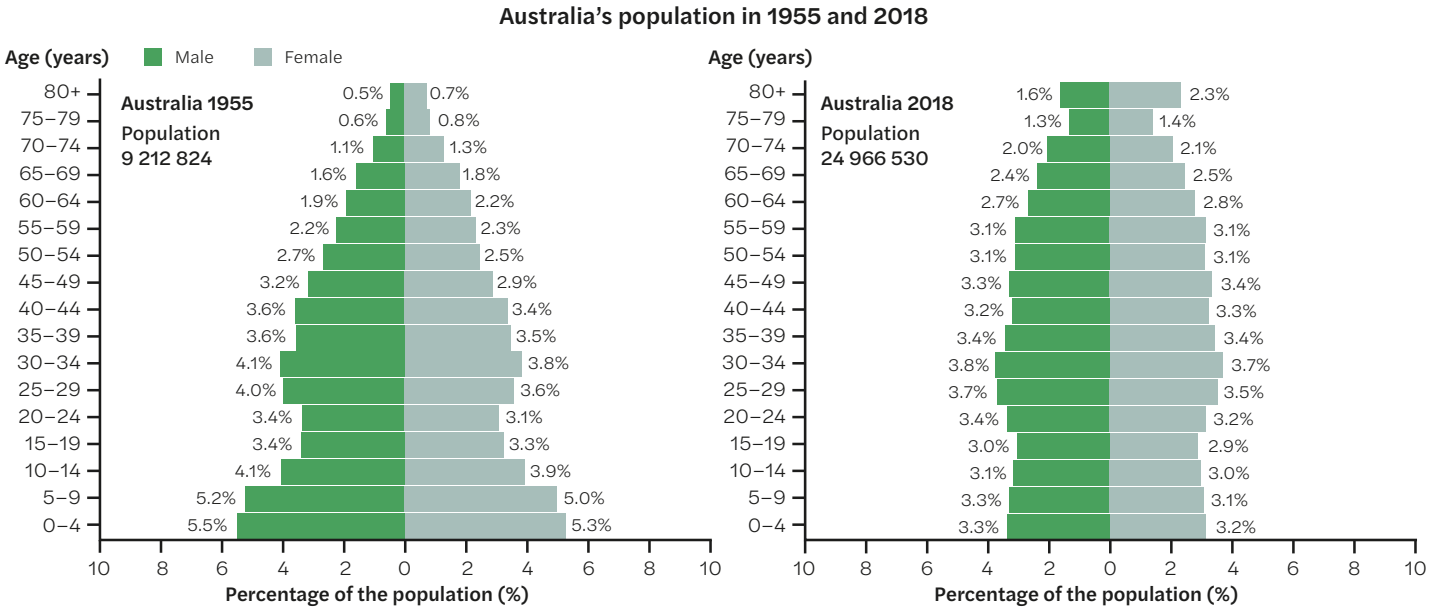
Example

How do I interpret a population profile?

The population profiles in Source 38 show Australia's population in 1955 and 2018. In 1955, many people were in the age range 0–14. Approximately 5.5 per cent of the population were males aged 0–4 years old, and 5.3 per cent were females aged 0–4 years old. We also had many working-age people. For example, 4.1 per cent of the population were males aged 30–34, and 3.8 per cent were females aged 30–34.

In 2018, the percentage of younger people in the population is significantly lower and there are more people in the older age ranges. The total population also grew to 25 million people.

Source 38: Population profiles showing Australia's population in 1955 (left) and 2018 (right)



Source: PopulationPyramid.net

Photographs

Photographs are a valuable tool in geography. They help capture a moment in time and can provide a greater level of visual detail that is difficult to capture in a quick field sketch. Taking photos is part of modern culture, with the average person taking at least 20 photos each day.

Photographs are often taken for a specific purpose and only show selected perspectives. In geography there are four main types of photographs: ground-level, oblique aerial, vertical aerial and satellite.

▲ **Source 39:** Ground-level photos are taken at eye level. You probably take these most often using your phone. These photos can show details like landscapes, people and activities.

▲ **Source 40:** Oblique aerial photos are taken from an angle and are often used to show relationships or interconnections between phenomena.

▲ **Source 41:** Vertical aerial photos are taken from above, looking straight down. These photos can show patterns over large areas and help viewers understand spatial distributions and patterns.

▲ **Source 42:** Satellite images are taken from space showing a wide view of the Earth.

How do I interpret a photograph?

1 **Look closely:** Start by examining the photograph. What do you see? Identify specific features in the image, such as people, buildings or natural landscapes.

2 **Consider the purpose:** Think about why the photograph was taken. What message or story is it trying to convey? This can change how you understand the image. What can you infer from the photograph? What guesses can you make?

3 **Think about the context:** Remember that photographs show only part of a bigger picture. Try to understand the broader context of what is happening around the image. What information do you need to understand the photograph and its purpose?

4 **Use prior knowledge:** Draw on what you already know about the topic. This will help you make informed guesses or predictions about what the photograph is showing.

5 **Ask questions:** Ask yourself questions about the photograph. What details stand out? What might be missing from the image? What other images do you need to understand the whole story?

Satellite images

Satellite images are pictures of Earth taken from space. Satellites orbit the Earth and record images of the Earth's surface. We can use this data to see an event, such as a volcanic eruption, or to observe a change in land cover or other spatial patterns over time. Satellite images taken in daylight provide the most information.

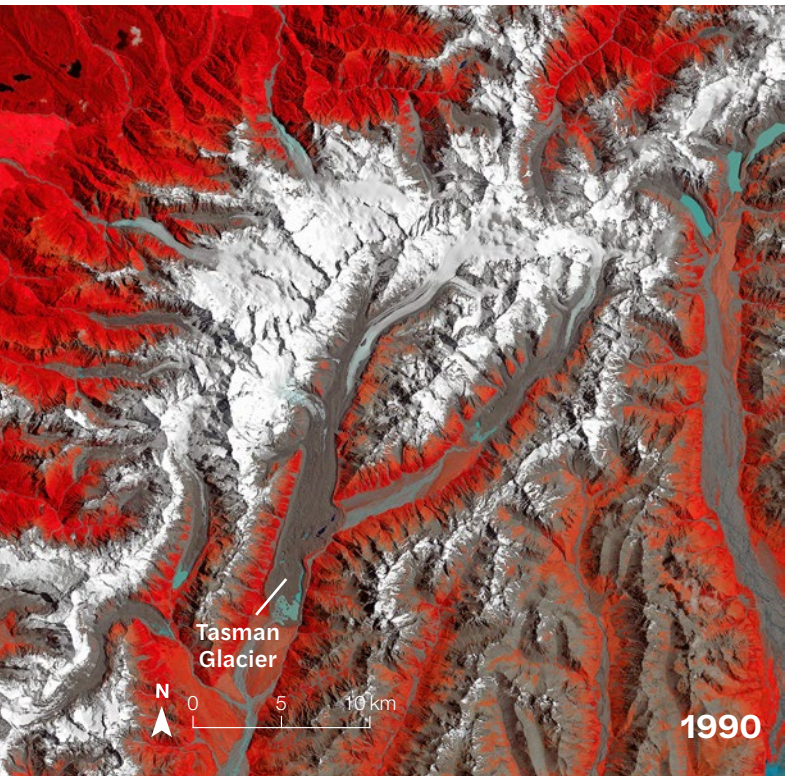
How can I use colour to interpret satellite images?

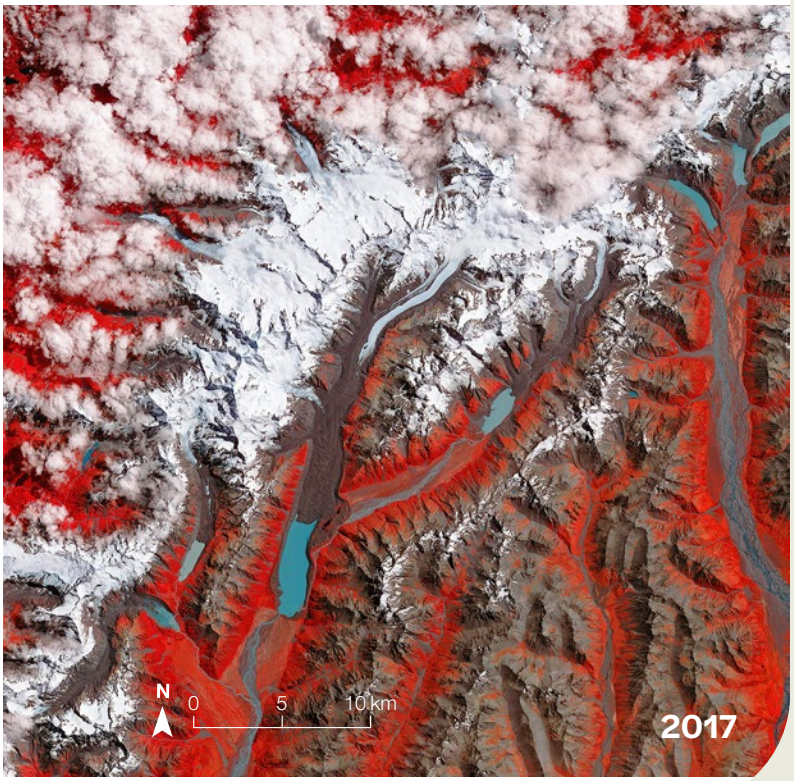
When you are trying to interpret a satellite image, look for colours and shapes. Colour will normally give you some idea about land cover. For example, in naturally coloured satellite images, green usually indicates vegetation, blue is water and brown is usually desert or barren land. False colour satellite images substitute colours to make patterns clearer to see. For example, Source 44 substitutes red for green to show vegetation.

White can indicate snow or clouds, so here you need to look at shapes. Clouds tend to look fluffy and, depending on the time of day, can cast a shadow onto the ground. Snow is usually on the tops of mountains, and you can see where it is melting or following the slopes. Looking for shapes is also helpful when you are trying to identify rivers or reservoirs, which can be seen as blue lines.

▲ **Source 43:** Satellite images taken at night provide different information from those taken during the day. This photo of Italy shows the extent of the urban areas through the lights at night.

▼ **Source 44:** New Zealand's Tasman Glacier satellite images taken on 30 December 1990 and 29 January 2017. In these false-colour images, white is snow and ice, red is vegetation, blue is water, and brown is soil (including sediment-covered glaciers). It can be clearly seen that the Tasman Glacier is quickly retreating, replaced by a glacial lake shown as bright blue.





2 I can describe distributions and patterns

PQE

In geography, we use maps and graphs to understand what is happening in the world around us. In many cases, these maps and graphs provide us with information about patterns and the location or distribution of specific items.

The formula PQE helps us to describe these patterns and their distribution. **P** stands for pattern, **Q** stands for quantify (or 'how many') and **E** stands for exception.

P Pattern

A pattern is a trend in the data. When you look for a pattern, you need to read the legend and interpret what the colours or symbols mean.

On a graph or map, you might notice data points are clustered in one spot, or you might see the opposite, that they are distributed unevenly. You can then use compass points or the names of places to describe where the data clusters appear.

Descriptive words you can use include: *clustered, even, uneven, highly distributed, north, south, east, west, increase, decrease* and *fluctuate.*

Q Quantify

When we quantify our pattern, we need to use numerical data to provide evidence of what we see.

You could obtain data by using the legend, by using the scale to measure or by conducting a count. You need to ensure that the data you provide relates directly to the pattern you recorded earlier.

E Exception

An exception is a piece of data on the map or graph that doesn't 'fit in' with the general pattern. When you spot an exception on a map or graph, it is good to quantify it to provide a comparison to your original pattern description.

What is the difference between qualifying data and quantifying data?

PQE helps us describe patterns and distributions. When we describe, we 'say what we see'. In a PQE analysis, we do not explain or give a reason why we see patterns; this is done in a SHEEPT analysis (page 440).

To quantify means to use percentages, counts, ratios or data from the legend to provide more details about the different patterns you are writing about. To qualify a statement means you use general descriptive words such as 'large', 'many', 'small scale', 'enormous', 'broad' or 'tiny' to describe a pattern or change.

By using quantifiable data, we can more easily see key differences between locations or even monitor change over time. Imagine that your PQE analysis stated: 'There are a lot of people who like ice-cream in the United States'. Does this sentence allow you to create a detailed visual of what is happening around the country? Or does this quantified statement provide more detail: 'Six states in the west prefer mint chocolate chip and four prefer Oreo cookies and cream'?

How do I start my PQE sentences?

When writing a PQE analysis, start sentences with the following key terms:

Example

Pattern:

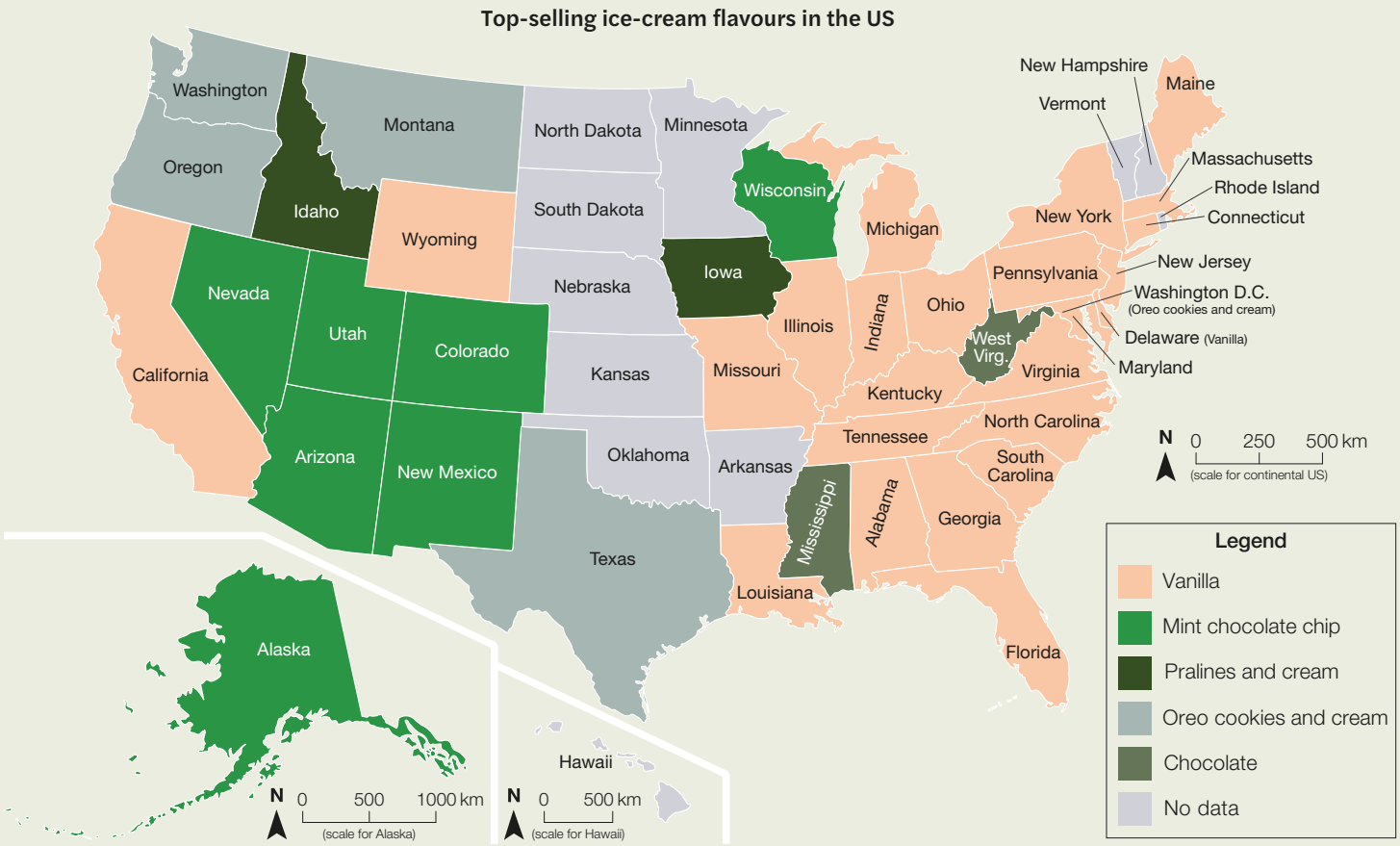
Overall, the western United States prefers mint chocolate chip and Oreo cookies and cream ice cream, while the eastern United States prefers vanilla and chocolate.

Quantify:

To quantify, six states on the west coast prefer mint chocolate chip and four western states prefer Oreo cookies and cream.

Exception:

However, the state of Wisconsin, located in the eastern United States, has also voted mint chocolate as its favourite flavour, which is an exception to the pattern.



Source 45: This map of the United States shows the favourite Baskin-Robbins ice-cream flavours.

Source: Base map from iStock/Vectorius2016, data from Baskin Robbins

3 I can explain distributions and patterns

SHEEPT is an acronym that helps you explain the reasons why a spatial pattern occurs. This acronym stands for: Social, Historical, Economic, Environmental, Political and Technological.

SHEEPT

S Social

Social factors are anything to do with people. Social factors include population, culture, language and religion.

H Historical

Historical factors are anything to do with our past. Historical events, buildings, people and changes to climate all influence what we see in our world today.

E Economic

Economic factors are those relating to money. In geography, how much people earn, how much things cost and how much money is spent can provide us with information about a place. Tourism is a huge economic factor for many regions.

E Environmental

Environmental factors are those relating to the natural or human environments on Earth. Humans can manipulate the environment to suit their needs.

Source 46: The Murray River passing the small rural Victorian city of Mildura

How do I write a SHEEPT analysis?

SHEEPT is usually used to explain why patterns or distributions may occur in a particular region. It can also be used to expand our thinking when annotating images or considering new geographical content. When completing a SHEEPT analysis, you do not need to use each of the terms directly.

Example

Below is an example of how we can write a SHEEPT analysis for an image. The bold terms indicate the use of a SHEEPT term.

The Murray–Darling Basin is a mixed-use area that supports agriculture, recreation, tourism and a broad community of people. The region faces significant **social** challenges due to its reliance on water resources for these varied uses. **Historically**, European colonisation introduced large-scale farming and altered river flows, impacting the region's water management and infrastructure. The Murray–Darling Basin is vital for the Australian and local **economies** through key exports such as food production and tourism. The region's environment suffers from reduced river flows, salinity, and habitat loss due to high water extraction. Complex **political** regulations and water-sharing agreements at federal and state levels aim to balance competing demands and manage resources. **Technological** advancements, such as satellite monitoring and efficient irrigation systems, are crucial for tracking water use and promoting sustainable practices in the Murray–Darling Basin.

P Political

Political factors are those to do with the government or leading groups, and these factors usually involve laws and policies.

T Technological

Technological factors relate to the different types of technology used. It could relate to transport or building technologies or even geospatial technologies.

4 I can predict change to patterns

Once you understand what has happened in the past and in the present, you can make evidence-driven predictions and suggest how patterns may change in the future.

The following steps can be used to help guide you to make predictions in geography.

1. Start by gathering current and past data about the topic; for example, past and current air-quality data for a region.
2. Look for trends or changes in the data; for example, air quality in a region may have decreased over time due to increased pollution from a growing population.
3. Think about other things that might affect the future, such as local policies or environmental factors. The SHEEPT factors may help you think more broadly; for example, a new environmental regulation (political) or advancements in clean technology (technological) could improve air quality.

5 I can use geographical concepts to structure data analysis

The geographical concepts SPICESS can be used to help you structure data analysis. You do not need to specifically mention each concept. Highly skilled analyses will use the meaning of the concepts to help think more broadly about a topic.

The seven geographical concepts – space, place, interconnection, change, environment, sustainability and scale – are fundamental for structuring geographical analysis. The following shows you an example using liveability for context.

- **Space** refers to the way that we use, *change* and distribute things on the Earth's surface. Using space, you may evaluate how the arrangement of facilities and services impacts accessibility. For example, how far away from a housing estate is the closest supermarket or medical centre?
- **Place** helps in examining the unique characteristics and significance of specific locations. By focusing on place, you may assess how a location's characteristics contribute to a community's sense of identity and belonging, influencing overall liveability.
- **Interconnection** is the idea that two things or phenomena are related, interact or are linked in some way. Recognising these links may help you understand how various factors, such as community initiatives or *environmental* policies, influence liveability.
- **Change** refers to how a place is altered due to shifts in the *environment* or to meet the needs of humans. You may predict the future of liveability in a place based on current data and historical patterns.
- **Environment** explores the built and physical features of the Earth. Interconnection may help you consider how *environmental* quality impacts the liveability of a *place*.
- **Sustainability** focuses on maintaining and preserving resources and *environments* for future generations. You may consider how current policies can ensure long-term *environmental* quality to maintain liveability.
- **Scale** usually refers to the size of something or describes different spatial levels. You may consider how issues and solutions may vary across different local or national *scales*.

Source 47: Urmia Salt Lake in Iran. Iran is facing water stress, with over 90 per cent of the country's available water used for agriculture. Climate change is likely to exacerbate the issue.

Concluding and decision-making

Making conclusions

Drawing conclusions in geography involves interpreting and summarising the findings from your research or data analysis in order to answer a specific question or address an issue or challenge.

Source 48: Water is a valuable resource that can have positive and negative impacts on people and places.

1 I can answer geography questions

The first step to writing a conclusion is thinking about a simple answer to your inquiry question. From all the things you have read and done to collect information, what have you found out?

Example

For example, 'Why has water usage increased in our area?'

Answer: Water usage in our area has increased due to population growth, urban development and changes in climate, which have led to higher water demand for drinking, hygiene and garden maintenance.

2 I can describe the impact of geographical phenomena

In geography, an impact is the effect a phenomenon, action or change has on people, places or the environment.

Impacts can be either positive or negative and occur at a range of scales. For example:

- Water conservation projects have positive impacts: A community implemented a water conservation project by installing water-efficient fixtures and promoting water-saving habits to reduce overall water consumption.
- Overuse of water resources has negative impacts: Overuse of water from freshwater sources such as rivers for agriculture can lead to reduced river flow, negatively impacting environments.

When drawing conclusions for your own inquiry question, consider the positive or negative impacts you have researched.

Example

Consider the question, 'Why has water usage increased in our area?'

As more people move to the area, there is higher demand for water, putting pressure on our local water supply. During the recent drought, we faced water shortages and had to pay higher prices for water in our homes. The lack of water also affected the local environment, with Main River having less water flowing through it.

3 I can write evidence-based conclusions

A conclusion is written when you have reviewed all the information. It is a summary of your results and outlines the key findings of your research. No new ideas should be raised in a conclusion.

Example

Consider the question, 'Why has water usage increased in our area?'

A conclusion could read something like this for the fictional suburb of Happy Town:

This inquiry aimed to understand why water usage has increased in our area. Our research shows that the increase in water use in Happy Town is mainly due to more people moving to the town and more buildings being constructed in the local region. People who participated in our survey are worried about higher water costs because of the growing demand. Recent droughts have also made it harder for local farms, which need more water for crops. Although our study faced some limitations, such as incomplete survey data, our findings highlight water usage as a local issue. Addressing water usage is important for preventing future water shortages and ensuring sustainability.

4 I can assess the reliability of data

While data may appear useful, it is not always reliable. Reliability means information is consistent and dependable; in other words, you can trust it to be accurate.

To ensure the data you use is reliable, ask yourself these questions:

- When was the information written? If the data is more than 10 years old, it may not be reliable to represent current patterns and distributions.
- Check who wrote the information. Sites like Wikipedia can be updated by the public. Rely on peer-reviewed information written by authoritative voices. Peer-reviewed means other experts in the field have checked and approved the work before it is published, making sure it is accurate and reliable.

1. Begin by revisiting the inquiry question or topic to remind your audience of the focus of your investigation.
2. Briefly summarise your main findings, highlighting the most important data or insights that help provide answers to the inquiry question.
3. Acknowledge any limitations in your research. Did it rain on your field day so there weren't many people to survey? Was there a topic you could not find any data on?
4. Finish your conclusion with a clear, concise statement that emphasises the importance of your inquiry.

Source 49: How to write an evidence-based conclusion

5 I can evaluate ethical considerations

There are several ethical considerations when drawing conclusions in geography. They involve properly referencing materials used and ensuring a range of perspectives have been studied.

Perspectives and bias

In Geography, it is important to consider a range of perspectives and understandings on a topic. You need to ensure you present data honestly without altering its meaning or context.

Copyright

Ensure you have cited the secondary data you have collected. While copying and pasting is a good way to start collecting general ideas, the real skill is in reading, interpreting and applying the information you have found to your inquiry question, using your own words and interpretations. Remember to acknowledge the original sources by using a bibliography.

In-text citations and bibliographies

There are a range of styles and formats to create a bibliography. Quality bibliographies do not simply copy and paste URLs onto a page; they provide the information required to properly reference the material you accessed and used. The following bibliography formats are in line with APA styling.

List all entries in alphabetical order by the last name of the first author. If there's no author, use the title of the work.

Example

- **For books:**
  Author, A. A. (Year). *Title of the book*. Publisher.

  Example: Smith, J. A. (2020). *Understanding psychology*. Academic Press.
- **For journal articles:**
  Author, A. A. (Year). Title of the article. *Title of the Journal, volume number*(issue number), page range. https://doi.org/xx.xxx/yyyy

  Example: Doe, J. (2019). Cognitive development in children. *Journal of Child Psychology, 15*(3), 234–245. https://doi.org/10.1234/jcp.2019.6789
- **For websites:**
  Author, A. A. (Year, Month Day). Title of the webpage. *Website Name*. URL

  Example: Johnson, M. (2021, March 5). The effects of climate change. *Environmental News*. https://www.environmentalnews.com/effects-of-climate-change

Source 50: Consider how your own personal beliefs, values and understandings influence your perspective. Never exclude data because it doesn't fit with your original thoughts or ideas. New information or discovering new sides to the same story helps us learn about people and place.

Strategies

A geographical strategy is a planned set of actions to overcome a specific issue or challenge. A strategy is developed by identifying the problem, assessing impacts and implementing solutions.

1 I can describe a strategy

You can structure your description of a geographical strategy by considering these three questions:

1 **What are the goals?**
Describe the strategy being used to address a specific geographical issue.

2 **What actions are being taken?**
List the key steps or measures involved in the strategy.

3 **How are they doing it?**
Explain how the strategy is put into practice.

Example

The fictional suburb of Happy Town is planning to implement the Water Conservation Program.

1 **What are the goals?**
The Water Conservation Program aims to reduce water usage in Happy Town by 15 per cent over the next two years.

2 **What actions are being taken?**
The program includes installing water-efficient fixtures such as shower heads, promoting public awareness about water-saving practices, and offering incentives for reducing water use.

3 **How are they doing it?**
The program is carried out through developing partnerships with local businesses and community groups. A range of workshops and distribution of water-saving devices are provided to community members.

2 I can explain a strategy

When explaining a strategy, you may consider the following steps:

1 Outline what they are doing to undertake this strategy. What are the aims? Who is involved? What scale is it addressing (local, regional, national)? What do they need to do to successfully carry it out?

2 List the steps taken to carry out the strategy. This includes the methods or systems used.

3 Explain how these actions are organised and carried out, and who is responsible for each step.

4 How is the strategy managed? Discuss the roles of various **stakeholders** and how tasks are assigned and monitored. A stakeholder is someone who is affected or interested in the strategy; for example, individuals, communities, businesses, governments and organisations.

Example

Plan Melbourne 2017–2050 aims to improve liveability as Melbourne's population grows.

- One key idea is to create 20-minute neighbourhoods, where people can access services (shops, schools and health care) within a short walk or bike ride from home.
- In January 2018, a pilot program began in Croydon South, Strathmore and Sunshine West to test this idea.
- Local councils worked with residents to understand each neighbourhood's needs.
- Each group has a role:
  - local councils engage with the community
  - the Victorian Government coordinates the plan
  - residents share local knowledge to help improve their community.

Source 51: The 20-minute neighbourhood is one strategy being implemented to enhance the liveability of places.

3 I can predict the impact of a strategy

In geography, predicting means guessing what might happen in the future based on current information and past events. This can include things like how populations might grow, how water use may change or what effects climate change could have. Predictions help decision-makers prepare for possible future scenarios.

To predict the impact of a strategy, first you need to collect data and information on current patterns. Is the population in a place currently increasing? Is the local area increasing its access to facilities and services to cater to these growing needs? Then you need to consider these patterns and, using your understanding of the topic, suggest what might happen in the future.

Example

Plan Melbourne 2017–2050 and 20-minute neighbourhoods have several goals:

- **Improve community health:** As neighbourhoods become more walkable and accessible, residents may do more exercise like walking or bike riding to access local facilities.
- **Enhance social connectivity:** With facilities and services within walking distance, communities may feel less isolated and feel a greater sense of belonging.
- **Increase economic activity:** With more people living close to shops and services, more people may live and work locally.

4 I can design strategies

Recommending strategies not only allows you to apply your understanding of people and place, but also enables you to take real action and make a difference in your local community.

These steps can help you design your strategy.

1. First you need to clearly define the geographical issue or challenge you want to address. Think about how you might gather information to understand the challenges and brainstorm what is already being done to try to overcome these issues.
2. You then need to create specific, measurable, achievable, relevant and timely (SMART) goals that outline what you hope to achieve with your strategy.
3. Consider the community members, organisations and experts that may be impacted by this strategy. How might they feel about what you are planning to do?
4. Create a set of steps that will help you carry out your strategy.
5. How will you measure if your strategy is successful? Consider how you will measure whether your strategy has met its SMART goals.

Example

You might propose a community rainwater harvesting system to overcome local water scarcity. You could conduct research on local rainfall patterns, gather survey data from residents about their water needs, and design a plan that includes installation locations, maintenance education and potential funding sources. This strategy would aim to improve water access while developing community involvement and environmental awareness.

Source 52: Design your goals to be SMART.

5 I can consider perspectives to evaluate strategies

In geography, perspectives are the different ways people see and understand the world. These views can be influenced by things like culture, personal experiences, money and the environment. By learning about these different perspectives, geographers can better understand how groups of people interact with their surroundings and with one another.

When evaluating the success of strategies, it's important to consider that different people may have different expectations of outcomes. Recognising these varying perspectives ensures that we take everyone's views into account.

- Consider various viewpoints related to the strategy. Think about how personal values, cultural beliefs and economic needs might influence how different groups perceive the strategy. For example, how do local businesses and First Nations Peoples view the strategy?
- Reflect on how your own values and attitudes shape your understanding of the strategy. Think about what you value, and how your family's attitudes or beliefs impact how you think about a strategy. Your perspective may be different from those of others.
- Look at the possible impacts of the strategy from multiple angles. SHEEPT factors may help you broaden your thinking. For example, how might the strategy benefit some groups while causing challenges for others?
- Consider the strengths and weaknesses of the strategy based on the range of perspectives you explored. Think about how understanding these different views can lead to better and more inclusive decision-making.

Example

Here is an example of the need to consider different perspectives when considering a strategy for the fictional suburb of Happy Town.

In Happy Town, the government introduced a plan to make living more affordable. Many young people liked the new, cheaper apartments because they could move in and find local jobs. However, long-time residents were concerned about the loss of green spaces. They believed that with fewer open spaces, there would be fewer places for people to relax and play, which would affect mental health and make it harder for people to connect with each other. Some also worried that with more people living in the area, it could get too crowded and put pressure on local services. While the plan has helped young people afford housing, there is also a need to keep and improve green spaces to help people stay connected. Finding a balance between these needs will be key to making the plan successful in the long term.

Source 53: Different people have different perspectives.

Communicating

Presenting ideas

Communicating findings in geography is important because it helps us understand the information, make decisions, raise awareness of issues, take action and work together to solve geographical challenges.

1 I can describe phenomena using geographical terms

In Geography, 'phenomena' means things or events that we can see and study in the world. This includes natural events like weather, mountains and plants, as well as human activities like building cities or moving from one place to another.

Geographers look at these phenomena to understand what causes them, how they affect the world and how everything is connected. We can describe phenomena using a range of geographical terms. The glossary provides you with a range of geographical terms you may like to use. Some examples may be:

- **distribution:** refers to how things are spread out in a geographic area
- **density:** how close things are together in an area
- **patterns:** how things are organised in an area or trends we might observe on a map
- **scale:** the level of detail of an observation (e.g. local, regional, national, global)
- **spatial interaction:** the way phenomena are linked to each other
- **topography:** the physical features of a landscape or area, such as hills or valleys
- **climate zones:** areas with similar long-term weather conditions (e.g. tropical, arid, temperate zones)
- **region:** an area characterised by common features (e.g. cultural region, economic region).

Example

This example uses some geographical terms:

In Egypt, the Nile Delta and Nile Valley have high population *densities* as people use the river for drinking water and irrigation. Water needs to be used *sustainably* to make sure there is enough for everyone.

Source 54: The Nile is an important water source for the people of Cairo.

2 I can explain the relevance of information

While there is lots of information available, not all the data you collect will be relevant to your investigation. It is important to be able to sort out and categorise the information you collect.

- Does the information connect to your inquiry question?
- Does the information help show important patterns? For example, data on rainfall patterns can show areas at risk of drought.
- Can we use the information to inform decisions and planning? For example, population density data helps with planning facilities and services in a region.
- Does the information help provide examples or illustrate real-world issues or challenges? For example, long-term climate data is important for understanding and addressing the effects of climate change.

3 I can support explanations with data

Providing evidence makes your geographical explanations stronger and gives your audience a better understanding of the issues and challenges you are investigating. When writing explanations, use quantifiable data such as percentages to emphasise your ideas.

Example

Explanation without quantifiable data:

Water is unevenly distributed around the world. While a large portion of the Earth's surface is covered in water, only a small amount is fresh water available for human use, and much of that is trapped in ice caps.

Explanation with quantifiable data:

Around the world, water is unevenly distributed. Even though 70 per cent of the Earth's surface is covered in water, only 2.5 per cent is fresh water, and most of that is in ice caps, leaving around 1 per cent available for human use.

4 I can explain interconnections with data

Interconnection is the idea that two things or phenomena are related, interact or are linked in some way.

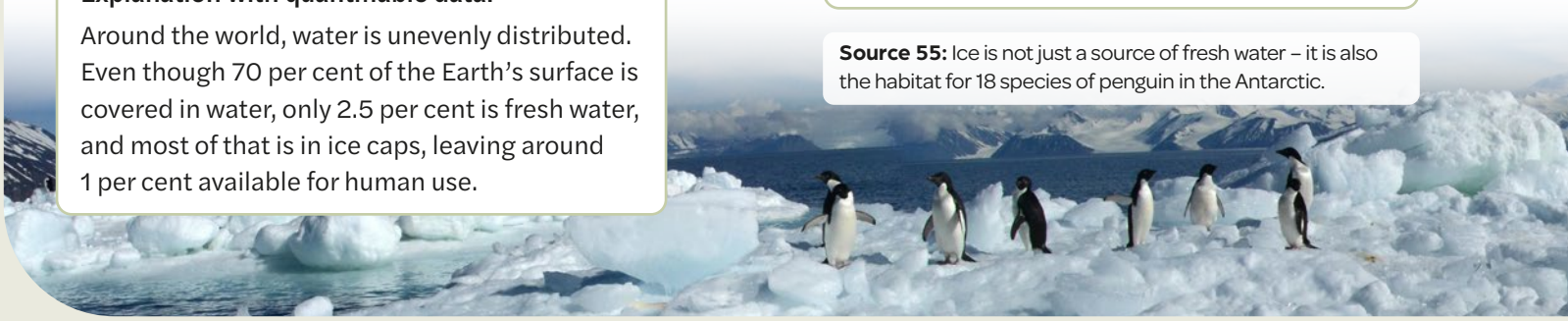
These are some steps when considering the interconnection between things.

1. **Identify key ideas:** Start by identifying the main ideas associated with the geographical issue or phenomenon you are studying, such as places, people, environments and processes.
2. **Describe relationships:** Explain how these ideas are related to each other. Consider how changes in one element can affect another, such as how climate impacts agriculture or how urban development influences local environments.
3. **Use examples:** Provide specific examples to illustrate these interconnections. This could include real-world scenarios, case studies or personal observations that highlight the relationships.

Example

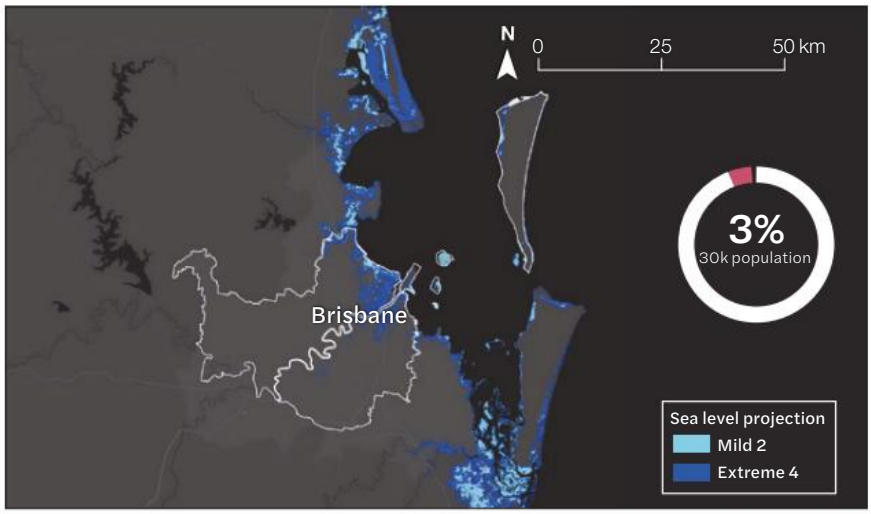
There is an interconnection between climate change, sea level rise and coastal flooding, which can be demonstrated in a paragraph like this.

Climate change has a strong interconnection with increased flooding events. As the Earth gets warmer, ice caps melt, causing water levels to rise along coastlines. This makes flooding more likely in coastal areas, especially during storms or heavy rain. For example, in Miami, Florida, United States, rising sea levels lead to regular flooding during high tides, which is called 'sunny day flooding'. This flooding affects homes, roads and local businesses.



Source 55: Ice is not just a source of fresh water – it is also the habitat for 18 species of penguin in the Antarctic.

Coastal flooding at 2100, Brisbane, Australia



Source 56: Sea-level rise is interconnected with flooding in low-lying, coastal regions. Sea-level rise is caused by melting ice caps as a result of warming oceans. The Queensland Government is predicting a sea level rise of 0.8 metres by 2100, which could lead to regular inundations during high tides.

Source: Earth.org

5 I can analyse the implications of phenomena

In geography, the 'implications of phenomena' refers to the effects that your inquiry might have on how people think, make decisions or conduct future research. When conducting an analysis, you need to identify the key findings and communicate their importance and any relationships or interconnections between them.

These are some questions to consider:

- How do your findings enhance or change understanding of a geographical issue or phenomenon? Did you find any new patterns, processes, perspectives or relationships?
- How could your findings affect decision-making processes?
- How might your findings impact local communities or environments? Consider the SHEEPT factors to broaden your analysis.
- How might your findings help provide ideas for further research or investigation? Has your inquiry found any gaps in your knowledge or new patterns that require more information?

Source 57: Climate change may impact Australian ecosystems as a result of changing precipitation patterns.

Example

In my geographical inquiry project, I investigated how climate change affects freshwater availability in remote Australian regions. My findings have some important implications that can enhance our understanding of this issue.

First, I discovered that climate change is leading to lower rainfall and higher evaporation in these areas. This change is causing a significant reduction in the amount of fresh water available for people and environments. This pattern highlights the relationship between climate change and freshwater resources, showing that as temperatures rise, the water supply diminishes.

My findings can influence decision-making processes. For instance, local governments may need to design water management strategies to ensure that communities have enough fresh water for drinking and agriculture. Understanding that climate change is a direct threat to water availability can prompt leaders to prioritise sustainable practices and invest in water-saving technologies. It is important for local governments to prepare for increased competition for water resources, which might heighten tensions between different groups, such as farmers and urban residents.

My inquiry revealed gaps in knowledge about how specific ecosystems are adapting to these changes. This suggests that further research is needed to explore the long-term impacts of lower fresh water availability on wildlife and vegetation in remote Australian regions.

How to develop a geographical inquiry

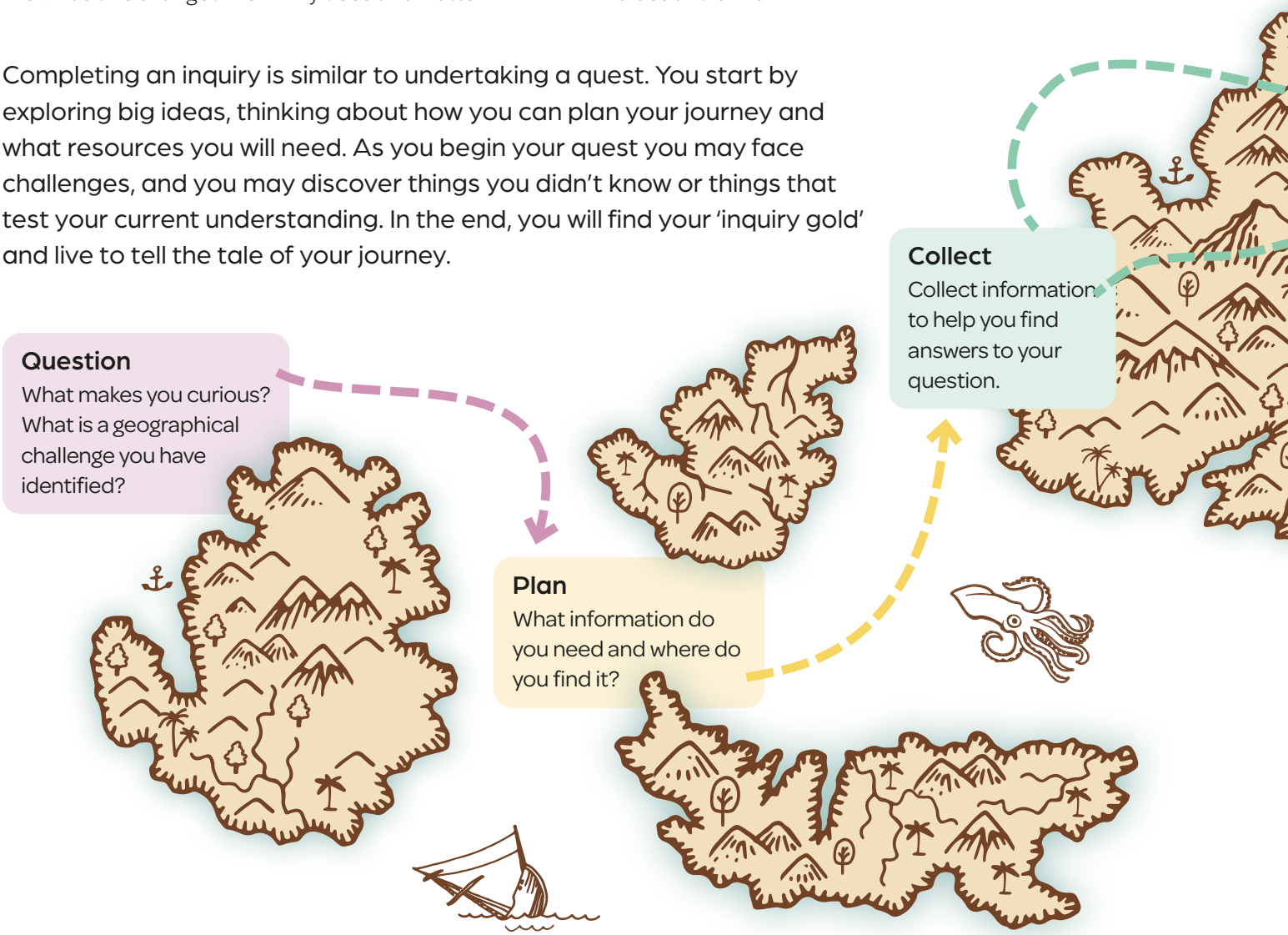
Geographical thinking enables us to make connections between new ideas and what we already know about the world. Think back to when you were little. As you discovered things around you, you may have asked adults questions such as, 'How does water in the river keep flowing?'. This questioning attitude is what is required for a geographical inquiry.

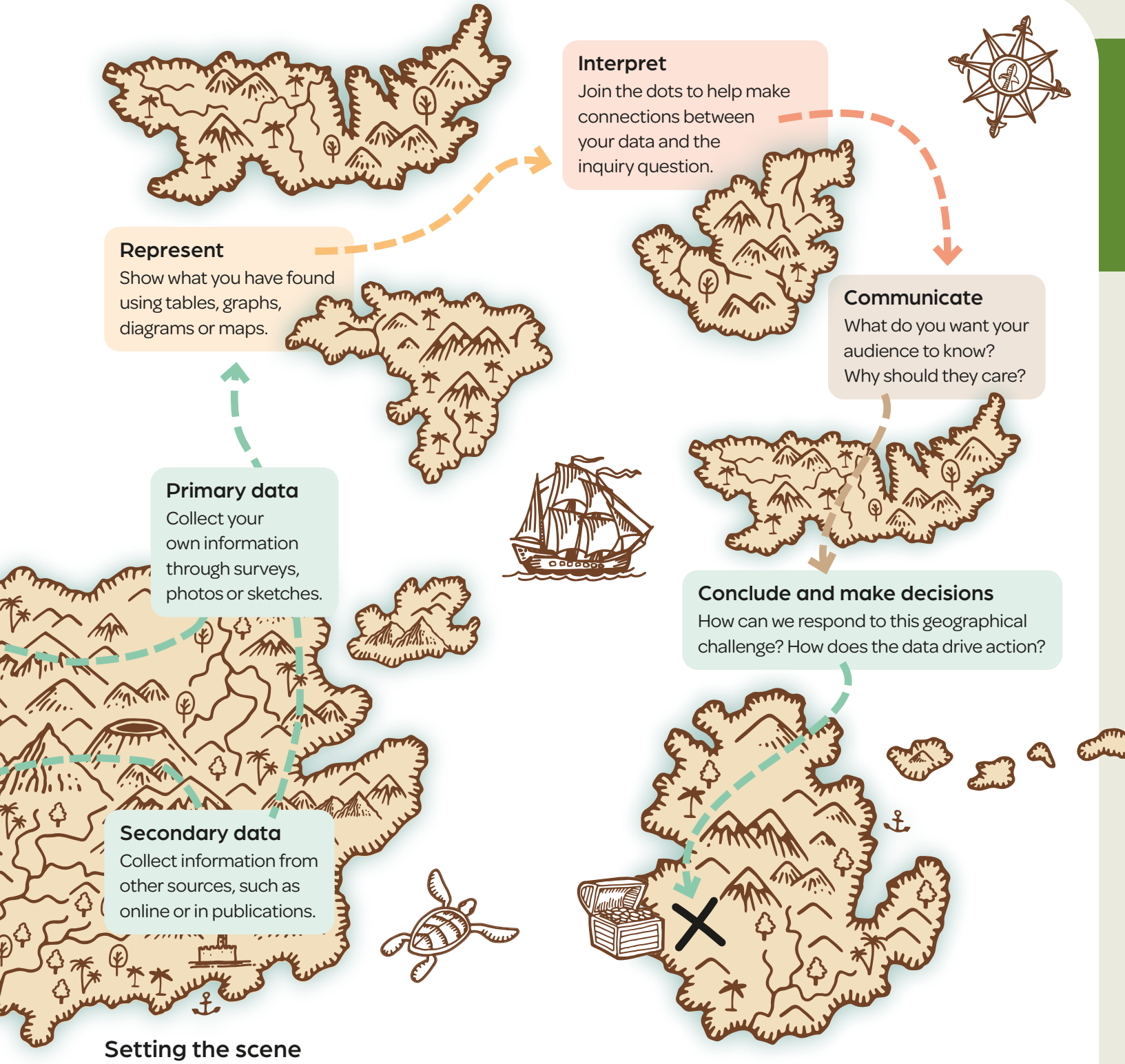
What is a geographical inquiry?

A **geographical inquiry** involves individuals or groups developing and investigating spatial questions. In an inquiry, you are not trying to find one correct answer. Instead, you are collecting information and exploring data to tell a story about an interesting topic. You may be considering questions such as, 'How did this form?', 'How does location influence characteristics?', 'How has this changed?' or 'Why does this matter?'.

Geographical inquiries range in scale. They do not have to be big investigations about distant places; they can be as small as exploring an aspect of your backyard. A geographical inquiry should be linked with topics about the world that make you curious. Each student in your class may form different conclusions based on their own thoughts, research, geographical understanding, values and skills.

Completing an inquiry is similar to undertaking a quest. You start by exploring big ideas, thinking about how you can plan your journey and what resources you will need. As you begin your quest you may face challenges, and you may discover things you didn't know or things that test your current understanding. In the end, you will find your 'inquiry gold' and live to tell the tale of your journey.





Setting the scene

Before you start thinking about what you will inquire about, you need to develop some background knowledge. The preceding five chapters provide theoretical understanding, case studies, concepts and skills that may spark curiosity or questions. The knowledge you build over each chapter provides you with an excellent basis to conduct an inquiry to extend your understanding and skills. At the end of each chapter, you are prompted to develop an open-ended inquiry question. Inquiry investigations do not have to be big, challenging projects; your question may simply build on a concept you have learnt about in the chapter or help you move up a step in the Learning ladder by applying your geographical skills.

The following pages explore the seven steps of geographical inquiry. Refer to this map and use the steps in this How-to chapter to support your various inquiry investigations. Don't forget: all your notes, answers to Learning ladder questions and classroom activities can help you build understanding and form primary and secondary data for your inquiry.

Throughout this book you will study water as a resource, water variability and management, hydrological and atmospheric hazards, liveability and enhancing liveability. The chapters provide you with detailed background knowledge on these topics. You can use the knowledge you gain from these chapters to deepen your geographical understanding and build an inquiry project. At the end of each chapter, you will be prompted to consider doing an inquiry investigation and be provided with examples of topic-related questions. You may wish to do one inquiry per topic or one per chapter. Remember: practice makes perfect!

The Geographical inquiry section of this How-to chapter (pages 410–42) will help you build your inquiry skills and provide you with instructions and examples for you to work at your level or challenge yourself by levelling up!

Step 1: Question

The first step in an inquiry is to develop curiosity and form a question to investigate. You will seek to find answers to this question throughout the inquiry.

Within each chapter of this book there are a variety of visual sources and data. These help you gain a better understanding of the topic. To help form an inquiry question, review the data presented in the chapters of this book and complete a 'See, think, wonder' to help build curiosity and think about ideas you may cover in your inquiry.

In an inquiry, questions can be **descriptive**, **procedural**, **comparative** or **evaluative**.

- **Descriptive questions** ask you to identify or describe an event or change over time.
- **Procedural questions** involve recalling facts, such as when something happened, creating timelines and telling the story of processes.
- **Comparative questions** require you to think deeper, using your geography knowledge to analyse and compare ideas.
- **Evaluative questions** ask you to present an evidence-based judgement or opinion by analysing, interpreting and assessing the value or impact of something.

Your inquiry question should be open-ended. Open-ended questions cannot be answered with a simple 'Yes' or 'No'. They often begin with words like 'How', 'Why' or 'What'. These questions make us think and we may need to conduct some further research in order to answer them fully.

Refer to the end of each chapter for topic-specific examples of open-ended questions.

Hint

When forming your question, consider: Where is it? Why is it there? Can I map it? Why is it important? Throughout your geographical inquiry you will collect and analyse information to tell a story that explores answers to this question.

Stretch

You may wish to hypothesise some of the possible answers to your inquiry question using your current understanding of the topic. A hypothesis is an educated guess. Your hypotheses may be found to be incorrect, but that all forms part of your learning in the inquiry process.

Make it spicy

We can use the seven geographical concepts to help us think geographically. They are often referred to as SPICESS: space, place, interconnection, change, environment, scale and sustainability. Review your inquiry question and check it is connected to relevant concepts; for example, environment and change.

HOW TO

- Planning and collecting

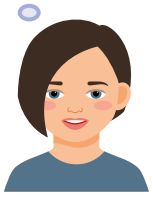
- Forming a question
- Example statements for inspiring questions

Step 2: Plan

In this step you plan your inquiry. Creating a summary table or mind map with your inquiry question at the centre will help you think about what information you will need to help you find answers to your question.

Questions to consider:

- What do you already know?
- What information do you need?
- Where can you find this information?
- What scale are you going to carry out your inquiry (e.g. for your local area or for your whole region)?



Information can be collected via **primary** or **secondary methodologies**. Secondary methodologies are ways that you can collect data back in the classroom to help you answer the question; for example, research using websites or books. Primary methodologies are what you do to collect your own data through fieldwork, such as surveys, field sketches or taking photographs.

Hint

If you are working in a group, consider how you might divide the research tasks.

Stretch

When you are listing the information you may need, consider what the causes, relationships and impacts might be. You may also want to consider what may happen in the future.

HOW TO

Planning and collecting

- Mind map template
- Plan stage template #1
- Plan stage template #2

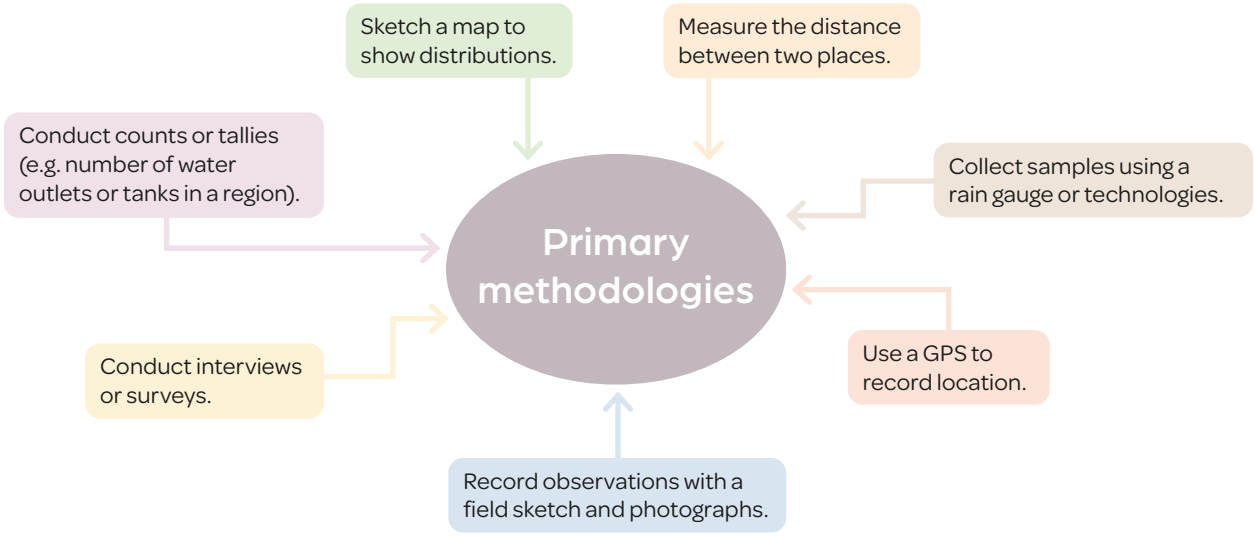
Step 3: Collect

Collecting information from secondary sources

Chapters 1–5 present geographical information for you to analyse by discussing water as a resource, water variability and management, hydrological and atmospheric hazards, liveability and enhancing liveability. You may take notes on what you read, create summary posters based on online research or answer Learning ladder questions based on the text. All of these are examples of ways you can record and interpret secondary data, and can be used as part of your inquiry, so make sure you put effort into everything you do!

Collecting primary data through fieldwork

Primary data forms an important part of inquiry. Geographical questions can't be answered without talking to other people or observing what is happening in the real world. In geography, primary research is conducted using **fieldwork**. Fieldwork can feel like a whole new project in itself, but it is important to remember that you are simply trying to collect more information to find answers to your inquiry question. There are a number of ways you can collect primary data through fieldwork. Brainstorm and record these to help you plan for and carry out your inquiry. You may only have one opportunity to go into the field and collect data, so you need to be organised and ensure you have all the information you need to answer your inquiry question.



Hint

Depending on the scale of your inquiry, fieldwork can be as simple as exploring your school or local community.

Stretch

There are a number of geospatial tools available to help collect data, such as ESRI Survey123 and Google MyMaps. Collecting information using geospatial technologies makes it easier to represent and interpret it later on.

HOW TO

- Planning and collecting

- Google My Maps: https://mea.digital/g5n

Step 4: Represent

Once you have gathered data from various sources, including fieldwork, just like in this book, information needs to be organised, collated and explained. In this step you will consider all the information you have collected and ask: how can I display the information I have gathered to answer my inquiry question?

Not all data you collect will be useful. You need to know which information is most relevant to answering your inquiry question. Some information may challenge what you thought you already knew about the topic.

Consider:

- Does this information help me answer my inquiry question?
- Does the information reflect your current understanding?
- What information helps provide multiple perspectives or ideas on the topic?
- Do I need to find more data?

It may be helpful to discuss with a partner the best way to present your information. You could use tables, line or bar graphs to help visualise quantitative (numerical) data. You could use diagrams, annotations on sketches, photographs or quotes from interviews to help present qualitative (descriptive) data.

Maps are the best way to visualise spatial relationships and patterns. For example, you may have collected data on geographical features of an area, population, land use or climate.

Hint

Don't forget to use SALTS and BOLTSS (NA) when constructing your graphs and maps!

HOW TO Representing information

Stretch

While hand-drawn maps are one way to present spatial data, they are not always accurate and it is difficult to show relationships between phenomena. Try using GIS, Google Earth Pro or Google My Maps to present your data instead.

Step 5: Interpret

All the information you have gathered and visualised in tables, graphs and maps then needs to be explained to help answer the inquiry question. Picture joining the dots between your question and all the things you have discovered, just like a detective at their evidence wall.

You now need to ask:

- What does the data mean?
- How can I explain what patterns I have found?
- How does this information help answer my inquiry question?
- Can I make any predictions?

It may help to create a mind map that shows the connections between the information collected and the inquiry question. Along each connection write a short paragraph explaining what the information shows and how it helps answer your inquiry question.

Hint

Don't forget to use PQE and SHEEPT to help structure your analysis!

Make it spicy

Use the SPICESS concepts of space, place, interconnection, change, environment, sustainability and scale to help structure your interpretation. For example, what patterns are interconnected? How is a pattern likely to change in the future? Can we improve sustainability? How can humans better manage the environment?

HOW TO Interpreting data

Mind map template

Step 6: Communicate

Communication is the most important step in the inquiry process. In this step you will tell a story using the information you collected. You will explain your interpretation of this information and show how it provides answers to your inquiry question formed in Step 1. You may wish to present your findings to the class, or by creating a book.

When planning your communication, consider the following questions:

- What do you want your audience to know about your inquiry topic?
- What information did you discover?
- What patterns did you find?
- Why is this information important?
- What tables, graphs or maps help support your understanding of the topic?
- Were there any interconnecting causes or impacts?
- Have you had to rethink what you thought you knew about the topic?
- What didn't you expect to discover?

Stretch

It is also important to communicate how your findings have real-world applications. For example, how should policies be changed? What future research needs to be completed? What further issues did your findings raise? These questions help your audience understand the broader implications of your inquiry.

HOW TO
Communicating

Step 7: Conclude and make decisions

Now it is time to answer your question. You can start by providing a brief summary of what you found and what it means. Then consider:

- What impact does your topic have on people and places?
- What evidence do you have to support the answers to your question?
- How reliable is the data you collected? Did you use blogs or social media?

Geographers do not just seek to discover and explore, but also to take action and make positive changes. You will also need to reflect on your inquiry and the story you have told about your findings. Consider the following questions and include them in your presentation:

- What strategies already exist to help improve current issues and challenges?
- How does this existing strategy help improve the issue?
- What impacts do existing strategies have on people and places?
- Should a new strategy or policy be created? What should this look like?

Stretch

When we consider taking action, it is important to remember that there are many different groups of people with varying values and perspectives. Reflect on your personal values and attitudes and how these influence the action you may recommend. For example, when implementing water sustainability measures, residents have concerns about water-use restrictions, business owners might complain about costs, and environmentalists may want stronger action.

HOW TO

- Making conclusions
- Strategies

Civics and citizenship

Government and democracy

CC1

HOW DOES GOVERNMENT WORK IN AUSTRALIA? 462

HOW ARE GOVERNMENT POWERS DIVIDED? 464

HOW DO IDEAS BECOME POLICY IN A DEMOCRACY? 470

CC1.0

How can I study government and democracy?

Develop an understanding of the principles and features of government in Australia and the roles of the key participants in democratic institutions, including the participation of citizens.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Elections and government	Values reflected by institutions and systems	Australian Constitution and government	Democratic participation
5	I can evaluate voting systems and election outcomes.	I can analyse how institutions apply democratic values when responding to issues.	I can assess the effectiveness of political institutions and political figures.	I can create a campaign for change by analysing a contemporary issue.
4	I can explain parliamentary power arrangements.	I can explain how government institutions respond to issues.	I can explain the interaction between the government and political figures.	I can explain influences on public opinion.
3	I can explain the structure of parliaments.	I can compare government responses to issues.	I can explain how governments operate.	I can explain democratic participation.
2	I can describe voting, political parties and independent politicians.	I can describe how the government responds to issues.	I can describe roles in a democracy.	I can describe how politicians represent people.
1	I can identify the electoral process.	I can identify key democratic values.	I can identify parts of the Constitution.	I can list how people participate in democracy.
Knowledge				

Source 1: Australia is a representative democracy, where citizens elect representatives through elections to make decisions on their behalf. Here, the 47th Parliament of Australia sits for the first time after winning the federal election in 2022.

	Investigating	Evaluating	Participating	Communicating ideas
5	I can evaluate information from a range of sources.	I can evaluate how institutions enhance democratic values and participation.	I can evaluate the strategies used to make decisions.	I can use sources to construct evidence-based arguments.
4	I can sort and represent data and information.	I can analyse the reliability of information.	I can design strategies to achieve outcomes.	I can explain different perspectives using data.
3	I can gather information from secondary sources.	I can write evidence-based conclusions.	I can discuss the impact of a strategy.	I can compare different methods of communication.
2	I can plan an investigation.	I can describe different interpretations.	I can describe a strategy to achieve outcomes.	I can reflect on my own and others' perspectives.
1	I can ask open-ended questions.	I can identify data relevant to a question.	I can identify outcomes.	I can describe civics and citizenship issues.

Steps in skills progression

Skills

CC1.1

How does government work in Australia?

Australia's system of government is divided into three separate branches, otherwise known as the separation of powers. This is established in the Australian Constitution, originally passed as a British Act of Parliament in 1900. It took effect on 1 January 1901.

The Constitution

The **Constitution** of Australia is the 'rulebook' that establishes the way Australia must be governed. It has special status compared to other laws as it cannot be changed except through a referendum, where a majority of Australian voters and a majority of states vote to approve the changes proposed by **parliament**.

To prevent one group having power over both the law-making and law-judging systems, the Constitution separates the powers of government into three branches:

- **executive**: the **prime minister** and senior ministers of the government and the **Governor–General** have the power to implement the law
- **legislature**: parliament has power to make laws
- **judiciary**: the courts have the power to interpret and apply the law.

The Constitution establishes the form of the Federal Government (that is, the Commonwealth, national or central government) and sets out the basis for relations between the Commonwealth and the states. It also establishes the parliament (in Chapter 1), the executive government (in Chapter 2) and the judicature (in Chapter 3).

The Parliament (legislative branch)

Chapter 1 of the Constitution covers the structures and powers of **Federal Parliament**, including the two houses of parliament.

The House of Representatives (Lower House)

The **House of Representatives** represents the people of each state in proportion to their numbers—that is, there are more members from the states with the largest populations.

After an election, the House of Representatives may last not more than three years, but can be ended (dissolved) sooner by the King's representative, the Governor-General (usually when asked to by the prime minister).

The house is made up of 150 members. Each member represents one of Australia's 150 electorates. There is approximately the same number of voters in each electorate. The Australian Government is formed in the house by the party, or coalition of parties, with the support of the majority of members in the House. The leader of the government is the prime minister.

The House of Representatives sits in a large, green room and the seats are arranged in rows to form a U-shape. In the House of Representatives:

- members, or MPs, represent the views of Australians and discuss matters of national and international importance
- national laws are made and changed by debating and voting on **bills** (proposed laws). A bill must be agreed to in identical form in the House of Representatives and the Senate, and given Royal Assent by the Governor-General. It then becomes a law. Most bills are initiated by the government to implement government policy
- the work of the government is closely examined, especially in Question Time and through committees.

Source 2: Prime Minister Anthony Albanese addresses the House of Representatives in 2023. The prime minister is the leader of the political party with the largest number of members elected to the House of Representatives. This party forms the government and the party with the second largest number of representatives forms the opposition.

In 2022 the Australian Labor Party formed government, represented by 78 members. A coalition of parties made up of the Liberal Party of Australia, the Nationals and the Country Liberal Party became the opposition with 56 seats in the House of Representatives. Minor parties and independent members took the other 17 seats, making up a total of 151 seats.

The Senate (Upper House)

Each state is represented equally and there must be at least six senators from each state. Elections for half the **Senate** take place every three years. Senators usually serve for six years.

The Senate sits in a large, red room and the seats are also arranged in rows to form a U-shape. The Senate's law-making powers are the same as those of the House of Representatives, except that it cannot introduce or amend proposed laws that authorise government expenditure or impose taxation. Once a bill is approved by the House of Representatives, it then moves to the Senate for further debate and discussion to ensure it is in the public interest. The Senate is often considered a 'house of review'.

Source 1: Senators debate proposed bills in the the U-shaped Australian Senate chamber.

Learning ladder CC1.1

Australian Constitution and government

1. Identify how the Constitution separates the powers of government.
2. Describe the roles of the following:
   - member of parliament
   - prime minister
   - Senate
   - judiciary
   - Governor-General.
3. Explain the purpose of the Australian Constitution. Is the separation of powers in the Australian Constitution important?
4. Explain the role of the Senate and how it could stop the government's bill from becoming law.
5. Assess the roles of Question Time and committees in analysing bills and the performance of governments. What purpose do they serve?

Investigating

1. What are some open-ended questions you could ask to explore how the Australian government operates?
2. How would you design an investigation to compare the functions of the three branches of government?
3. What secondary sources could be used to gather information about changes to the Australian Constitution?
4. How could you visually represent the separation of powers in Australia?
5. What factors should be considered when evaluating different sources of information about the Australian Government?

CC1.2

How are government powers divided?

The Constitution divides the power to make laws between the Federal Government and the state governments. State governments focus on providing essential services for their citizens, whereas issues that affect the entire nation are handled by the Federal Parliament.

Federal Government powers

Chapter 5 of the Constitution outlines the different responsibilities of Australia's different levels of government: federal, state and local. Each level of government has its own responsibilities, although sometimes these responsibilities are shared.

Exclusive powers of federal parliament are areas in which only the Federal Parliament can make laws. Outlined in Section 51 of the Constitution, these include trade and commerce, foreign policy, immigration, defence and marriage.

The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to:

(i) trade and commerce with other countries, and among the States;

(ii) taxation; but so as not to discriminate between States or parts of States;

(vi) the naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth;

(xii) currency, coinage, and legal tender;

(xxvii) immigration and emigration;

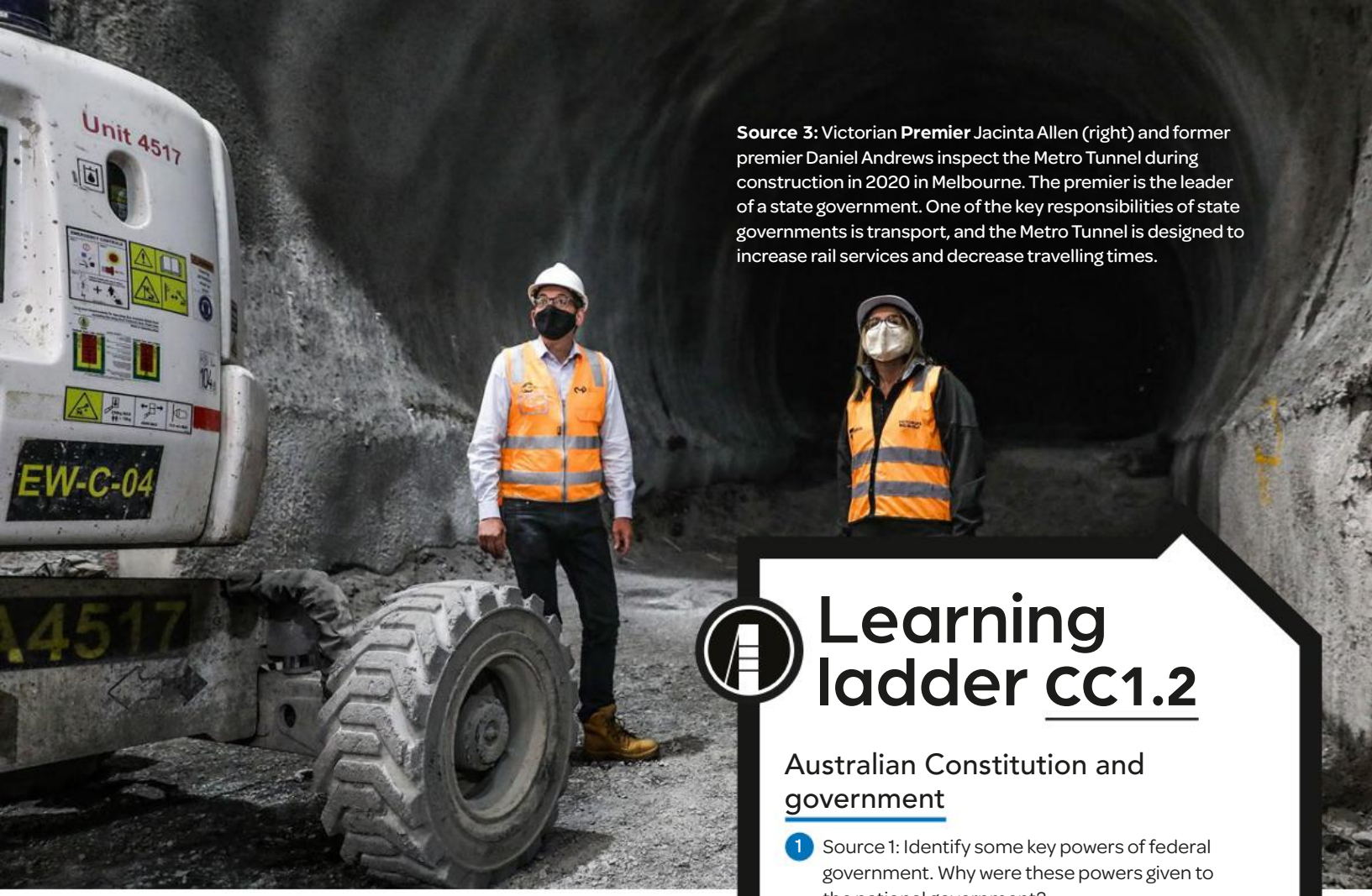
Source 1: Excerpts from Section 51 of the *Commonwealth of Australia Constitution Act 1900*

State government powers

Residual powers are most other law-making powers that the Constitution leaves to the states. State laws relate to matters that are primarily of state interest, such as education, transport, hospitals, electricity, police and ambulance services. **Concurrent powers** are shared by Federal Parliament and the state and territory parliaments. These powers include areas such as education, environment, overseas trade and taxation.

Councils or local government, of which there are more than 500 in Australia, create laws pertaining to parking, building approvals and inspections, and pet control.

Source 2: Australian Prime Minister Anthony Albanese (left), United States President Joe Biden (centre) and British Prime Minister Rishi Sunak (right) announce the details of the AUKUS nuclear submarine agreement in San Diego, United States, in 2023. The naval and military defence of Australia is the responsibility of Federal Parliament.



Source 3: Victorian **Premier** Jacinta Allen (right) and former premier Daniel Andrews inspect the Metro Tunnel during construction in 2020 in Melbourne. The premier is the leader of a state government. One of the key responsibilities of state governments is transport, and the Metro Tunnel is designed to increase rail services and decrease travelling times.

Learning ladder CC1.2

Australian Constitution and government

1. Source 1: Identify some key powers of federal government. Why were these powers given to the national government?
2. Source 2: Describe what is happening in this scene and how the Australian prime minister is using the exclusive powers of the federal parliament.
3. Source 3: Explain the role the premier of a state plays and why they are involved in this project.
4. Explain why state governments were important in controlling the COVID-19 pandemic in Australia.
5. Assess the effectiveness of each level of government in dealing with a recent issue.

Investigating

1. What are the key differences between the powers of the federal government and state governments?
2. To investigate the division of government powers in Australia, what steps would you take to gather information on how federal, state and local governments interact?
3. Where could you look for secondary sources that explain the concept of concurrent powers between federal and state governments?
4. How would you categorise exclusive, residual and concurrent powers in a table to compare their responsibilities at the federal, state and local levels?
5. How might you evaluate the reliability of a website that discusses the distribution of powers in Australia's government?

How do elections operate?

Federal elections in Australia are held every three years to elect members to the parliament. Australia has a system of compulsory voting, where all Australian citizens aged 18 and over must vote in federal and state elections.

Elections in Australia

In Australia, federal elections are held to elect members to the Parliament of Australia, which consists of the House of Representatives and the Senate. Elections are typically held every three years, with the prime minister advising the Governor-General of the election date.

State and territory elections are held to elect members to the legislatures of each state and territory. Like federal elections, state and territory elections also consist of two houses (except in Queensland). State and territory elections are typically held every four years.

Voting for the House of Representatives

The House of Representatives is made up of members elected from single-member **electorates**, using a preferential voting system. In this system, voters rank all candidates in order of preference on the green **ballot paper** (Source 2).

To determine the winner, the first preference votes are counted. If a candidate receives an outright majority (more than 50 per cent) of first preference votes, they are elected. If no candidate receives a majority, the candidate with the fewest votes is eliminated, and their votes are redistributed to the remaining candidates based on the next preference on each ballot. This process continues until one candidate has a majority of votes and is declared the winner.

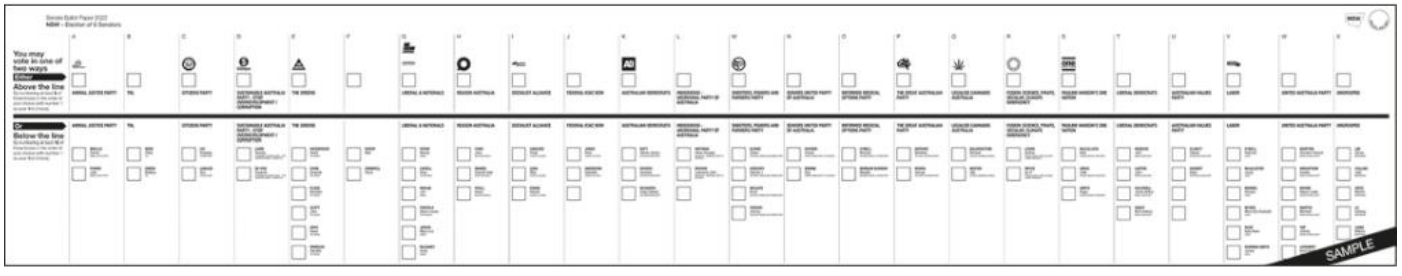
▲ **Source 2:** House of Representatives ballot paper

Source 1: Voters in Bondi at a polling station on election day

Voting for the Senate

The Senate is made up of senators elected from multi-member electorates of states and territories, using a **proportional representation** voting system. Proportional representation is a voting system used in elections to ensure that the distribution of seats in a legislative body reflects the proportion of votes received by each political party or group. As in the House of Representatives, voters rank candidates in order of preference on the white ballot paper (Source 3).

Each state in Australia is allocated 12 Senate seats, regardless of its population size. They are elected for a term of six years. The Australian Capital Territory (ACT) and the Northern Territory (NT) each receive two Senate seats, elected for a three-year term. This allocation is enshrined in the Australian Constitution and is designed to provide each state and territory with equal representation in the Senate, regardless of population differences.



▲ **Source 3:** Senate ballot paper

Source 4: Seats won by each party in the House of Representatives and Senate at the 2022 federal election [DPS AUSPIC/Parliamentary Education Office (http://peo.gov.au/)]

47th Parliament of Australia

Following the federal election held on 21 May 2022, the Australian Labor Party (ALP) formed government after winning the support of the majority (more than half) of the 151 members elected to the House of Representatives. This was the 47th time parliament had formed since Federation and is therefore referred to as Australia's 47th Parliament.

The Federal Parliament of Australia generally has several political parties and independent members. The two major parties are the Liberal Party of Australia and the Australian Labor Party (ALP). The ALP holds the majority of seats in the House of Representatives, giving it the **parliamentary majority**. This means it can pass legislation and control the government.

The Liberal Party, along with its coalition partner, the National Party, forms the **opposition** as it has the second-largest number of seats in the House of Representatives. The opposition's role is to scrutinise the government's actions, propose alternative policies and hold the government accountable.

The **balance of power** is held by minor parties and independents who do not align with either major party. They can influence the passage of legislation by siding with either the government or the opposition on particular issues. For example, in the parliament in 2024, the Australian Greens and crossbenchers like Centre Alliance and One Nation hold the balance of power in the Senate, where the government does not have a majority. This means they can negotiate with the government to amend or block legislation, or work with the opposition to pass bills that the government opposes.

Learning ladder CC1.3

Elections and government

1. Identify how often federal and state elections take place.
2. Source 2: Describe how to cast a valid vote for the House of Representatives.
3. Source 3: Explain how the proportional representation system works to select senators.
4. Source 4: Explain how the ALP achieved a parliamentary majority in 2022 but the balance of power in the Senate is held by minor parties and independents.
5. Evaluate preferential and proportional representation voting systems. Which system gives the fairest outcome and why?

Evaluating

1. What data from the 2022 federal election results would help you analyse the effectiveness of the ALP's election win?
2. How might the role of the opposition be interpreted differently by parties depending on whether they are in government or in opposition?
3. How would you conclude the impact of proportional representation on the diversity of political parties in the Senate?
4. How would you assess the reliability of a historical text discussing the evolution of the Senate's role in Australia's government?
5. How do the practices of compulsory voting and proportional representation contribute to strengthening democracy in Australia?

CC1.4

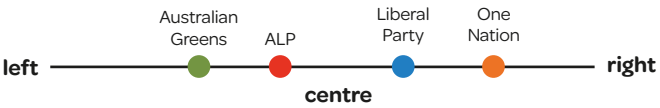
What is the role of political parties?

Political parties in Australia represent various population segments, advocating for their interests and viewpoints, and form the government by winning the majority of seats in the House of Representatives. They develop policies based on their ideologies, ensuring political stability, accountability and responsiveness to public needs.

Political parties

Political parties in Australia represent different population segments and advocate for their interests and viewpoints. In federal parliament parties form the government by winning the majority of seats in an election in the House of Representatives, with the party leader becoming the prime minister.

Parties develop and promote **policies** based on their ideologies and are often described as being either **left–wing**, **right–wing** or centre. Left-wing parties support equality for all and provide services such as health and education. Right-wing parties support the idea of individual ownership and that each person rises or falls on their own merit.



Source 1: Ideologies of Australia's major political parties

If elected, parties guide government actions and ensure political stability and accountability by organising activities and holding the ruling party accountable through opposition. Parties recruit and train future leaders, conduct electoral campaigns and implement policies when in government. They also facilitate political participation and link citizens to the government, ensuring responsiveness to public needs.

The two major political parties in Australia are the Liberal Party and the ALP. The Liberal Party, a centre-right political party, advocates for free-market economic policies, individual freedoms and limited government intervention, often forming coalitions with the National Party. In contrast, the ALP, a centre-left party, supports social justice, workers' rights and government intervention to ensure equitable distribution of wealth and access to essential services. These parties dominate the political landscape and have historically alternated in forming the government.

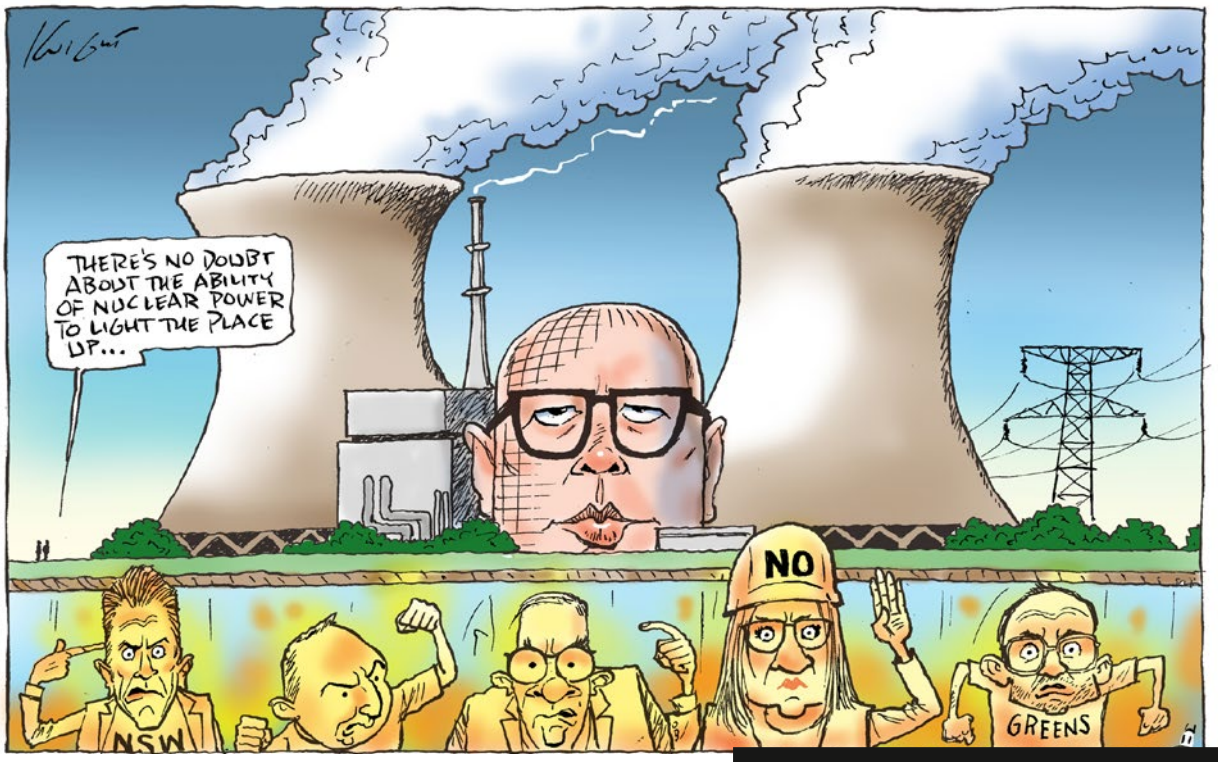
The role of independents

An **independent** in politics is a candidate or elected official who does not belong to any political party. Independents often run for office to represent specific local interests or particular issues without being constrained by party policies or agendas.

Independents in Australia play a significant role by providing alternative choices to the major parties, often focusing on specific local or national issues. Their success underscores the increasing influence of independents in shaping the political agenda and holding the major parties accountable.

After the 2022 federal election, independents and small parties held the balance of power in the Senate, where the government required their support to pass laws. Labor had just 26 seats in the Senate and it required 39 to automatically pass legislation. It relied on the support of the Australian Greens (11 seats) and at least two of the four independent candidates.

Source 2: David Pocock is a former Australian rugby captain who became the first independent senator for the ACT in 2022.



Source 3: Political cartoon showing the reaction to the announcement of the Liberal Party's nuclear energy policy in 2024 from left-wing parties. The face on the nuclear power plant is Peter Dutton, the leader of the Liberal Party.

Responding to issues

The political differences between major and minor political parties and independents ultimately shape the way they interpret and respond to issues facing the country. This has been particularly evident in attempts to respond to climate change.

The Liberal Party supports the development of nuclear power as part of the country's energy mix. The party views nuclear energy as a low-carbon option that could help Australia meet its energy needs while reducing greenhouse gas emissions.

The Australian Greens are strongly opposed to nuclear power, advocating instead for a complete shift to renewable energy sources such as wind, solar and hydro, citing the risks and high costs associated with nuclear energy.

The ALP is also against nuclear power due to safety and waste management concerns. The ALP formed government in 2022 and began to put in place actions to achieve a target of 50 per cent renewable energy in Australia's electricity mix by 2030. This policy, announced when it was in opposition in 2015, aims to drive the rapid growth of renewable energy generation capacity, particularly through large-scale solar and wind projects.

Learning ladder CC1.4

Elections and government

1. Identify how federal government is formed in the Australian Parliament.
2. Describe the role of political parties.
3. Explain the differences between Australia's two major political parties using the terms 'left-wing' and 'right-wing'.
4. Explain how an independent candidate can have an even greater influence in government when they hold the balance of power.
5. Research the terms '**hung parliament**' and '**minority government**' to evaluate how minority governments can form.

Evaluating

1. What data would be relevant to analyse how the ALP's policies on renewable energy compare to those of the Liberal Party?
2. How might the political beliefs of left-wing and right-wing parties shape their approach to different problems the country faces?
3. How would you describe the importance of the ALP's policy on renewable energy in the 2022 federal election?
4. How do the roles of political parties and independents enhance the democratic process in Australia?

How do ideas become policy in a democracy?

Members of parliament and the government of the day must take into consideration a wide range of factors when creating government policy. Ultimately, it is up to the prime minister and their ministers to set the policy direction for the country while taking into account many different factors based on Australia's democratic values.

Democratic values and institutions

Democracy is a system of government led by the people. Australia is a **representative democracy**, where citizens elect representatives through elections to make decisions on their behalf. **Democratic institutions** such as the Federal Parliament, state parliaments, courts and the public service work to further democratic values by:

- protecting freedom of speech and belief
- treating everyone fairly and equally
- tolerating differences and opposing ideas
- providing institutions that are responsive and accountable to citizens.

Ideas for new laws can come from government departments, **lobby groups** working on behalf of a particular cause, and public opinion highlighted by the media.

The executive and the public service

The executive branch of government includes the prime minister (the leader of the government) and **Cabinet** (key leaders chosen from the government's members of parliament in the House of Representatives and the Senate). The executive plays a central role in forming government policies — that is, proposals set out by political parties to take action or make laws. The executive is responsible for developing, implementing and overseeing government policies and programs. It does this by setting the government's agenda, making decisions on policy direction and coordinating the work of government departments and agencies.

The **public service** also plays a crucial role in forming government policy. Public servants working in specialist government departments provide expert advice and support to the executive, helping to develop and implement policies based on evidence, research and analysis. The public service also plays a key role in advising the government on the feasibility and implications of policy options, as well as ensuring that policies are implemented effectively and efficiently.

Source 1: Treasurer Jim Chalmers, Minister for Foreign Affairs Penny Wong, Prime Minister Anthony Albanese, Deputy Prime Minister and Minister for Defence Richard Marles and Minister for Finance Katy Gallagher are key members of the executive.

Public opinion

Public opinion can significantly influence policy formation by providing feedback on the preferences and concerns of the electorate. It can create pressure on policymakers to address specific issues or adopt certain policies, as they seek to maintain public trust and support. Public opinion also shapes the political agenda, influencing which issues receive attention from policymakers.

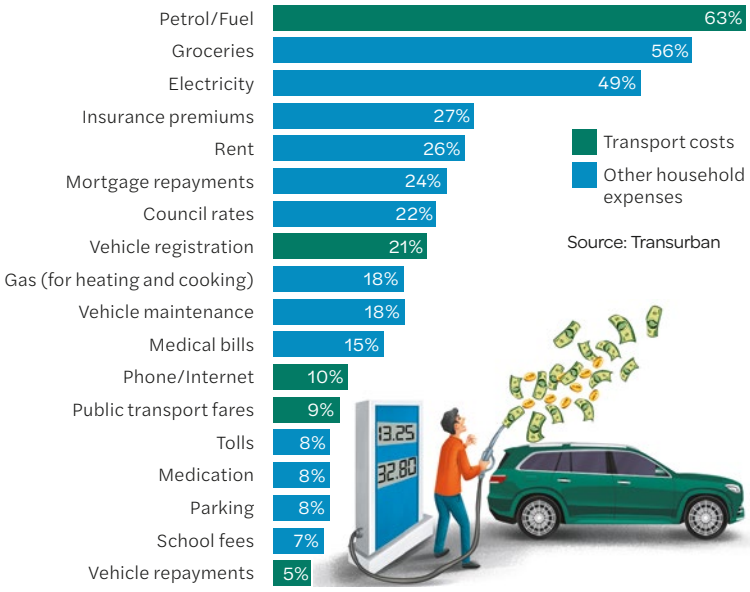
The 2024 Australian Federal Budget

One example from Australian politics where public opinion played a significant role in the formation of government policy was the 2024 Australian Federal Budget. The budget, presented by **Treasurer** Jim Chalmers and Prime Minister Anthony Albanese, focused on addressing immediate cost-of-living concerns. Budget measures included:

- tax cuts for all of Australia's 13.6 million taxpayers
- an energy bill rebate of $300 for all households and $325 for eligible businesses
- changing the Medicare levy threshold to ensure that more than 1 million low-income taxpayers are exempt from paying a Medicare levy
- increasing rent assistance
- ensuring cheaper medicines by freezing the prices of medications.

Government policy and the budget followed many public opinion polls that found most Australians were primarily concerned about cost-of-living pressures. In May 2024, market research company Ipsos reported that for the 27th month in a row, cost-of-living pressure remained the main concern for Australians, with 65 per cent of survey respondents listing it as their biggest concern.

Petrol is the top cost of living concern



Source 2: Research released from Transurban in 2022, based on a survey of thousands of Australians, which investigated their concerns around common household expenses. Public opinion about these cost-of-living items has significantly impacted the policies of the executive branch of the Australian Government.

Learning ladder CC1.5

Values reflected by institutions and systems

1. Identify three democratic values.
2. Source 1: Describe the role of the executive in forming government policies to respond to contemporary issues.
3. Describe the role of the public service.
4. Source 2: Explain how the executive responded to public opinion on the issue of cost-of-living concerns in the 2024 Federal Budget.
5. Which democratic values are most important when trying to provide relief from cost-of living pressures? Analyse one policy that could be put forward to help ease the cost of living.

Participating

1. How did the 2024 Federal Budget aim to address public concerns?
2. What strategy might the government use to maintain public trust?
3. How might the introduction of a $300 energy bill rebate impact Australian households, and what might this reveal about government priorities?
4. If you were designing a government policy to address the rising cost of living, what would you include to ease cost of living concerns?
5. How effective was the strategy used by the Australian government in the 2024 Federal Budget to prioritise public opinion on cost-of-living pressures?

How do democratic institutions deal with issues?

Democratic institutions in Australia, such as federal and state parliaments, the judiciary and the media, play crucial roles in interpreting and dealing with contemporary issues.

The role of democratic institutions

Parliament: Parliament debates and passes laws in response to contemporary issues. Members of parliament (MPs) represent the views of voters and propose laws to address emerging challenges. **Parliamentary committees** conduct inquiries and investigations into specific issues, providing recommendations for action.

Judiciary: The judiciary (courts) interpret laws and ensure they are applied fairly and consistently. Courts consider legal challenges related to contemporary issues, ensuring government actions comply with the Constitution and laws. Judicial decisions can set **legal precedents** that shape future policy and practice.

Media: The media plays a vital role in informing the public and shaping public opinion on contemporary issues. The media exposes wrongdoing and holds the government to account. It also provides a platform for debate and discussion, influencing public discussion and the policies of governments and political parties.

Democratic institutions in Australia work together, and sometimes against each other, to interpret and address contemporary issues, ensuring that government actions are transparent, accountable and responsive to the needs of the people.

The media and the NDIS

The Australian media has played a crucial role in shaping discussions around the National Disability Insurance Scheme (NDIS), which provides funding for support and services for Australians with severe disabilities. The media has covered the NDIS rollout, highlighting issues related to access, planning, funding and service delivery, and holding the government and the National Disability Insurance Agency (NDIA) accountable. Investigative journalism has exposed flaws in the NDIS, leading to reforms such as addressing fraud and improving decision-making consistency (Source 1).

Parliamentary inquiry into homelessness

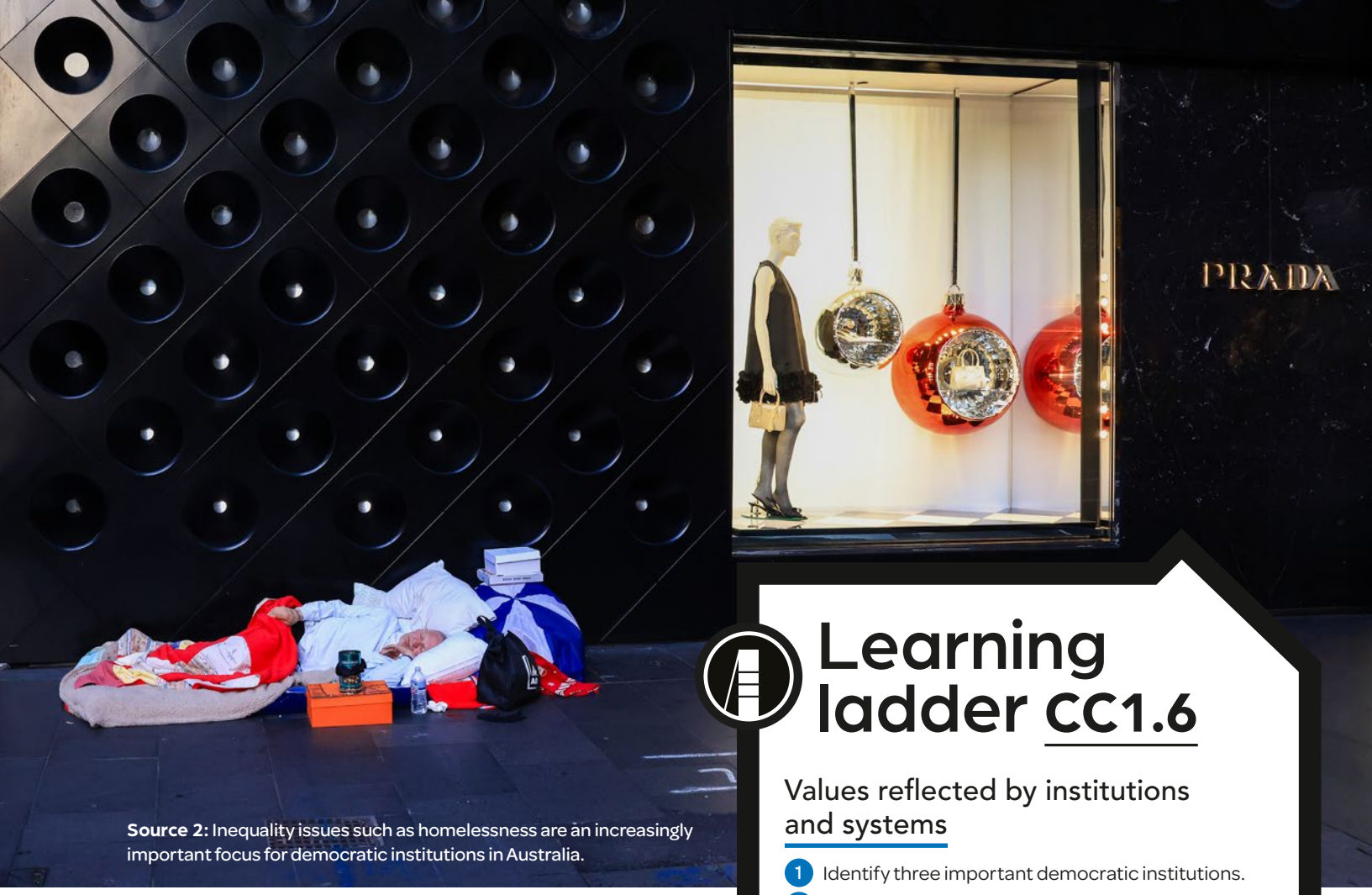
The Victorian Parliament regularly conducts **parliamentary inquiries** to look carefully at specific issues to help make better legislative decisions. These inquiries allow for thorough examinations of complex matters, involving the public in the policy process and providing evidence-based insights for lawmakers. By understanding complex issues such as homelessness, Parliament can make informed decisions that benefit the community and promote transparency, citizen engagement and informed decision-making.

Disability provider accused of billing $1 million in fraudulent NDIS claims in a month

A shonky disability provider has been caught allegedly billing taxpayers for $1 million in fraudulent NDIS claims in a single month. The person, believed to be linked to a broader criminal network, is accused of using coercive tactics to facilitate the claims through legitimate National Disability Insurance Scheme (NDIS) participants.

In recent weeks, NDIS investigators discovered the provider had allegedly used 50 separate ABNs to charge for fake services. The NDIS Quality and Safeguards Commission has already taken 128 fraud-related compliance actions against providers and individuals, including the issuing of 61 banning orders, 20 suspensions of registration and 21 revocations of registration.

Source 1: Excerpts from Channel 9 News, 9 March 2024 by Eliza Edwards



Source 2: Inequality issues such as homelessness are an increasingly important focus for democratic institutions in Australia.

One such inquiry initiated by the Legal and Social Issues Standing Committee of the Victorian Parliament focused on homelessness in Victoria. Conducted from August 2019 to September 2020, the inquiry included 18 public hearings and more than 450 submissions examining the changing scale and nature of homelessness in the state. It delved into social, economic and policy factors impacting homelessness and sought to identify policies and practices to improve services. This inquiry played a vital role in shedding light on homelessness issues, holding policymakers accountable, and promoting transparency and informed decision-making in addressing homelessness in Victoria.

Some key recommendations from the inquiry were:

- **early intervention:** address underlying issues (mental health, substance abuse, family breakdowns) before they escalate
- **youth homelessness:** develop targeted programs to address youth homelessness specifically
- **cultural competence and diversity:** ensure services respect the values, attitudes and beliefs of different cultures in the community.

Learning ladder CC1.6

Values reflected by institutions and systems

1. Identify three important democratic institutions.
2. Describe the role played by the media in informing and shaping public opinion associated with contemporary issues.
3. Explain how the judiciary can help ensure fairness.
4. Source 1: Explain how the media and the NDIS Quality and Safeguards Commission are dealing with criminal activity related to the NDIS.
5. Source 2: Analyse how this photograph shows the democratic value of equality related to homelessness.

Communicating ideas

1. How does the role of the media in exposing issues within the NDIS relate to civics and citizenship?
2. How might people directly impacted by homelessness view the recommendations from the Victorian Parliament inquiry?
3. How do the communication methods of the media compare to the formal reports generated by parliamentary inquiries in terms of their impact on public awareness?
4. Using data from the Victorian Parliament inquiry into homelessness, explain how social, economic and policy factors interact to influence homelessness.
5. Construct an argument for or against the idea that government agencies like the NDIS should take stronger actions against fraudulent claims.

How can we participate in Australia's democracy?

In Australia, we take many freedoms for granted. These include freedom of expression, freedom to associate and freedom of religion. Some freedoms are explicitly guaranteed through our Constitution and legal system. Others are not explicitly guaranteed but are generally thought to be a part of life in Australia.

Freedoms

The Australian Constitution does not explicitly protect freedom of expression; however, the **High Court** has held that an implied freedom of political communication (speech) 'exists as a ... part of the system of representative and responsible government'.

Australians are generally free to associate with whomever they like. The right to freedom of association protects the right of all persons to group together voluntarily for a common goal and to form and join an association. Examples are political parties, professional or sporting clubs, non-governmental organisations and trade unions. Similarly, Australians may also meet for a common purpose to express their views publicly and to hold a peaceful protest; however, numerous laws effectively restrict freedom of assembly and association in Australia.

Section 116 of the Constitution outlines that the government cannot make any particular religion the only religion Australians must follow, nor can it prohibit the free practice of any religion, effectively protecting religious freedom to some extent.

Different forms of participation

Voting

Australia is a representative democracy. All citizens aged 18 years and over have the right and responsibility to participate in Australia's democracy by enrolling to vote and voting for people to represent them in parliament.

When you vote at a federal election, you vote for a representative to represent your electorate in the House of Representatives and you vote for representatives to represent you in the Senate. This is similar at a state level where you vote for representatives in both the lower and upper houses (except in Queensland, which only has one house).

The Australian Electoral Commission (AEC) oversees elections at a national level. It coordinates electoral events, including federal elections, by-elections and referendums, and industrial and commercial elections. It also oversees political party registrations. The Victorian Electoral Commission (VEC) and similar commissions in other states oversee these functions at a state level.

Opinion polls for the 2023 Voice Referendum (% of population who support 'Yes' in the referendum)

Pollster	End date	NSW	VIC	QLD	SA	WA	TAS
Resolve	8 Oct 2023	48	46	36	44	39	56
Essential	1 Oct 2023	42	45	40			
Roy Morgan	24 Sep 2023	40	46	31	36	30	56

▲ **Source 1:** A summary of some political polls conducted in the lead-up to the 2023 Voice Referendum. A political poll, or opinion poll, is a survey in which people are asked about particular issues. Often, polling results are used to predict the outcomes of elections or to gain a sense of the issues that voters care about.

Contacting an elected representative

You can contact your local member of parliament at any time regarding an issue that concerns you. Your local member might write back to you or even mention your correspondence in parliament.

Lobby groups

Lobby groups seek to communicate with government representatives in an effort to influence federal government decision-making. For example, the Property Council of Australia is an example of a lobby group that represents Australia's largest residential and commercial property developers.

Source 2: Prime Minister Gough Whitlam (left) and Attorney-General Kep Enderby (centre back) meet with organisers of the Aboriginal Tent Embassy outside Parliament House in early 1972. News Ltd/Newspix

Interest groups

Interest groups are groups of people with common goals who organise to influence the government. For example, the Victorian Forest Alliance campaigned to halt native forest logging in Victoria. The Victorian Labor Government then agreed to stop all native forest logging in Victoria after years of campaigning and awareness raised by the alliance and similar groups.

Direct action

Direct action can be separated into two categories: civil resistance and civil disobedience. Civil resistance involves marches, demonstrations, boycotts, petitions and picketing. Civil disobedience might include acts such as street sit-ins, breaking of protest permits and mass mobilisation.

The Aboriginal Tent Embassy is an example of direct action. The establishment of the Aboriginal Tent Embassy in 1972 resulted from the Australian Parliament's reluctance to grant First Nations Peoples rights to land, or protection of their cultures.

Learning ladder CC1.7

Democratic participation

1. List the different ways that citizens can participate in Australia's democracy.
2. Describe how elected representatives work on behalf of citizens.
3. Explain how citizens can actively participate in Australia's democracy.
4. Source 2: What type of group was the Aboriginal Tent Embassy? Explain what it was trying to achieve.
5. Create a lobby group in your classroom to lobby your school about an issue you would like to see addressed. Outline some persuasive reasons as to why this issue should be addressed and how it can be resolved.

Participating

1. What are the likely outcomes of a direct action campaign in influencing public opinion and policy?
2. What strategy might a lobbying group use to ensure their concerns are addressed by government representatives?
3. How might contacting a local member of parliament about an issue, such as climate change, influence the policymaking process?
4. If you were designing a strategy to increase voter turnout in Australia's elections, what steps would you include to encourage greater participation?
5. How effective are the strategies used by civil resistance movements in Australia, such as marches and boycotts, in influencing government policies and public opinion?

How do I conduct an investigation?

Now that you've finished the chapter, it is time to conduct your own investigation on government and democracy. Throughout the chapter you have developed knowledge and understanding of government and democracy. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own investigation into contemporary issues!

An investigation gives you the opportunity to be an active participant in contemporary civics and citizenship issues: investigating, evaluating and communicating your findings.

The chapter has covered the principles and features of government in Australia and the roles of the key participants in democratic institutions. What would you like to know more about?

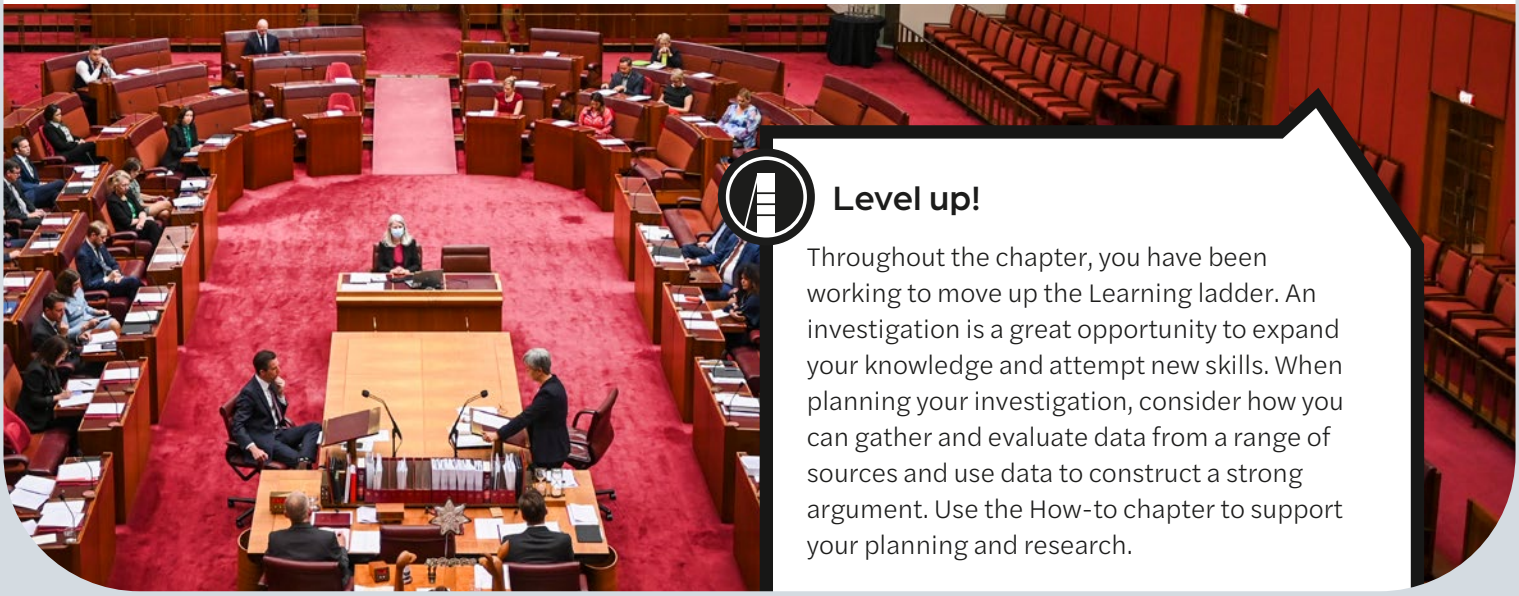
- How government works in Australia, page 462
- How elections operate, page 466
- The role of political parties, page 468
- How ideas become policy, page 470
- Participation in Australia's democracy, page 474

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas. Once you have worked through this process, you are ready to start your investigation.

Refer to pages 496–8 of the How-to chapter for a step-by-step guide to this process.

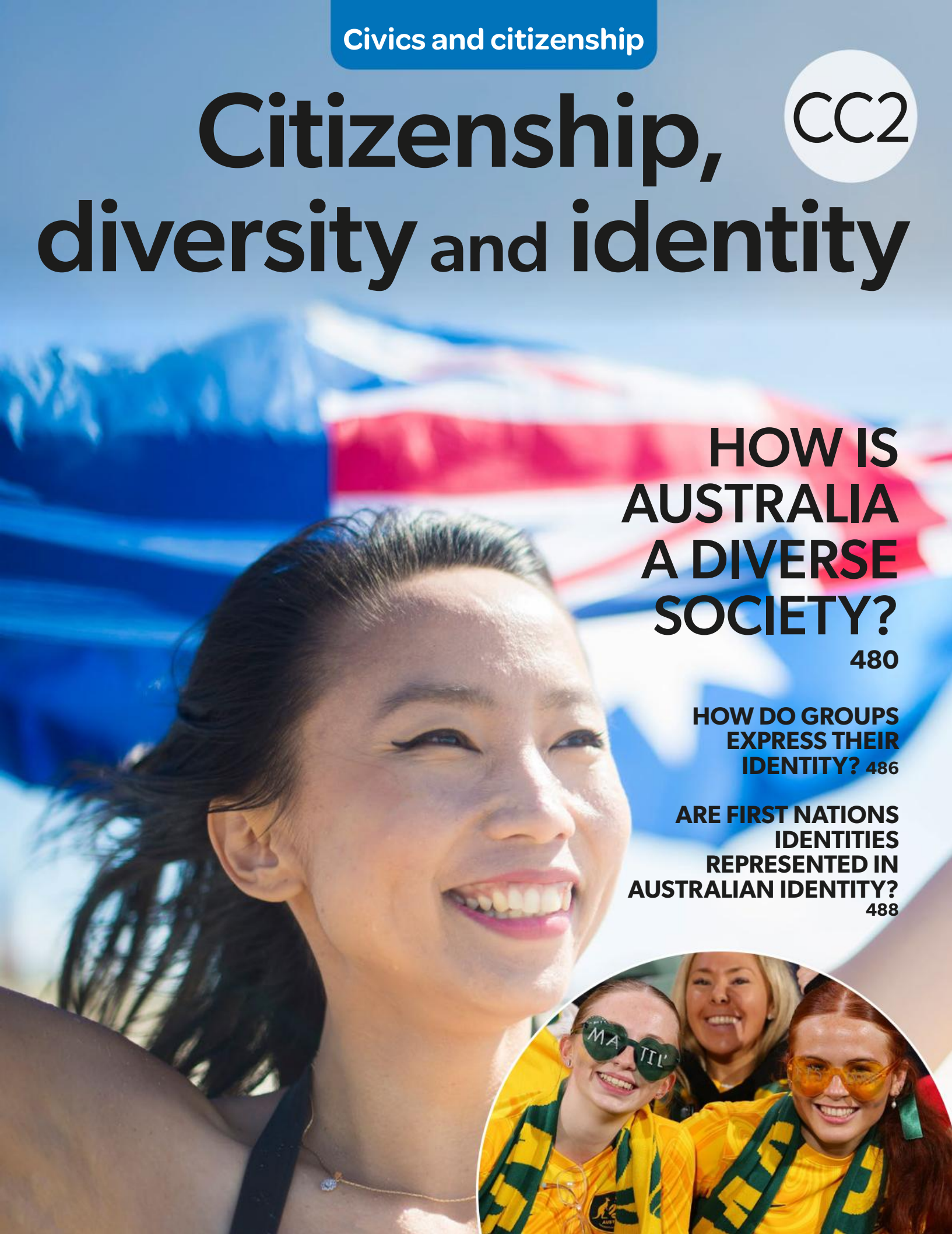


Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An investigation is a great opportunity to expand your knowledge and attempt new skills. When planning your investigation, consider how you can gather and evaluate data from a range of sources and use data to construct a strong argument. Use the How-to chapter to support your planning and research.

Citizenship, diversity and identity

CC2



HOW IS AUSTRALIA A DIVERSE SOCIETY? 480

HOW DO GROUPS EXPRESS THEIR IDENTITY? 486

ARE FIRST NATIONS IDENTITIES REPRESENTED IN AUSTRALIAN IDENTITY? 488

CC2.0

How can I study citizenship, diversity and identity?

An examination of the influence of democratic values on society helps us understand how Australia has developed as a proud multicultural nation with acceptance of a wide range of cultures and beliefs. You will investigate how our diverse population expresses identity and the important values that support cohesion in Australian society.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Diversity	Values	Identity	National identity and citizenship
5	I can analyse changes to Australian society.	I can analyse the relationship between social cohesion and democracy.	I can analyse how symbolism and ritual build a sense of inclusion.	I can evaluate debates about national identity.
4	I can explain threats to multiculturalism.	I can explain different perspectives on values.	I can explain perceptions of expressions of cultural identity.	I can explain different points of view of national identity.
3	I can explain changes to Australian society.	I can explain the importance of upholding shared values.	I can explain how people express identity.	I can explain the impact of events on national identity.
2	I can describe Australian social diversity.	I can describe the importance of citizenship.	I can describe shared values.	I can describe how national identity has changed over time.
1	I can use diversity vocabulary.	I can identify Australian values.	I can recognise expressions of identity.	I can provide examples of national identity.
Knowledge				

Source 1: Citizenship ceremony – where migrants become Australian citizens

	Investigating	Evaluating	Participating	Communicating ideas
5	I can evaluate information from a range of sources.	I can evaluate how institutions enhance democratic values and participation.	I can evaluate the strategies used to make decisions.	I can use sources to construct evidence-based arguments.
4	I can sort and represent data and information.	I can analyse the reliability of information.	I can design strategies to achieve outcomes.	I can explain different perspectives using data.
3	I can gather information from secondary sources.	I can write evidence-based conclusions.	I can discuss the impact of a strategy.	I can compare different methods of communication.
2	I can plan an investigation.	I can describe different interpretations.	I can describe a strategy to achieve outcomes.	I can reflect on my own and others' perspectives.
1	I can ask open-ended questions.	I can identify data relevant to a question.	I can identify outcomes.	I can describe civics and citizenship issues.

Steps in skills progression

Skills

How is Australia a diverse society?

Australia is a multicultural society, with Indigenous Australians having the longest connection to the land. The country has a diverse society with key values of inclusion and freedom, including the freedom of religion.

Multicultural Australia

Only Australia's First Nations Peoples can truly claim to be Australian, as they are descended from peoples who have lived in Australia for more than 60 000 years. All other people in Australia are recent migrants, beginning with British colonists, who began to arrive in 1788.

In 2024, nearly 30 per cent of all Australians were born overseas. England is still the largest supplier of migrants, as it has been since 1788. However, there are now many more migrants from neighbouring Asian and Pacific countries. This shift in immigration patterns began around 1970.

Australia is a **pluralist** nation that supports a **culturally diverse** society with different types of people, beliefs and opinions. It is critical to respect the rights of all to express and share their cultural heritage – in the way we dress, what we eat, the languages we speak and our faiths and beliefs.

Fear of difference often comes from not understanding other cultures. The 2020 Mapping Social Cohesion report found that 84 per cent of respondents believed that multiculturalism had been good for Australia, but racist attitudes towards certain groups in the responses showed that we still have much work to do to achieve a fairer society that respects and values its **diversity**.

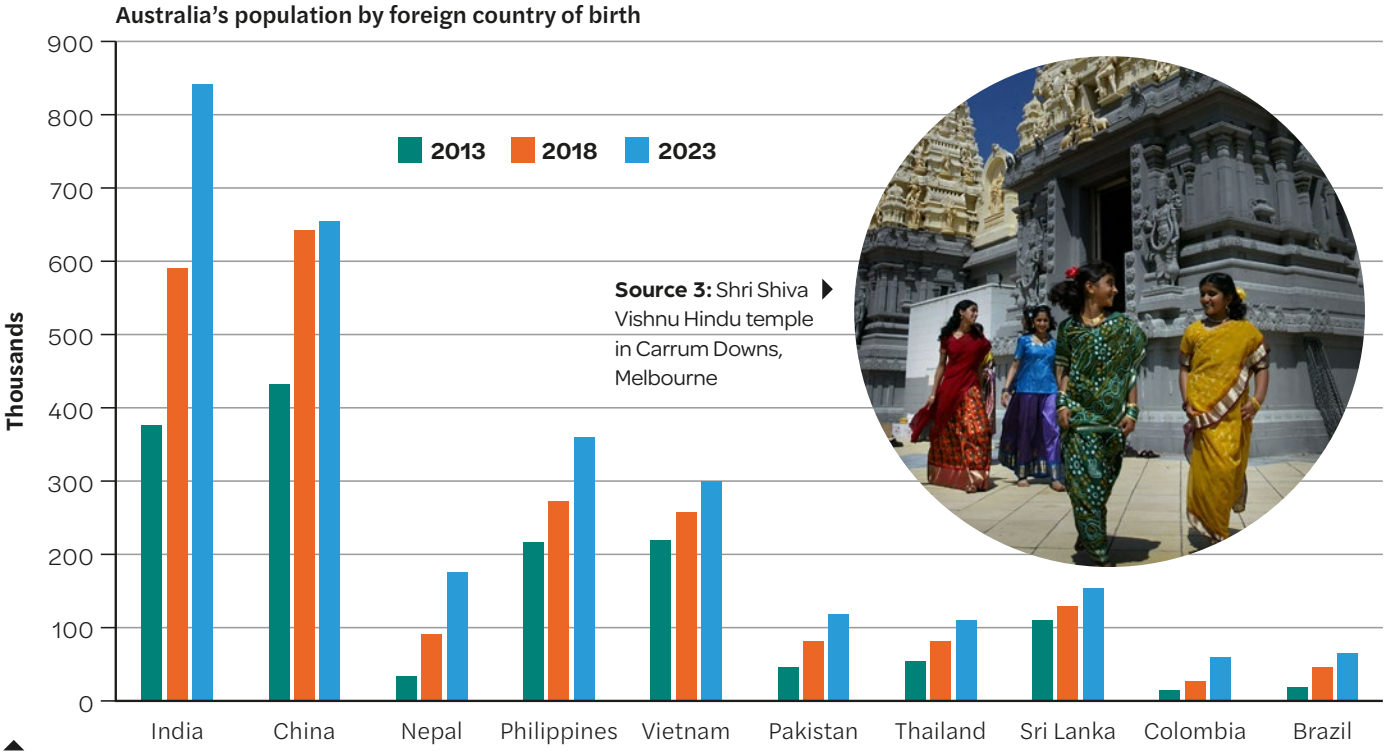
Religion

One of the freedoms enjoyed in Australia is the opportunity to practise whatever religion you choose, or no religion at all. The 2021 **Census** found that 38.9 per cent of Australians had no religious affiliation. **Christianity** is Australia's largest religion, including Catholics (20 per cent) and Anglicans (9.8 per cent). Australia's Christian heritage began with British colonisation in 1788. Australia has developed as a **multi-faith** society as people from many different cultures have brought diverse customs, beliefs and religions.

Source 1: Young girls celebrate their Hindu religion and Indian culture in traditional dress at the Festival of Holi in Sydney.

Australia is a **secular** country, where the church is separate from the government and does not directly influence its decisions. In a secular nation the religious beliefs of one group of people are not forced onto those of other faiths. Australia supports people to choose their own religious beliefs or not have a religion at all.

Nearly a quarter of the world's countries are **non-secular**, where the legal and government systems are based on religious teachings. Most of these countries are in northern Africa and south-east Asia. Some examples of non-secular nations are Iran (Shia Islam), Iraq (Islam), Israel (Judaism), Malaysia (Sunni Islam), Cambodia (Buddhism) and England (Protestantism).



Source 3: Shri Shiva Vishnu Hindu temple in Carrum Downs, Melbourne

Source 2: Top 10 countries contributing to the largest increase in population in Australia 2013–2023

Source: Australian Bureau of Statistics

Learning ladder CC2.1

Diversity

1. Define the following terms: secular, multi-faith, diverse society, pluralist. Use each in a sentence.
2. Source 2: From which country did the most migrants come to Australia between 2013 and 2023? Describe how this has changed over time.
3. Explain how the cultural and religious make-up of Australia has changed since the 18th century.
4. Why do you think some people feel negatively about people of different cultures? Explain how this can change.
5. **a** What does it mean for Australia to be a secular country?
   b Research one of the world's non-secular countries and analyse the role that religion plays in the government of the country.

Participating

1. What are the potential outcomes of promoting multiculturalism and freedom of religion in Australia?
2. If you were designing a strategy to reduce racism in Australia, what key actions would you take to foster understanding and respect for cultural diversity?
3. How might a strategy aimed at increasing cultural awareness in schools impact the overall social cohesion in Australia?
4. How would you design a community outreach program to reduce misunderstandings between different cultural groups?
5. How effective are the Australian government's strategies to ensure religious freedom while maintaining its secular status?

What does it mean to be Australian?

Early colonial Australian identity was strongly tied to British culture and focused on themes like the Australian bush and mateship. After World War II, Australia embraced more diverse cultural influences, leading to a more inclusive modern identity.

Early ideas of Australian identity

Early ideas surrounding Australian **identity** were heavily linked to Britain and excluded First Nations cultures, which had thrived for thousands of years prior to European colonisation. These ideas generally surrounded two key themes: the Australian bush and 'mateship'.

The Australian bush, with its vast and rugged landscapes, played a significant role in shaping the identity of early colonists. It symbolised both opportunity and challenge. The bush became a central theme in Australian literature, art and folklore. It represented a distinct Australian way of life, emphasising self-reliance, endurance and a connection to the land.

Mateship is a quintessentially Australian concept rooted in camaraderie, loyalty and mutual support. This idea of Australian identity was also heavily masculine and largely excluded women and groups from non-European backgrounds, such as Chinese migrants who had arrived during the Victorian gold rush.

As Australia entered the early 20th century, ideas surrounding identity started to shift away from Britain and towards a more independent image. This was largely driven by Australia's involvement in World War I as Gallipoli left an indelible mark on the national psyche. It became a symbol of sacrifice, courage and mateship, a mythology largely forgotten until the resurgence of Anzac Day in the 1980s and 1990s.

Post World War II

After World War II, Australia developed a more sophisticated relationship with Britain but also found a powerful new ally in the United States. This led to an influx of American cultural influences, which had an inevitable impact on Australian identity, leading to newfound confidence and a more independent outlook. More importantly, the end of the White Australia policy meant the arrival of more and more migrants from countries other than England. Migrants from countries such as Italy, Greece and Vietnam arrived throughout the 1960s, 1970s and 1980s, and in 1971 the Aboriginal flag was raised for the first time. The Torrres Strait Islands flag was first raised in 1992. These events led to long-term changes in Australia's identity.

Source 1: 'A break away!' painted by Tom Roberts in 1891 is an early example of Australian identity portrayed by artists and writers at the time – working hard to overcome adversity in a rugged landscape.

Modern Australian identity

Finally, throughout the 1990s and early 2000s Australian identity shifted to a more inclusive promotion of core values and ideas. Today, Australian values can be largely summarised as:

- **freedom** to make our own decisions within the boundaries of the law. Australians enjoy freedoms that some other people don't have, such as the freedom to openly express opinions in public and the freedom to practise different religions.
- **equality** for everyone, without discrimination. All Australians deserve a 'fair go' to access work, education and healthcare, regardless of their sex, gender, race or wealth.
- **compassion** towards people who need our help; for example, compassion towards **refugees** who may have fled from difficult circumstances, such as war, and who arrive with different values, beliefs and languages.
- **inclusion** of every person who makes up our society, no matter what they look like or how they choose to live. The most liveable places are those where everyone feels connected to the community, rather than isolated.
- **responsibility** for our actions, and making sure that others do not suffer as a result. All Australians should understand what is right and wrong – laws are in place to make sure that people act responsibly.

Source 2: Usman Khawaja is the first Muslim and first Pakistani-born Australian player to play Test cricket for Australia. He is an example of a more inclusive contemporary Australian identity.

Learning ladder CC2.2

National identity and citizenship

1. **a** Source 1: Identify how this painting represents an early example of Australia's identity.
   b Source 2: Describe how this photograph represents a modern example of Australia's identity.
2. Describe how early ideas of Australian identity were influenced by British culture, and what the key themes associated with this identity were.
3. Explain how Australia's involvement in World War I impacted its national identity.
4. **a** What were some significant changes in Australian identity after World War II?
   b Explain why the first raising of the Aboriginal flag in 1971 was an important change in Australia's identity.
5. Evaluate the extent to which you think some, or all, of the identified 'Australian values' are upheld by today's society. Use examples.

Investigating

1. How did early ideas about Australian identity shape the way people viewed the Australian bush and mateship?
2. If you were tasked with investigating how Australian identity has changed since World War I, what steps would you take to gather information?
3. Where could you find sources that discuss the impact of World War II on Australian identity, including cultural influences from the United States?
4. How would you organise the key events and shifts in Australian identity from the early 20th century to the modern day into a timeline?
5. How would you assess the reliability of articles discussing how the end of the White Australia policy influenced Australia's modern identity?

Why do migrants become Australian citizens?

Australian citizenship is attractive to migrants as it provides a responsibility to participate in a democratic society with core values of freedom, equality, compassion and inclusion.

Why do migrants come to Australia?

Throughout Australia's history, millions of people have migrated to Australia from most countries across the world. **Migrants** have come to Australia in search of a better life or to escape from conflict or persecution in their homelands. In recent times, some of the key reasons migrants come to Australia include:

- **career opportunities** – Australia's low natural population growth means that there is a great need for migrant workers to fill job vacancies
- **health care** – Australia provides free or subsidised health care and some of the world's best hospitals
- **education** – Australia provides high-quality education to many overseas students coming to study in Australia and free or subsidised education for citizens
- **liveability** – cities in Australia rank as some of the most **liveable** in the world based on safety, culture, environment, health care, education and infrastructure
- **citizenship** – permanent residents can qualify for **citizenship** to become citizens and have the right to vote in elections and obtain an Australian passport.

How do migrants become citizens?

To apply to become an Australian citizen a candidate must have been a permanent Australian resident for at least four years and intend to continue to live in Australia. The citizenship candidate must also be shown to be of good character. If the application for citizenship is accepted, the candidate must be interviewed and then sit and pass a citizenship test to show they have an adequate knowledge of Australia and the rights and responsibilities of Australian citizens (Source 1). It is a computer-based, multiple-choice test in the English language made up of 20 questions about Australia, citizenship and values. To pass, a candidate must score 75 per cent, including answering all five Australian values questions correctly.

Australian citizenship test questions

1 **What do we commemorate on Anzac Day?**
   a The landing of the Australian and New Zealand Army Corps at Gallipoli, Turkey during World War I
   b The arrival of the first free settlers from Great Britain
   c The landing of the First Fleet at Sydney Cove

2 **Which of these is an example of freedom of speech?**
   a People can peacefully protest against a government action
   b Men and women are treated equally in a court of law
   c Australians are free to not follow a religion

3 **Which of these is a responsibility of Australian citizens aged 18 years or over?**
   a To attend local council meetings
   b To vote in federal and state or territory elections, and in a referendum
   c To have a current Australian passport

4 **Which of these statements about government in Australia is correct?**
   a The government does not allow some religions
   b The government in Australia is secular
   c Religious laws are passed by Parliament

5 **What is the capital city of Australia?**
   a Brisbane
   b Canberra
   c Perth

6 **Which of these is an example of equality in Australia?**
   a Everyone follows the same religion
   b Men and women have equal rights
   c Everyone belongs to the same political party

Source 1: Sample questions from the Australian citizenship test

Citizenship ceremonies

At an Australian citizenship ceremony, candidates read or repeat the Australian Citizenship Pledge aloud (Source 3) to officially accept both the privileges and the responsibilities of Australian citizenship.

Australian citizenship ceremonies vary from large events with hundreds of people to small events involving only a few people. The ceremonies may involve a Welcome to Country from First Nations Traditional Owners of the land in the area along with leaders from the local community or government.

A candidate does not become an Australian citizen until they make the pledge to demonstrate the commitment to Australia and its core values. Candidates may choose to remove the term 'under God' and are welcome to bring a holy book from their own religion while making the Australian Citizenship Pledge.

At the completion of the ceremony, new Australian citizens receive a certificate of Australian citizenship (Source 2) and everyone present sings the Australian national anthem, 'Advance Australia Fair'.

Source 2: Hina Asim shows her certificate of citizenship following a ceremony where she made the Australian Citizenship Pledge.

From this time forward, under God,*
I pledge my loyalty to Australia and its people,
whose democratic beliefs I share,
whose rights and liberties I respect,
and whose laws I will uphold and obey.

* A person may choose whether or not to use the words 'under God'.

Source 3: The Australian Citizenship Pledge made by candidates at a citizenship ceremony

Learning ladder CC2.3

Values

1. **a** Identify the meaning of 'citizenship'.
   b How do migrants become Australian citizens?
2. Describe the aspects of Australian society that are attractive to potential migrants from other countries.
3. Source 1: Why is it important that new citizens show an understanding of the important values underpinning Australian society?
4. **a** Source 3: Explain how the Australian Citizenship Pledge is one example of Australia being a secular country that is accepting of all religions.
   b Source 2: What responsibilities do new citizens undertake in making the Pledge?
5. Source 1: Evaluate the fairness of the Australian citizenship test being in English. Provide examples of questions that might prove difficult to migrants with limited English.

Participating

1. What are the likely outcomes for a migrant who successfully completes the citizenship process, in terms of rights, responsibilities and participation in Australian society?
2. How might the Australian government encourage more migrants to apply for citizenship?
3. How might a new citizenship ceremony or public awareness campaign about the benefits of citizenship impact migrants' decision to apply for citizenship?
4. How would you design a program to help migrants understand the Australian citizenship process and test in a way that makes it easy to understand?
5. How effective is the Australian citizenship test in ensuring that new citizens are well-prepared to live in a democratic society with core values like freedom and equality?

How do groups express their identity?

People express their identity through membership of different groups such as cultural and religious groups and sporting clubs. National identity is based on shared values, including freedom and equality, and expressed in national anthems.

Expressions of identity

Identity can be expressed in many different ways. People often express their identity through their membership of different groups. For example, a married person may wear a wedding ring to show their marital status or a family may display a sticker on their car to show their connection to their family (Source 1).

Supporters of a sporting team will wear its jersey and music fans will proudly wear clothing featuring their favourite performers. Personal identity is expressed through membership of many communities, such as cultural groups, religious groups, professional associations, and sporting and social clubs.

Active citizenship involves engagement in local community groups through volunteering and support.

Cultural identity

Culture is the shared characteristics of a group of people, including place of birth, language, religion, arts, dress and cuisine. Members of an ethnic group may wear clothing or have markings on their skin that are unique to their culture. **Cultural identity** is expressed through celebrations such as Diwali, the Hindu festival of lights featuring traditional music, dance and food, in cities such as Sydney and Melbourne. Similarly, Chinatown districts in cities such as Sydney, Melbourne and Brisbane showcase Chinese culture through events, cuisine and traditional architecture (Source 2). These expressions of cultural identity contribute to the vibrant **multicultural** fabric of Australian cities.

Source 1: Expressions of identity can be as simple as a car sticker showing your allegiance to a sporting team or even your family.

Source 2: Chinese community members participating in Lunar New Year celebrations in Melbourne's Chinatown

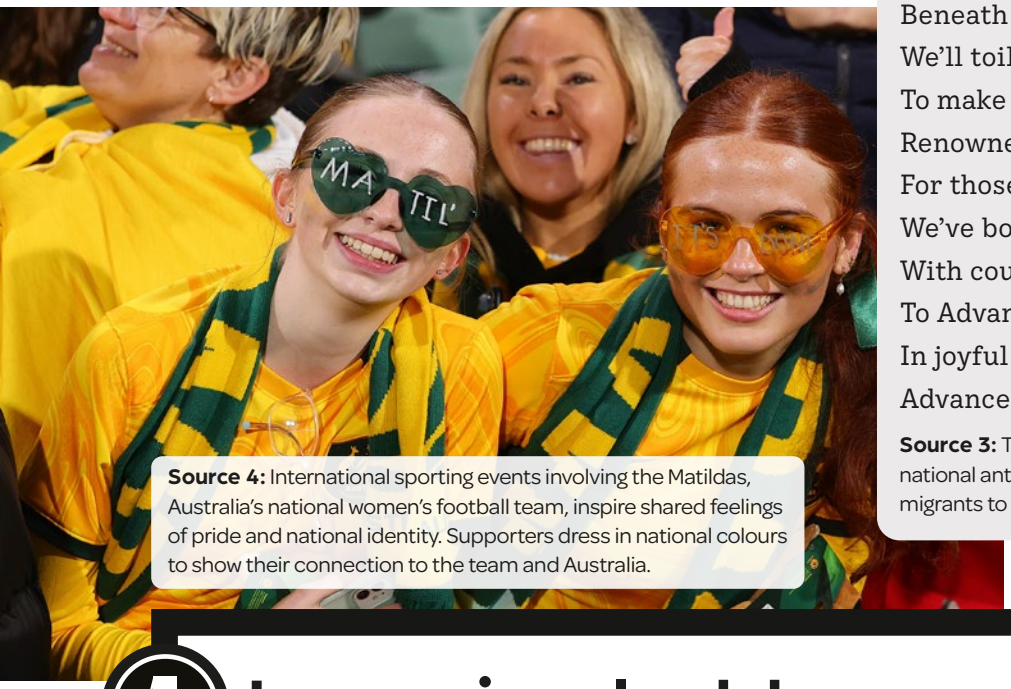
Shared values and identity

Australia's shared values are based on freedom, **respect, fairness** and equality. Adhering to these values helps make Australia's diverse society a more secure and peaceful place to live. These values are represented in our **Constitution** and laws and expressed in our national anthem (Source 3). National anthems and international sporting events such as the Olympic Games bring people together with a shared feeling of pride and identity. National anthems are expressions of a country's identity, values and hope for the future. They foster unity in diverse populations such as Australia's.

Australians all let us rejoice,
For we are one and free;
We've golden soil and wealth for toil;
Our home is girt by sea;
Our land abounds in nature's gifts
Of beauty rich and rare;
In history's page, let every stage
Advance Australia Fair.
In joyful strains then let us sing,
Advance Australia Fair.

Beneath our radiant Southern Cross
We'll toil with hearts and hands;
To make this Commonwealth of ours
Renowned of all the lands;
For those who've come across the seas
We've boundless plains to share;
With courage let us all combine
To Advance Australia Fair.
In joyful strains then let us sing,
Advance Australia Fair.

Source 3: The lyrics of 'Advance Australia Fair', the national anthem, speak of our values and welcoming migrants to share in Australia's riches.



Source 4: International sporting events involving the Matildas, Australia's national women's football team, inspire shared feelings of pride and national identity. Supporters dress in national colours to show their connection to the team and Australia.

Learning ladder CC2.4

Identity

1. **a** Source 1: How is this an example of an expression of identity?
   b Source 2: How are members of Australia's Chinese community expressing their cultural identity at this event?
2. Source 3: Describe the terms used in 'Advance Australia Fair' that refer to the celebration of multiculturalism in Australia.
3. Source 4: Explain how these supporters are expressing a national identity.
4. Explain how expressions of identity can be seen in a negative light by others.
5. What role does the national anthem play in Australian society?

Communicating ideas

1. How does the concept of 'shared values' help people in Australia from different backgrounds live together in harmony?
2. How might someone from a migrant background view the national anthem 'Advance Australia Fair' differently from someone whose family has been in Australia for generations?
3. How do the ways Australians express their national identity compare to how cultural groups express their identity?
4. Explain how events like Diwali or Lunar New Year help show the importance of cultural expression in Australia's identity.
5. Construct an argument for or against the idea that the national anthem 'Advance Australia Fair' is an effective symbol of unity for all Australians, using evidence from the chapter.

Are First Nations identities represented in Australian identity?

Identity refers to an individual's sense of belonging to a group or culture, or to a country or region. What it means to be Australian is very difficult to define, as our nation is full of diverse cultures.

First Nations identities

Before Australia was forcibly turned into a British colony in 1788, First Nations Peoples identified themselves by their nation. They would say things like 'I'm a Wurundjeri man', or 'I'm a Waveroo woman'. Aboriginal people define their Aboriginal identity not by skin colour but by relationships and connections to family.

Indigenous identities in Australia are complex due to the diversity of cultures, languages and territories among Indigenous Peoples. With more than 250 distinct language groups, each with specific traditions and territories, Indigenous Australians have a deep connection to Country. The impact of colonisation has disrupted pre-colonial ways of life and led to the destruction of languages and cultural practices. Despite these challenges, Indigenous identity remains resilient, shaped by both pre-colonial and contemporary influences, and continues to play a vital role in Australian society.

Australian National Flag

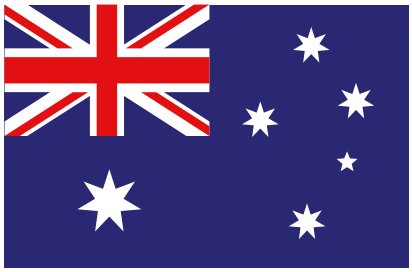
The Australian flag (Source 2) features the Union Jack to show our close ties to Great Britain. Indigenous leader Lowitja O'Donoghue said the current flag showed a 'narrow slice of our history' where the rights of Indigenous people were ignored. 'For this reason, most of Australia's Indigenous people cannot relate to the existing flag,' she said. 'For us, it symbolises dispossession and oppression.'

Australia Day

Australia Day is held on 26 January each year. On 26 January 1788, Captain Arthur Phillip established the first British colony at Sydney Cove. On Australia Day we are encouraged to reflect on what it means to be Australian and to celebrate all the things we love about Australia.

For First Nations Australians, 26 January is a controversial date, as it highlights the day that the continent was invaded and their way of life was changed forever.

Source 1: Thousands of people gather across Australia on 26 January to protest against celebrating Australia Day on the day the protesters have labelled 'Invasion Day'.



Source 2: Australian National Flag. The British Union Jack represents Australia's history as a British colony (1788–1901). The Southern Cross symbolises Australia's geographic position. A seven-pointed star represents the Federation of six states, with one point representing the territories.

Source 3: Australian Aboriginal flag. The red stripe symbolises the land and the black stripe represents the Aboriginal people. The yellow circle represents the life-giving Sun.

Source 4: Torres Strait Islander flag, designed by Mr Bernard Nomak. The green symbolises land, the blue represents sea and the black stripes show the people. The white symbol is a headdress known as a Dhari and the white star represents the Torres Strait's five island groups.

Source 5: Unofficial Reconciliation flag. Dr. John C. Blaxland's 2013 Australian Flag Proposal attempts to give recognition to First Nations Peoples by including the black, red and yellow colours from the Aboriginal flag, a boomerang to show ingenuity and dots to recognise artistry.

Learning ladder CC2.5

Identity

1. **a** Source 1: Give three examples of how First Nations people express identities.
   b Source 3: How does the Aboriginal flag express the identities of Aboriginal Peoples?
2. Describe the purpose of Australia Day.
3. Source 1: Explain what is happening and why these protesters feel so strongly about this issue.
4. **a** Source 2: What view does Lowitja O'Donoghue have about the Australian National Flag? Explain why others would like to retain this flag.
   b Source 5: Why was this flag put forward as an alternative to the Australian National Flag? Explain the changes that have been made to the existing national flag.
5. List arguments for and against keeping 26 January as Australia Day. Combine the arguments as a class list and analyse which are the most inclusive.

Evaluating

1. What data would be relevant if you were analysing the impact of colonisation on First Nations languages and cultural practices?
2. How might a First Nations person interpret the symbolism of the Union Jack on the Australian National Flag?
3. How would you conclude that the current Australian National Flag does not fully represent the history and identity of First Nations Peoples?
4. How would you assess the reliability of a news report that presents the Australian National Flag as a symbol of unity for all Australians?
5. How do institutions like the Australian government, schools and cultural organisations represent First Nations identities in the broader Australian society?

How does active citizenship improve social cohesion?

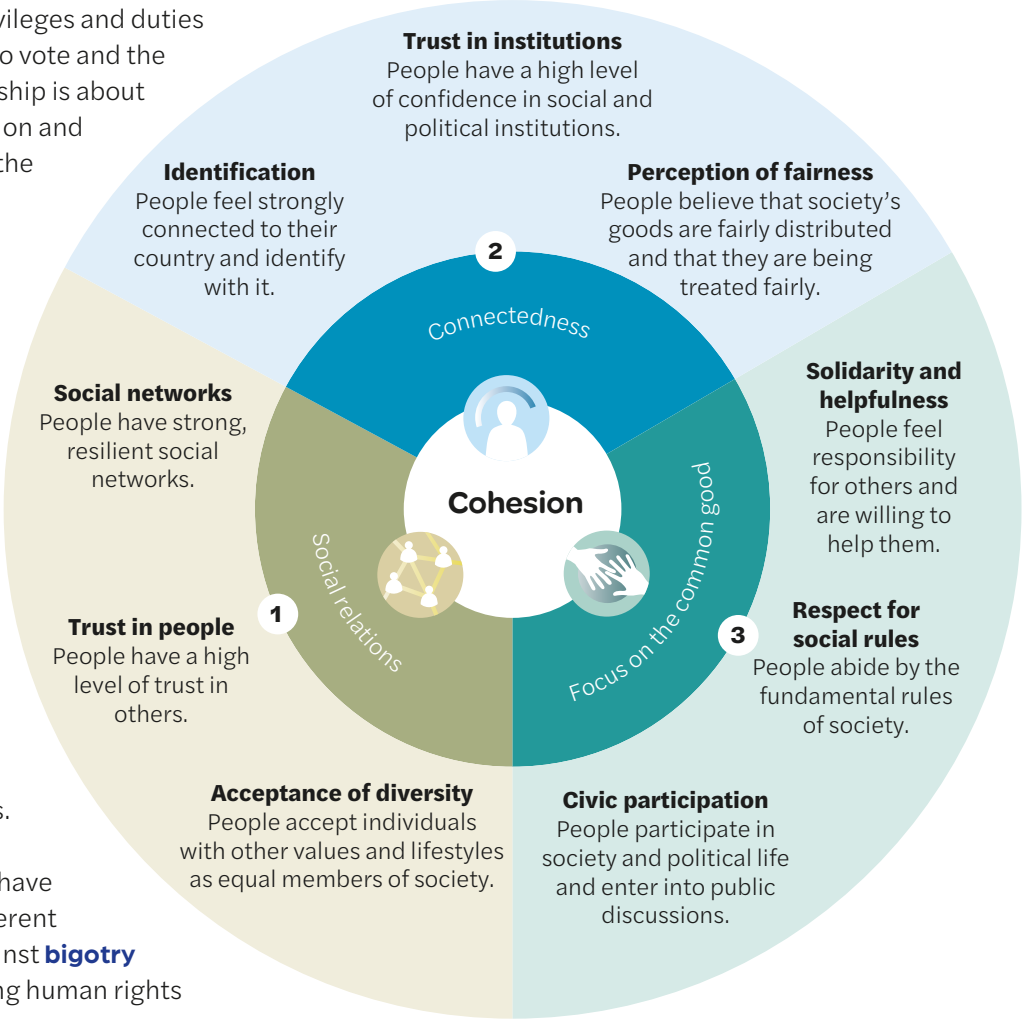
Active citizenship helps to build communities and develop a more cohesive and resilient society by expressing the shared Australian values of fairness, respect, freedom and equality.

Active citizenship

Citizenship refers to the rights, privileges and duties of a citizen; for example, the right to vote and the duty to obey the law. Active citizenship is about displaying values such as compassion and inclusion by becoming involved in the community. Active citizenship can take many different forms, such as volunteering with a charity (Source 2), participating in public meetings and committees, or protesting against inequality. Active citizens help build resilience through working with others to create communities and improve society.

Global citizenship

Many of the local activities of an active citizen can also have a wider impact. Active **global citizenship** is where citizens take action that benefits not only local, but also international communities. Global citizenship recognises how decisions in one part of the planet have an impact on people living in a different area. For example, local action against **bigotry** and **racism** plays a role in protecting human rights on an international scale.



Source 1: Social Cohesion Radar

Social cohesion

Social cohesion involves building shared values and a sense of engagement and common purpose for a community (Source 1). For example, Australia's shared values make clear that everyone should feel free to respectfully show their identity without being bullied or victimised. A socially cohesive community means that everyone has the freedom and the right to practise and share their cultural beliefs, free from discrimination or censorship.

Smartphones can help to build social cohesion by increasing connection with friends through social media and building communities through common interests. However, social media is also used for unlawful activities like **cyber bullying**, leaving the victim lonely and despondent (Source 3).

Source 2: FareShare is an example of active citizenship. Volunteers work with experienced chefs in charity kitchens in Melbourne and Brisbane to cook thousands of free, nutritious meals every day for those in need.

Source 3: Cyber bullying works against social cohesion by leaving the victim lonely and despondent.

Learning ladder CC2.6

Values

1. Identify two different values displayed through active citizenship.
2. Source 2: Describe how this is an example of active citizenship.
3. Explain the similarities and differences between citizenship, active citizenship and global citizenship.
4. Source 3: Explain why the use of social media can help build and tear down social cohesion.
5. Source 1: Analyse the importance of strong social cohesion in developing a successful democracy. What occurs when social cohesion is weak?

Investigating

1. How does active citizenship help build a more resilient and cohesive society in Australia?
2. If you were investigating how volunteering in local communities supports social cohesion, what steps would you take to gather information?
3. Where could you find information on the impact of global citizenship on human rights protection in different countries?
4. Categorise different forms of active citizenship, such as volunteering, protesting or participating in community meetings, into a table to compare their contributions to social cohesion.
5. How would you evaluate the reliability of a report on the effectiveness of active citizenship in building social cohesion in Australian communities?

Why does racism threaten values and social cohesion?

Taking action against racism supports the person targeted and upholds the values of freedom, respect and inclusion that bind a society together.

What is racism?

Racism is where a person or group of people are treated worse, excluded, disadvantaged, harassed, bullied, humiliated or degraded because of their ethnicity. The factors that enable this are prejudice (a negative attitude or judgement toward the individual or group) and power – the ability to influence, lead, dominate or impact the lives of others.

Different kinds of racism

There are many different types of racism and not all of them are public, intentional and malicious. It is possible to be accidentally racist. It is also possible to make racist jokes, and to be racist in hidden ways; for example, someone who throws away job applications from potential employees because they have a name which is not English. These examples all have power and prejudice which allow others to be harmed by these actions.

First Nations peoples and migrants regularly experience racism. Migrants whose skin colour, clothing or language is different are more likely to be targets of racism.

Racism and social cohesion

Racism is a threat to social cohesion and the important values that support Australia's **democracy**. Whenever there is an act of racism, it threatens the freedom that all Australians should have to live their lives with fairness and respect.

We have important laws that allow us to legally respond to racist people. In 1975 the Australian Parliament passed the *Racial Discrimination Act* to protect human rights and tackle discrimination. In 1995 **racial vilification** provisions were added to the law to make it unlawful to perform any act that offends, insults, humiliates or intimidates another person or group of people because of their race.

Bullies hurl abuse at Muslim women

Police have released photos of the two men accused of racially abusing three Muslim women on a busy train and punching a man in the face for coming to their defence.

Jason Cias, 37, was travelling from Melbourne Central Station on a Craigieburn-bound train on Friday, May 15 when two men started racially abusing the women about 3.30pm.

The father of three said the racial vilification started when one of the young women sat down next to the men and they told her she shouldn't wear her headscarf in Australia.

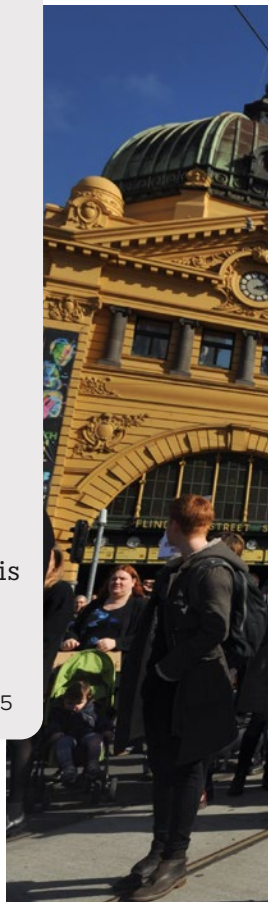
The incident escalated when the woman asked the man what his problem was and her friend started speaking in Arabic to calm the situation down.

'The comment was "You shouldn't be speaking that s*** in Australia",' Mr Cias told The Age.

The three women got off the train at North Melbourne before one of the men threatened to 'f***ing smash' them.

Police say Mr Cias then spoke to the men about their behaviour and things turned nasty. The men told him to mind his own business and punched Mr Cias in the face twice in front of shocked onlookers.

Source 1: Emily Crane for *Daily Mail Australia*, 28 May 2015



On their own, laws are not enough to stop racism from dividing our society. Racism is a cause of serious injustice in society, with everyday experiences of harassment, intimidation and discrimination felt by many Australian citizens. Upholding the rights and responsibilities of citizenship is critical in providing social cohesion and tackling racism in Australia.

Showing leadership by calling out racism can help the offender consider their actions and send a powerful message to society that racism is not acceptable (Sources 1 to 3). When bystanders witness racism and stay silent it can support the idea that racism is acceptable. The person being targeted needs to be supported to speak up if it is safe to do so and ask for help if they need it. If you witness a racist attack it can be useful to record the details of the incident and report it. Severe cases of racial abuse should be reported to police or, if at a sporting match, to stadium officials.

It is up to us to do something when we see racism occurring. We must not be bystanders, and it is important to support the person experiencing racism. The success of our community comes from social cohesion, and this can only be successful when we work together to look after everyone.

Source 3: In 2023 Western Bulldogs AFL footballer Jamarra Ugle-Hagan lifted his jumper and pointed to his skin after 'harmful and abhorrent racist remarks' were directed at him by a rival supporter. His action was inspired by the famous action of First Nations St Kilda footballer Nicky Winmar in 1993 in response to a similar incident of racism. Ugle-Hagen commented, 'Things are getting better ... [but] there's still a few who can't control their negative attitudes; all we can do is keep supporting each other, and keep calling it out'.

Source 2: Cultural identity is not always respected in Australia, leading to examples of racism against groups within the community. Active citizens can use the right of freedom of speech to speak openly and protest peacefully when they want to let their views be known.

Learning ladder CC2.7

Values

1. What is racism? Identify the most likely targets.
2. Source 1: Describe the racial vilification suffered by the Muslim women on the train and the action taken by Jason Cias. What other action could bystanders have taken?
3. Source 2: Explain the importance of upholding shared values in Australian democracy.
4. Source 3: Explain Jamarra Ugle-Hagen's actions and why he thought it was important to make a stand against racism.
5. Analyse whether or not racism is a threat to social cohesion and a successful democracy.

Participating

1. What are the potential outcomes for a society that does not address racism effectively, in terms of social cohesion and equality?
2. What actions would you take to encourage understanding and inclusiveness among students at your school?
3. How might a strategy to educate young people about racism and its effects on social cohesion impact the attitudes of future generations?
4. How would you design a community event that encourages people to speak out against racism and support victims?
5. How effective are the strategies used by public figures and leaders, such as Jamarra Ugle-Hagan, in calling out racism and raising awareness about its harmful impact?

How do I conduct an investigation?

Now that you've finished the chapter, it is time to conduct your own investigation on citizenship, diversity and identity. Throughout the chapter you have developed knowledge and understanding of citizenship, diversity and identity. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own investigation into contemporary issues!

An investigation gives you the opportunity to be an active participant in contemporary civics and citizenship issues: investigating, evaluating and communicating your findings.

The chapter has covered how Australia's diverse population expresses identity and the important democratic values that support cohesion in Australian society. What would you like to know more about?

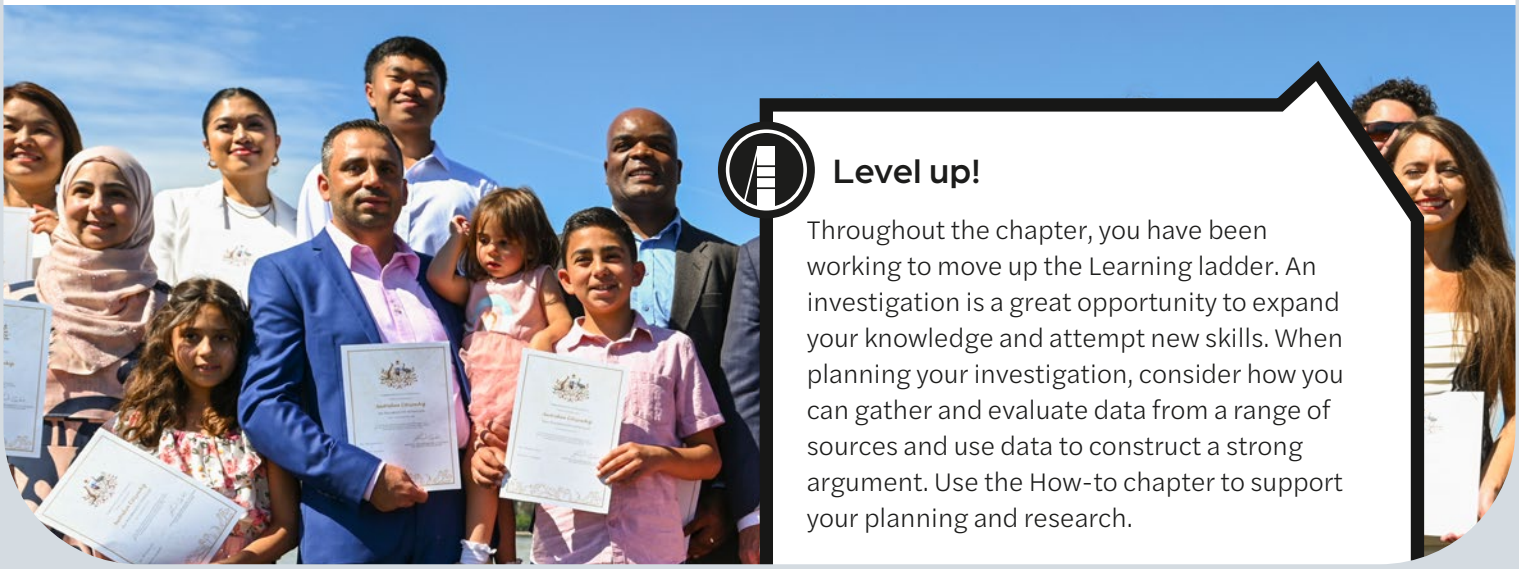
- What it means to be Australian, page 482
- How groups express their identity, page 486
- First Nations identity, page 488
- How active citizenship improves social cohesion, page 490

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas. Once you have worked through this process, you are ready to start your investigation.

Refer to pages 496–8 of the How-to chapter for a step-by-step guide to this process.



Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An investigation is a great opportunity to expand your knowledge and attempt new skills. When planning your investigation, consider how you can gather and evaluate data from a range of sources and use data to construct a strong argument. Use the How-to chapter to support your planning and research.

Civics & Citizenship

How-to

CC3

Civics and citizenship skills are based on investigating issues to evaluate different perspectives, actively engaging in democratic decision-making, and effectively communicating ideas.

How to develop civics and citizenship skills

The skills described in this How-to will help you participate in Australia's democracy as an active and informed citizen who questions, understands and contributes to your community and beyond. There are five levels of difficulty for each skill. Each skill is described and a model is provided that demonstrates how to master the skill at each level. Learning skills at the lowest level of difficulty will help you to master the skills at the highest level.

Investigating

Investigating is an important skill in civics and citizenship. It allows us to ask questions, gather information and evaluate different perspectives. By developing strong investigative skills, we can understand how democracy works, how people express their identities, and how to assess issues such as diversity, inclusion and active citizenship.

1 I can ask open-ended questions

Open-ended questions help us explore issues in detail. They do not have a simple 'yes' or 'no' answer. Instead, they begin with words like *why*, *how*, *what* or *to what extent* and encourage discussion and deeper research.

Example

Instead of asking 'Is Australia a multicultural country?' (which can be answered with yes or no), you could ask:

- How has multiculturalism shaped Australian identity?
- What challenges do migrants face when integrating into Australian society?
- In what ways does the Australian citizenship pledge reflect the country's values?

2 I can plan an investigation

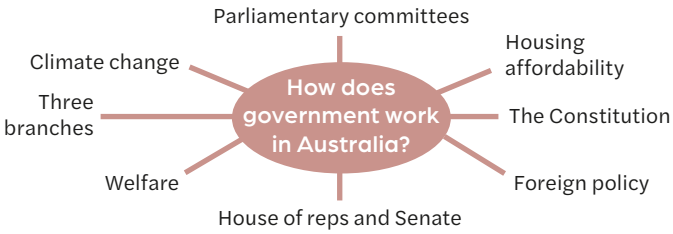
Planning an investigation involves selecting a topic, deciding what information you need and choosing where to find it. A well-planned investigation ensures you gather relevant and reliable data.

Example

Inquiry question: How does active citizenship improve social cohesion?

Planning steps:

1. Identify key aspects of the question (e.g. what is active citizenship, what is social cohesion, and how are they linked?).
2. Consider sources:
   - primary sources: government websites, interviews with community leaders.
   - secondary sources: news articles, reports, academic studies.
3. Develop sub-questions:
   - What examples of active citizenship exist in Australia?
   - How do community groups help to build inclusion?



Source 1: Jot down key information in a brainstorm cloud.

3 I can gather information from secondary sources

Secondary sources are sources that have already been created by someone else. These include books, articles, government reports and databases.

Example

Inquiry question: Why do migrants become Australian citizens?

You might gather information from:

- the Australian Bureau of Statistics (ABS) for migration trends
- government websites explaining the citizenship process
- news articles about recent citizenship ceremonies.

Tip: Always check if your sources are up to date and come from trustworthy organisations.

4 I can sort and represent data and information

Once you gather information, you need to organise it in a way that makes sense. This may include using tables, graphs, charts or summaries to present key findings.

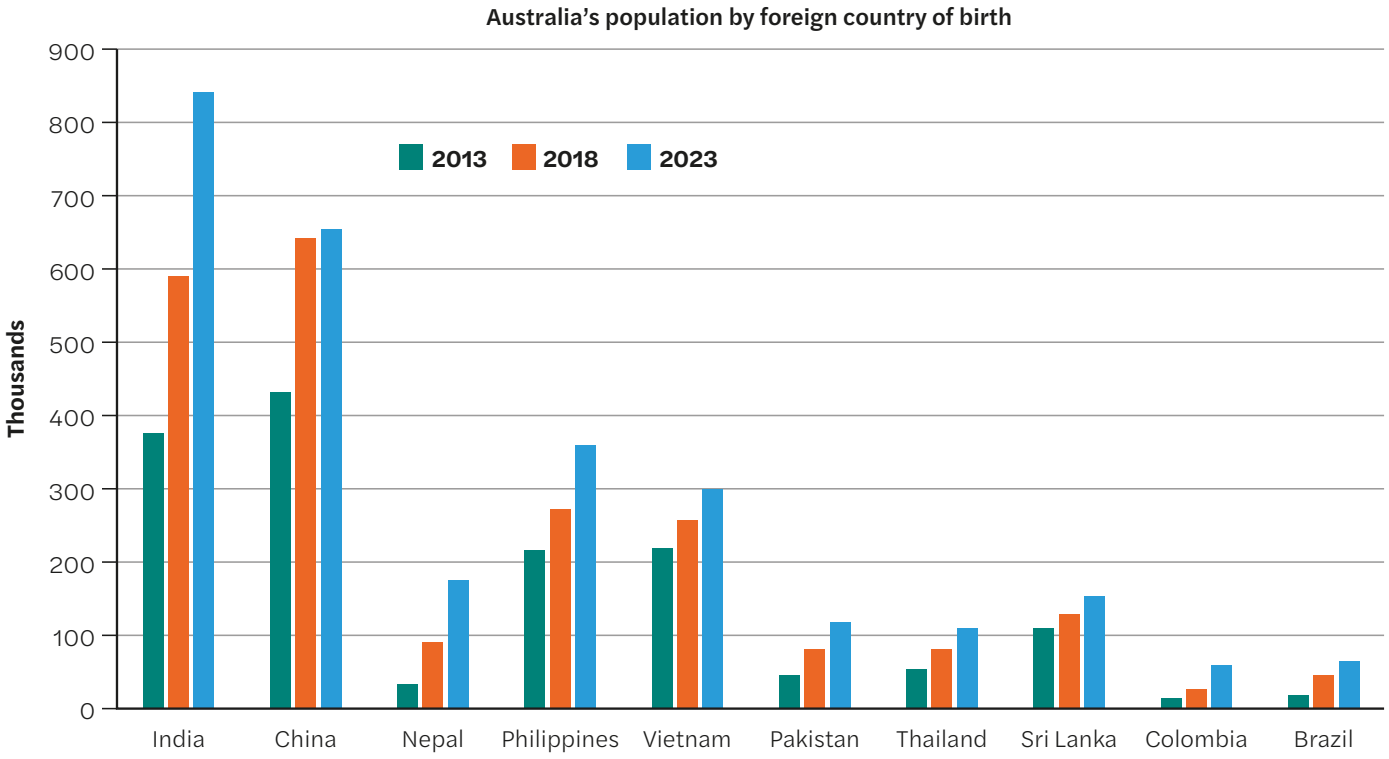
Source 2 shows the top 10 countries of birth for migrants to Australia from 2013, 2018 and 2023. This information could be represented as:

- a bar graph comparing migration numbers over time
- a table listing the top countries and their population changes
- a short summary explaining trends (e.g. 'Migration from Nepal has increased significantly in the last decade').

5 I can evaluate information from a range of sources

Evaluating sources means checking whether information is reliable, biased or outdated. It also involves comparing different perspectives to form a balanced understanding of an issue. Reliable information comes from trustworthy sources, is supported by evidence and is as up-to-date as possible.

Bias occurs when information is presented in a way that favours a particular viewpoint. This can happen deliberately (to persuade or influence) or unintentionally (due to personal experiences shaping the way someone interprets information). Even researchers must be aware of their own personal bias when evaluating sources, as our background, beliefs and experiences influence how we interpret information.



▲ **Source 2:** Top 10 countries of birth for migrants to Australia, 2013–2023

Source: Australian Bureau of Statistics

Example

Inquiry question: Is First Nations identity represented in Australian identity?

To evaluate this issue, you need to assess different types of sources:

- statements from First Nations leaders (perspective from First Nations peoples)
- government policies on reconciliation and recognition
- public opinions from social cohesion reports.

Each source has different levels of reliability and potential bias.

How to evaluate bias and reliability in sources

When analysing sources, you can ask the following questions:

1. Who wrote this?
   - Was it created by the government, an academic, an activist group or a journalist?
   - Does the author have a particular agenda or motivation?
   - Are they an expert in the field, or are they expressing a personal opinion?
2. What is their perspective?
   - Every source is influenced by the author's background, values and beliefs.
   - Government sources may present official policies in a way that highlights achievements while downplaying ongoing issues.
   - Activist groups may focus on problems that still exist and argue that more action is needed.
   - First Nations leaders may provide first-hand perspectives, but different individuals and communities may have varying views on identity and representation.
3. Is the information current?
   - Policies and public attitudes change over time, so older sources may not reflect the current situation.
   - Checking publication dates helps determine if information is still relevant.

Personal bias

Even when evaluating sources objectively, you must recognise your own personal bias.

- Background and experiences: Someone with strong connections to First Nations communities may be more understanding to First Nations perspectives, while someone without personal experience may struggle to fully appreciate the issue.
- Preconceived beliefs: Someone who already believes that First Nations identity is not represented in Australia may only focus on evidence that supports their view and ignore sources that suggest otherwise (this is called confirmation bias).
- Choice of sources: The selection of sources influences the conclusion. For example, using only government reports on a land management issue without First Nations perspectives may not give a balanced view.

Example

Source type	Strengths	Potential biases and limitations
First Nations leader statement	First-hand perspective from a First Nations person. Represents lived experience.	May focus on a specific viewpoint within First Nations communities. Different leaders may have different opinions.
Government policy on First Nations recognition	Official stance of Australia's legal and political system. Shows what laws or policies are in place.	May be written to make the government look successful in addressing issues, downplaying criticisms.
Public opinion poll on First Nations identity	Reflects the feelings of a broad section of society. Can show trends in changing attitudes.	People's opinions can be influenced by media, misinformation or lack of knowledge. Some voices may be overrepresented or underrepresented.

Evaluating

Evaluating information is an essential skill for understanding government decisions, foreign policy and international relations. By developing this skill, you can assess key ideas such as Australia's role in the Asia–Pacific region, determine the reliability of sources and form well-supported conclusions about how Australia engages with the world.

1 I can identify data relevant to a question

Not all information is useful for answering a question. This skill helps you choose relevant data from sources such as government reports, statistics and expert analysis. Being selective about data ensures you focus only on what answers the question.

Example

Inquiry question: How does Australia support Pacific nations through foreign aid?

Relevant data includes:

- the total amount of aid Australia gives to Pacific nations
- specific projects funded, such as infrastructure, education and disaster relief
- statements from the Department of Foreign Affairs and Trade (DFAT) about aid priorities.

Irrelevant data might include:

- Australia's domestic welfare policies (which are not related to international aid)
- military spending that is unrelated to aid programs.

2 I can describe different interpretations

The same information can be interpreted differently. Recognising multiple perspectives helps you understand debates on government policies. Source 3 shows an example of multiple perspectives on an issue.

A news article might say:

'Pacific nations argue that Australian aid focuses too much on economic interests and not enough on addressing climate change, their biggest concern.'

A government report might say:

'Australia is the largest aid donor to the Pacific and plays a key role in economic development and climate resilience.'

Is Australia a good partner to Pacific nations?

Different interpretations:

- Positive view: 'Australia's aid demonstrates strong regional leadership and a commitment to stability in the Pacific.'
- Critical view: 'Australia's aid priorities sometimes favour its own economic and security interests over the needs of Pacific nations.'

Source 3: Mind map examining multiple perspectives on an issue

3 I can write evidence-based conclusions

Evidence-based conclusions are supported by facts, rather than opinions or assumptions. A strong conclusion summarises key findings and is backed by data.

Example

Inquiry question: How does Australia contribute to regional security through ASEAN?

Evidence

- Australia has been a dialogue partner of ASEAN (Association of Southeast Asian Nations) since 1974.
- It supports counter-terrorism, cybersecurity and maritime security programs.
- It participates in joint military training and disaster response initiatives.

Conclusion

Australia plays a key role in strengthening security in the Asia–Pacific region by working with ASEAN on counter-terrorism and disaster response. While this strengthens regional partnerships, some critics argue that Australia should also prioritise human rights and environmental issues in its ASEAN engagement.

4 I can analyse the reliability of information

Not all sources are reliable. Being critical of sources helps avoid misinformation. Analysing credibility involves checking:

- Who wrote it? (Government, academic, media, social media?)
- Is it recent? (Outdated data can be misleading.)
- Does it present bias? (Does the author have a particular agenda?)

Example

Inquiry question: How does Australia's trade relationship with China impact diplomacy?

Sources:

- Australian Government website: highlights benefits of trade with China, such as economic growth.
- Independent think tank report: examines both positive and negative aspects, such as trade disputes and political tensions.
- Social media post: claims 'Australia is too dependent on China', but provides no data.

Which source is most reliable?

- The think tank report is likely the most balanced.
- The government website may be reliable but could be biased in promoting only positive aspects.
- The social media post lacks evidence and should be fact-checked.

5 I can evaluate how institutions enhance democratic values and participation

Democratic institutions (such as parliaments, courts and foreign affairs agencies) help uphold Australia's role in global diplomacy and regional stability. Evaluating them means assessing how well they support democratic values.

Example

Inquiry question: How does Australia support democratic values through the United Nations (UN)?

Australia's contributions:

- Human Rights Council: advocates for freedom of speech and gender equality
- UN peacekeeping missions: sends personnel to help stabilise conflict zones
- Climate agreements: signs global agreements, but faces criticism for domestic policies.

'Australia plays an active role in the UN by promoting democratic values and human rights. However, its global leadership is sometimes questioned due to its environmental policies and stance on refugee issues.'

Participating

Participation in civics and citizenship involves actively engaging in democratic decision-making, such as reaching consensus, voting and contributing to civic discussions. It means taking part in processes that shape laws, policies and community decisions at the local, state and national levels.

Participation can include:

- voting in elections to choose representatives
- engaging in discussions and debates about civic issues
- reaching consensus through collaboration and compromise
- taking action on community concerns, such as signing petitions or attending public meetings.

By participating, you can help shape society and influence decisions that impact your life and the wider community.

1 I can identify outcomes

Identifying outcomes means understanding how democratic participation – such as reaching consensus and voting – affects decision-making on civic issues. This involves recognising the results of different methods of civic engagement at local, state and national levels.

Example

Inquiry question: How has social media influenced public attitudes towards multiculturalism in Australia?

Outcomes of social media influence:

- ✓ Positive: platforms like TikTok and Instagram celebrate multicultural festivals (e.g. Lunar New Year, Diwali), increasing public awareness of cultural diversity.
- ✓ Positive: campaigns like #RacismNotWelcome highlight discrimination and promote inclusion.
- ✗ Negative: misinformation spreads quickly, reinforcing stereotypes and fuelling division.
- ✗ Negative: some online platforms allow the spread of hate speech and extremist views.

By identifying these outcomes, you can assess whether social media is helping or harming attitudes towards diversity.

2 I can describe a strategy to achieve outcomes

A strategy is a planned action to influence attitudes or behaviours. Describing a strategy involves explaining how a media campaign or initiative works. By describing the impact, you can begin to determine whether a strategy is truly effective or needs improvement.

Example

Inquiry question: How can media platforms help prevent misinformation about migrants and refugees?

Strategy used:

- Fact-checking partnerships: Facebook works with fact-checkers to flag false posts.
- Educational content: NGOs and government agencies share real stories of migrants to combat stereotypes.
- Community guidelines and moderation: social media companies remove hate speech and misinformation.

Why this strategy?

- ✓ Helps people identify and reject false information.
- ✓ Encourages more positive and fact-based discussions about migration.
- ✓ Reduces online harassment and hate speech.

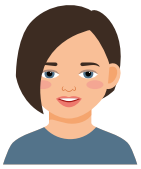
3 I can discuss the impact of a strategy

The impact of a strategy is measured by how much it changes attitudes or behaviour.

Does positive social media representation change attitudes towards diverse communities?

There was a range of positive impacts:

- ✓ There is increased visibility of diverse voices and stories in the media.
- ✓ More young Australians are engaging with multicultural content.
- ✓ There are reports of lower levels of discrimination in online spaces.



There was a range of challenges:

- ✗ Some users still face online hate and cyberbullying.
- ✗ Not all platforms enforce community guidelines effectively.

4 I can design strategies to achieve outcomes

Designing a strategy means developing a plan to respond to an issue and its effects. You need to think about what has already happened, what needs to change and how to make that change happen. A strong strategy is clear, realistic and based on good information, not just opinions.

When you design a strategy, ask yourself:

- What is the issue I'm trying to fix?
- What has already happened because of this issue?
- Who is affected, and what do they need?
- What actions will actually make a difference?
- How will I know if my strategy is working?

Example

Inquiry question: How can media better represent diverse identities in Australia?

Proposed strategy:

- diversity quotas in TV, film and newsrooms to ensure different communities are represented
- public campaigns encouraging brands and influencers to feature diverse voices
- educational programs teaching media literacy in schools to help students spot bias
- government policies that support diverse and inclusive media content.

Expected outcomes:

- greater representation of different cultural backgrounds in media
- reduction in harmful stereotypes and biases
- more inclusive content reflecting diversity.

5 I can evaluate the strategies used to make decisions

Evaluating strategies means assessing their effectiveness, strengths and weaknesses.

Example

Inquiry question: Has TikTok successfully reduced racist content and promoted diversity?

Key strategies used:

- Banning hate speech: TikTok removes racist and harmful content.
- Promoting diverse creators: TikTok's algorithm highlights content from minority voices.
- Collaborating with advocacy groups: groups advise TikTok on anti-racism policies.

Evaluation:

- ✓ Many users feel safer and more included.
- ✓ Positive campaigns like #BlackVoices and #IndigenousTok have increased awareness.
- ✗ Some racist content still slips through moderation.
- ✗ Algorithm bias may still exist, limiting exposure for minority voices.

While TikTok has taken important steps to reduce racism and promote diversity, there is still work to be done in improving content moderation and addressing bias.

Communicating ideas

Communication is a key part of being an active citizen. Whether you are discussing a legal issue, debating a civic topic or analysing political decisions, how you communicate your ideas matters. It is important to be able to describe, reflect, compare, explain and construct arguments.

1 I can describe civics and citizenship issues

Being able to describe civics and citizenship issues means explaining what a legal or political issue is, who it affects and why it matters. A good description is clear, factual and based on reliable sources.

Example

What are the key differences between criminal and civil law in Australia?

- Criminal law deals with offences against society (such as theft, assault or murder). The government prosecutes the accused, and punishments can include fines, community service or imprisonment.
- Civil law deals with disputes between individuals or organisations (such as contract disputes, property damage or defamation). The goal is usually compensation, not punishment.

2 I can reflect on my own and others' perspectives

Reflecting on perspectives means thinking about how different people see the same issue. It helps you understand why people have different views and how your own experiences shape your opinions. Reflecting on these perspectives helps you see the bigger picture, avoid bias (see page 498) and engage in more informed discussions.

Inquiry question: Should Aboriginal and Torres Strait Islander customary law be recognised alongside Australian law?

I think it's important to recognise customary law because it respects Indigenous traditions and allows First Nations peoples to have a justice system that reflects their cultural values.

I think some Indigenous leaders argue that customary law helps resolve conflicts in culturally appropriate ways.

I think others worry that it could conflict with national laws, especially in cases involving human rights.

Some legal experts believe that elements of customary law should be included in sentencing decisions, but within the framework of Australian law.

3 I can compare different methods of communication

Different legal and civic issues are communicated in different ways – some formal, some informal. Comparing these methods helps us understand how information is shared, who it reaches and whether it is effective.

Example

Inquiry question: How do courts and the media communicate legal issues differently?

Method of communi-cation	Strengths	Weaknesses
Court judgment (official legal document)	Provides detailed, factual and legally accurate information	Uses technical legal language that may be hard to understand
News article	Translates legal language into simpler terms for the public	May focus on dramatic details instead of facts, leading to bias
Social media posts	Quick and easy to share Can spread awareness about legal issues	Often lacks full context Can spread misinformation

A high-profile criminal trial may be explained in a judge's sentencing remarks, summarised in a news article and debated on X. Each format influences public perception differently.

4 I can explain different perspectives using data

Instead of relying on opinions, strong communication uses facts to explain why different people see an issue in different ways. By using real data, you can explain perspectives fairly, without bias, and let the audience draw their own conclusions.

Example

Controversial topic: Should Australia introduce tougher penalties for youth offenders?

One perspective: Harsher penalties reduce crime.
Data:

- Data from government crime reports shows that increasing police presence has lowered youth crime rates in some areas.
- Surveys indicate that many Australians believe tougher sentences deter crime.

Another perspective: Rehabilitation is more effective than punishment.
Data:

- Studies show that countries focusing on rehabilitation (like Norway) have lower reoffending rates.
- Youth diversion programs in Australia have reduced repeat offences in some communities.

5 I can use sources to construct evidence-based arguments

An evidence-based argument uses facts, legal cases and statistics to support a claim. It is not just about stating an opinion – it is about proving your point with reliable information. By using reliable sources, you can create a convincing, fact-based argument that can be used in debates, essays or civic discussions.

Example

Inquiry question: Should Australia raise the age of criminal responsibility from 10 to 14?

Claim: 'Australia should raise the age of criminal responsibility to 14 because scientific and legal evidence shows that young children lack the capacity for full criminal responsibility.'
Evidence:

- Medical research: Studies show that children's brains are still developing, affecting decision-making.
- International law: The UN recommends 14 as the minimum age for criminal responsibility.
- Legal precedent: Countries like Germany and Sweden have already raised their criminal responsibility age.

Economics and business

Economic literacy

EB1

WHAT IS ECONOMIC DECISION-MAKING? 508

HOW DO PRODUCERS AND CONSUMERS INTERACT IN MARKETS? 510

WHAT IS THE IMPACT OF SUPPLY AND DEMAND? 512

WHAT IS THE ROLE OF GOVERNMENTS IN MARKETS? 514

EB1.0

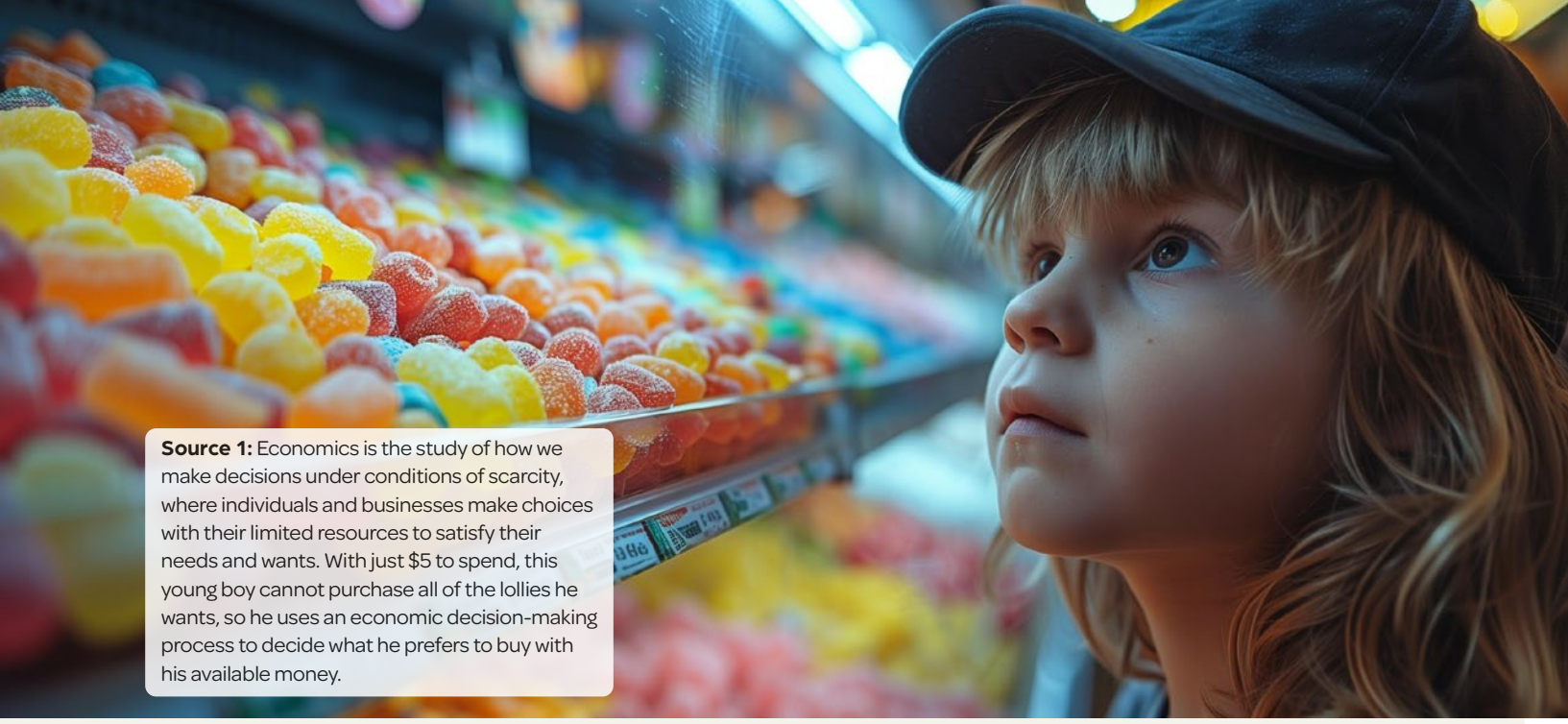
How can I study economic literacy?

Develop an appreciation of economic decision-making through understanding economic concepts such as scarcity and opportunity cost. Learn about markets and how Australia's free market is driven by the forces of supply and demand , consumer sovereignty and government actions to protect the economy.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Economic decision-making	Supply and demand	Investigating
5	I can examine and evaluate economic decisions.	I can analyse the factors that influence pricing.	I can evaluate information from a range of sources.
4	I can explain how scarcity influences perceived value.	I can explain the concept of consumer sovereignty.	I can sort and represent data and information.
3	I can explain the principles of scarcity, opportunity cost and incentives.	I can explain how supply and demand impact the price of products and services.	I can gather information from secondary sources.
2	I can describe how economic decisions are made.	I can describe how consumers and producers interact.	I can plan an investigation.
1	I can identify key economic ideas.	I can identify key economic models.	I can ask open-ended questions.
	Knowledge		



Source 1: Economics is the study of how we make decisions under conditions of scarcity, where individuals and businesses make choices with their limited resources to satisfy their needs and wants. With just $5 to spend, this young boy cannot purchase all of the lollies he wants, so he uses an economic decision-making process to decide what he prefers to buy with his available money.

Interpreting	Decision-making	Communicating ideas	Steps in skills progression
I can evaluate data and data sources for authenticity and validity.	I can draw conclusions and justify responses.	I can use sources to construct evidence-based arguments.	5
I can predict change to patterns.	I can evaluate responses using cost–benefit analysis or other criteria.	I can explain different perspectives using data.	4
I can explain cause-and-effect relationships.	I can develop responses to economic and business issues.	I can compare different methods of communication.	3
I can describe trends.	I can describe the criteria to respond to an issue.	I can reflect on my own and others' perspectives.	2
I can read tabulated data and graphs.	I can identify an economic and business issue.	I can describe economic and business issues.	1

Skills

What is economic decision-making?

Scarcity obliges individuals and businesses to make careful economic decisions based on what people prefer to buy with available resources while understanding the opportunity cost of what they give up to buy it.

Scarcity

Economics is the study of how we make decisions under conditions of **scarcity**, where individuals and businesses make choices with their limited **resources** to satisfy their needs and wants. Scarcity means that the **demand** for a good or service is greater than its availability. Scarcity limits the choices available to **consumers** in an economy, so you can't purchase everything you want. You must decide what you need and what you prefer to buy with your available money.

Countries have different amounts of **natural resources** (i.e. coal, timber), **labour resources** (i.e. workers) and **capital resources** (i.e. machinery, power supply) available to produce **goods** and **services**. Scarce natural resources such as diamonds and gold are more valuable because of the shortage of availability. Sellers of scarce goods and services can set higher prices because the demand for their product is greater than the availability.

Source 1: Resources that are scarce, such as diamonds, are priced highly because demand for the good is much higher than its availability.

Opportunity cost

Economic decision-making involves making the best choices with limited resources. For example, if a person has $30 000, they could decide to go on an overseas holiday or purchase a car — but not both. With limited resources, we need to weigh up the **costs and benefits** of the options open to us and choose the one that provides the best outcome. If you are considering whether or not to buy a car, you'll need to take into account the cost of the car, fuel and maintenance against the benefits of convenience and flexibility that a car provides. By deciding to spend the available money on an overseas holiday, you are forgoing the chance to buy a car. **Opportunity cost** refers to what you have to give up to buy what you want — in this case, a car.

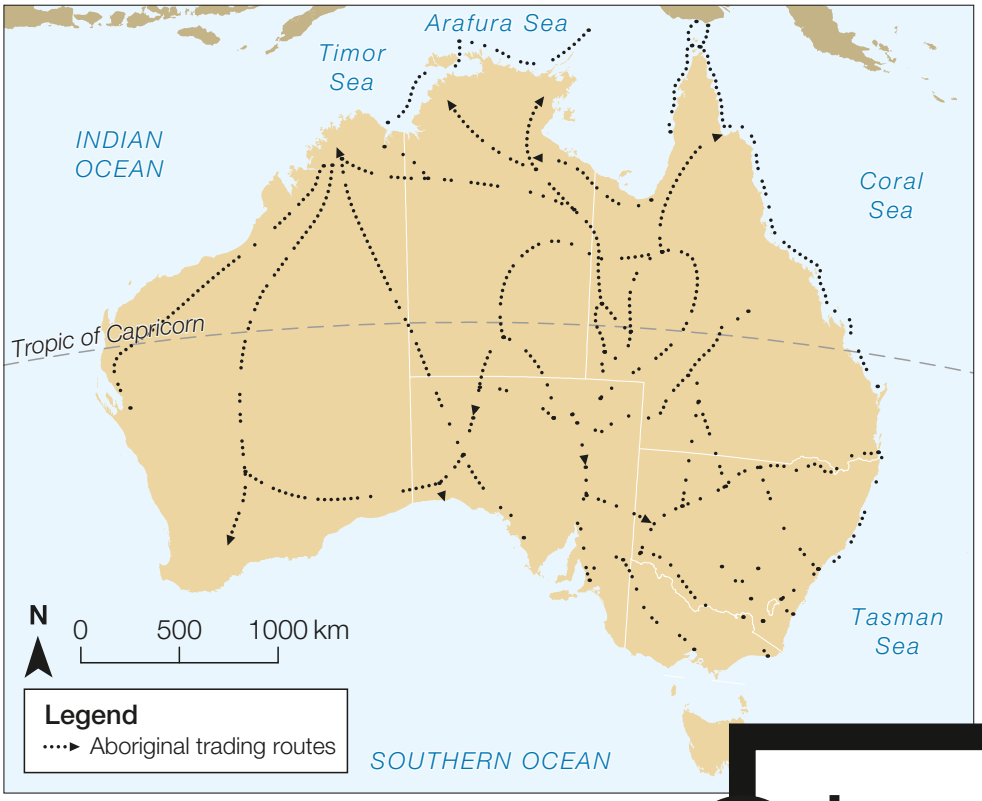
Many younger Australians and lower income households are spending up to one-quarter of their net income on groceries, according to responses so far to the consumer survey which is part of the ACCC's Supermarkets Inquiry.

Households have also told the ACCC that to reduce their grocery bills they are spending more time shopping around for savings, substituting fresh food with frozen, and cutting back on non-essential items.

Some people have also reported skipping meals or sacrificing meals to feed children properly.

Source 2: The opportunity cost of spending more money on rising grocery prices is reducing food purchases, substituting foods and skipping meals according to the Australian Competition and Consumer Commission (ACCC) survey, 28 March 2024.

Map of First Nations Peoples' trade routes



Source 2: This is an image of the extensive trade routes across the Australian continent used by First Nations Peoples.

Source: Matilda Education Australia

Economic decisions of first Australians

First Nations Peoples first came to Australia more than 60 000 years ago. As they moved across the vast Australian continent, they discovered new landscapes with different plants and animals and different resources for food.

First Nations people made economic decisions based on the availability of resources, which changed with the seasons. They harvested food sustainably to ensure a constant and reliable supply of resources. This ensured that available resources did not become scarce.

First Nations Peoples used **seasonal migration** to care for Country and allow regeneration. The economic decision to constantly move meant that many First Nations people had multiple homes which they would occupy for various times of the year.

First Nations people created extensive **trade** networks across the Australian continent to allow for the trade and exchange of scarce resources. Greenstone, mined in north-western Queensland and Central Victoria, was in demand to make stone axes and was transported and exchanged throughout the trade network.

Learning ladder EB1.1

Economic decision-making

1. Identify the meaning of scarcity and opportunity cost.
2. Describe the impact on the scarcity of resources from moving around Country.
3. Source 2: Explain the opportunity cost of rising grocery prices for many young Australians and low income earners.
4. Source 1: Explain how scarcity accounts for the high price of diamonds.
5. Evaluate the decision to buy rather than rent a house.

Interpreting

1. Based on the survey data provided by the ACCC, how could you interpret the impact of rising grocery prices on lower-income households?
2. What trend can you identify in the way First Nations people managed the scarcity of resources over time?
3. What is the impact of rising grocery prices on households?
4. If the trend of increasing grocery prices continues, how might the spending habits of lower-income households change in the future?
5. How can you assess the reliability of the ACCC as a source of information?

How do producers and consumers interact in markets?

Free markets such as Australia operate on the principle that demand for goods and services is driven by customers, who determine the types of goods and services required and influence the price paid in a competitive market.

Markets

Producers are individuals or businesses that create or provide a certain good or service. **Consumers** use money to buy goods and services. **Markets** are formed when producers make and sell goods and services to consumers. Producers depend on consumers to buy goods and services from them. Consumers depend on producers to provide the goods and services that they need and want.

Australia has a **free economy** (also known as a **market economy**) where the availability and pricing of goods and services is driven by **consumer sovereignty**, the principle that consumers determine demand for goods and services through their purchasing decisions. In a free economy, businesses produce and sell goods and services that consumers want to buy. To be successful, producers must compete with other businesses in their industry to deliver goods and services that consumers want.

Different markets

Retail market

The best-known market where consumers and producers come together is the retail market. This is where customers visit online or physical locations such as large shopping centres or local shops such as supermarkets. Online shopping in Australia grew by an average of 13.8 per cent per year between 2018 and 2023, with 80 per cent of Australian households shopping online in 2023.

Labour market

The labour market is where employees sell their labour to employers who wish to buy the skills and effort of the best employees. Employers let potential employees know the types of jobs available through advertisements. Today, nearly all advertisements for jobs take place through online recruitment sites such as SEEK, where more than 150 000 jobs are posted each month.

Financial market

A financial market is a marketplace for money. The price of lending or borrowing money is known as **interest**. If you deposit $100 into a bank at an interest rate of 2 per cent per annum, the bank will pay you $2 in interest after 12 months.

If you wish to borrow money to buy a car or a house, banks and other financial institutions will lend out money that has been deposited with them at a higher rate of interest. Like other markets, the seller (lender) charges the highest interest they can and the buyer (borrower) wants the lowest interest rate possible.

Price of CBA shares from April 2020 to April 2021

Source 2: Share price of Commonwealth Bank of Australia (CBA) from April 2020 to April 2021

Source: CBA

Stock market

The **stock market** or **share market** is where **shares** in companies are bought and sold. A share is one unit of ownership in a company. Australia has a national share market – the Australian Securities Exchange (ASX). When the company's share price changes, the value of the shareholder's investment also goes up or down. When the company makes a profit, some of it can be distributed to shareholders as extra shares or a cash payment known as a **dividend**.

Source 1: In the grocery sector of the retail market, the cost of buying groceries at Aldi is 25 per cent less than at Woolworths and Coles, based on a survey by Choice in 2024. Customer sovereignty has seen customer numbers and visits to Aldi stores grow as they switch some or all of their grocery spend from other retailers to Aldi.

Learning ladder EB1.2

Supply and demand

1. **a** What is customer sovereignty?
   b Identify what is bought and sold in a labour market.
2. Describe how consumers and producers interact in a free market.
3. **a** Source 1: Explain how Aldi's low price strategy has impacted customer purchasing in the grocery sector of the retail market.
   b Why is competition important in controlling prices in a market?
4. Explain the concept of customer sovereignty. Can you think of situations where customers are not in a powerful position?
5. Source 2: Carefully examine the share price of the Commonwealth Bank. Research and analyse the range of factors that led to the large drop in the share price in April 2020.

Decision-making

1. What is the main issue facing traditional retailers in Australia as online shopping continues to grow?
2. What factors should businesses consider when deciding whether to transition to an online sales model?
3. What strategy might a small business use to compete with larger online retailers in the changing retail market?
4. If you were a producer in the labour market, how could you make your job advertisement stand out to attract the best employees?
5. Should someone save their money in a safe place with low interest, or should they try to make more money by investing in riskier options? Explain your answer.

What is the impact of supply and demand?

Supply and demand are forces in the market that greatly influence the price of goods and services. An increase in demand or a decrease in supply will generally put upward pressure on prices.

Supply and demand

When winter hits Australia's southern states, the demand for holidays in the sunny north increases. When war breaks out in the Middle East and threatens the supply of oil, the price of petrol in Australia soars. **Supply** and **demand** are market forces that are important in our economy. They determine how much of each good is produced and at what price it is sold to consumers.

Demand

Demand in economics is the consumer's desire and ability to buy a good or service. **Price** is a major factor affecting demand. If the price goes up, consumers will buy less. If the price goes down, consumers will buy more.

For example, if mobile phones were sold at half price, there would be a rush to buy them before stocks ran out. If mobile phones doubled in price, very few would be sold. The law of demand states that at a higher price consumers will demand fewer goods.

There are some examples where consumer demand does not determine the price and distribution of goods and services. During World War II, Prime Minister John Curtin introduced rationing to ensure that everyone received a basic amount of essential supplies such as petrol, clothing, tea, sugar, butter and meat. People were issued ration books with coupons that gave the holder permission to buy a certain amount of a good.

Supply

Supply is the amount of a good or service that is available to consumers. Producers choose to make a good or supply a service that is profitable for them. Price is a major factor affecting supply. If the price is high, it is more profitable for producers and they are more willing to increase the quantity available. If the price is low, producers will reduce the quantity. For example, if the price of bananas is high, banana growers will increase the quantity of bananas they produce. The law of supply states that the quantity of a good rises when the price of the good is high.

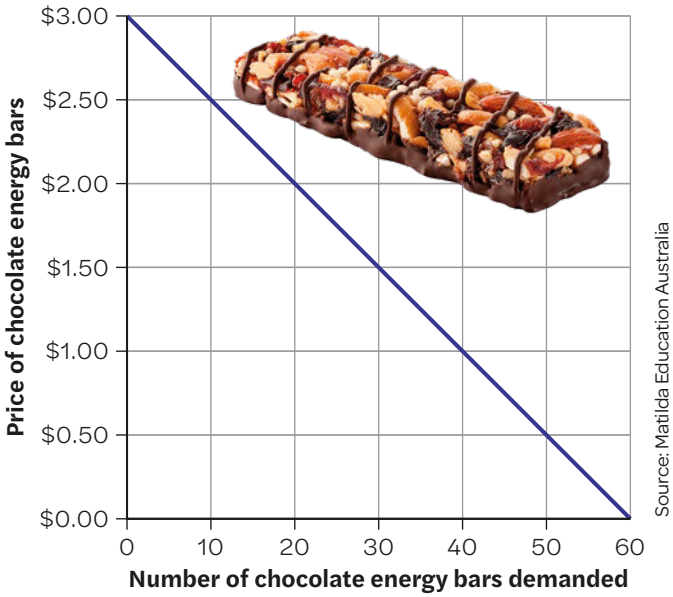
A shortage in supply occurs when the demand for a good or service is higher than the supply. This pushes the price of the good or service higher. A surplus occurs when the demand for a good or service is less than the supply. This pushes the price of the good or service lower.

Source 1: Ration tickets during World War II controlled the demand for essential items to ensure that everyone could access goods.

Source 2: In March 2021 the *Ever Given* container ship ran aground and was stranded across the Suez Canal, stopping all traffic in both directions for almost a week. About 12 per cent of all trade in the world travels through the Suez Canal, including around 1 million barrels of oil. Oil prices immediately rose by more than 3 per cent due to an oil shortage as more than 30 oil tankers waited on either side of the canal.

In 2011, Cyclone Yasi destroyed 75 per cent of Australia's banana crop, causing a sudden loss of supply. The price of bananas tripled as the demand greatly outstripped the supply of bananas from Australian suppliers.

Demand and price for chocolate energy bars



Source 3: Demand and price for chocolate energy bars in a supermarket

Learning ladder EB1.3

Supply and demand

1. Identify the laws of demand and supply.
2. Source 3: Describe the trend shown on the graph to illustrate the link between demand and price.
3. Source 2: Explain how the grounding of the *Ever Given* ship in the Suez Canal led to a global rise in the price of oil.
4. Source 1: Explain how the impact of demand for goods was lessened during World War II. Why do you think this action was taken?
5. Analyse a range of supply and demand factors impacting the price of a good or service.

Communicating ideas

1. Explain the concept of supply and demand and its impact on prices using the example of bananas during Cyclone Yasi.
2. How might a consumer's perspective differ from a producer's perspective when it comes to the rising price of goods due to a supply shortage?
3. If you were explaining the impact of supply and demand on banana prices, would you choose a written report or a visual presentation? Why?
4. Using the example of Cyclone Yasi, how could you explain the impact of a supply shortage on both consumers (higher prices) and producers (increased profits) using data?
5. How could you use the example of price changes in bananas after Cyclone Yasi to argue the importance of supply and demand in determining market prices?

What is the role of governments in markets?

Supply and demand are forces in the market that greatly influence the price of goods and services. An increase in demand or a decrease in supply will generally put upward pressure on prices.

Different types of economies

Australia, the United States, the United Kingdom and Japan are all examples of market economies. In these countries the availability and price of goods and services is driven by demand from consumers. There is little government intervention as market economies assume that the forces of supply and demand will deliver a healthy economy.

China, Russia, Iran and North Korea are all examples of **command economies**. In these countries the government controls nearly all of the businesses and directs the production of goods. Countries such as China now include elements of both market and command economies.

Government intervention in Australia

Market economies such as Australia do have some government intervention to provide economic stability. Individuals and businesses pay money to the government in the form of **taxes** and **rates**. The government uses this money to provide welfare payments such as unemployment benefits and services such as education and health.

Governments stimulate an economy by spending money on infrastructure projects such as building schools, hospitals and roads. Governments also use **economic incentives** to encourage people to accomplish something. **Grants** and **rebates** are economic incentives for people to spend money. Government grants are payments to fund a project and rebates allow consumers to recover some of the cost of a good or service after purchase.

Governments can also slow an economy by introducing **economic disincentives** such as increasing the levels of taxation, leaving consumers with less money to spend on goods and services, and businesses with less money to expand and employ workers.

Protecting economies in bad times

Governments take action to protect the economy in bad times, such as when the country is hit by a major natural or economic disaster.

The COVID-19 pandemic between 2020 and 2023 forced governments around the world to take action to protect their people and economies. Economies around the world shrank by 4.4 per cent due to the COVID-19 pandemic, resulting in many countries being

Source 1: State and federal governments assist people buying or building their first home by offering First Home Buyer cash grants. They also offer reductions in the taxes involved in purchasing a home, such as stamp duty. In addition, incentives such as solar rebates are available from governments to encourage people to use renewable resources and reduce the reliance on energy resources.

Source 2: Qantas planes lay idle on the tarmac as overseas flights from Australia stopped during the global COVID-19 pandemic. Many people in the travel industry were unable to work and were kept going by the JobKeeper payments offered by the Federal Government.

pushed into **recession**. Central banks in many countries, including Australia's Reserve Bank, reduced the cost of borrowing money by slashing **interest rates**. By making it cheaper to borrow money, people were encouraged to spend money to help boost the economy.

Unemployment rates around the world increased and governments moved to introduce job retention schemes as economies stalled. The Australian **Federal Government** introduced the JobKeeper program at a cost of $90 billion to help keep 3.5 million Australians in work during the pandemic. It was the largest government spending program in history.

Learning ladder EB1.4

Economic decision-making

1. Identify the difference between a market economy and a command economy.
2. Source 1: Describe the economic incentives provided by governments that encouraged many homebuyers to build their homes in this new housing estate.
3. Explain why governments use economic incentives and economic disincentives in market economies.
4. Source 2: Why was Qantas faced with a surplus rather than a scarcity of planes and staff during the COVID-19 pandemic?
5. Examine and evaluate why governments introduce large infrastructure projects during an economic downturn.

Investigating

1. How do different types of economies, such as market and command economies, influence the role of government in the economy?
2. If you were to investigate the role of government intervention during the COVID-19 pandemic, what key factors would you research and how would you collect data?
3. What sources would you use to understand the economic impact of the JobKeeper program during the pandemic?
4. How could you present data on government spending during the pandemic (e.g., the JobKeeper program) to show its impact on unemployment rates?
5. How would you evaluate the effectiveness of government economic incentives in helping the Australian economy recover during the pandemic?

How do I conduct an investigation?

Now that you've finished the chapter, it is time to conduct your own investigation on economics and business. Throughout the chapter you have developed knowledge and understanding of financial literacy. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own investigation into contemporary issues!

An investigation gives you the opportunity to be an active participant in contemporary economics and business issues: investigating, interpreting and communicating your findings.

The chapter has covered the principles and features of economic literacy and how it equips you with skills to make good decisions. What would you like to know more about?

- What is economic decision-making?, page 508
- How do producers and consumers interact in markets?, page 510
- What is the impact of supply and demand?, page 512
- What is the role of governments in markets?, page 514

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you formulate your own research ideas. Once you have worked through this process, you are ready to start your investigation.

Refer to pages 532–4 of the How-to chapter for a step-by-step guide to this process.

Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An investigation is a great opportunity to expand your knowledge and attempt new skills. When planning your investigation, consider how you can gather and evaluate data from a range of sources and use data to construct a strong argument. Use the How-to chapter to support your planning and research.

Consumer and financial literacy

EB2

HOW CAN YOU BECOME A SMART ONLINE SHOPPER? 522

WHAT ARE YOUR RIGHTS AND RESPONSIBILITIES AS A CONSUMER? 520

HOW CAN YOU ACHIEVE FINANCIAL GOALS? 526

EB2.0

How can I study consumer and financial literacy?

Learn about the importance of financial planning and taxation and understand your rights as a consumer and the need to shop safely by showing awareness of scams.

Learning ladder

The Learning ladder lists the knowledge and skills you will learn. Each has five levels of difficulty. Learning skills at the bottom of the ladder will help you to master the skills at the top of the ladder.

Steps in knowledge progression	Rights and responsibilities	Smart consumer	Tax	Financial planning
5	I can evaluate how businesses meet their responsibilities.	I can evaluate 'smart consumer' strategies.	I can lodge a tax return and calculate tax debt.	I can evaluate different strategies to achieve financial objectives.
4	I can explain the responsibilities of businesses for products and services.	I can explain how to avoid financial scams.	I can explain how tax payments are calculated.	I can explain the importance of investment.
3	I can explain rights and responsibilities.	I can explain how to use my consumer rights.	I can explain why Australians pay tax.	I can explain how to plan my finances.
2	I can describe rights and responsibilities.	I can describe financial scams and how to avoid them.	I can describe how and when young Australians pay tax.	I can describe financial planning.
1	I can list rights and responsibilities.	I can list e-commerce safety ideas.	I can identify where tax money comes from.	I can define finance vocabulary.

Knowledge

Source 1: Buying a house usually requires a person to take out a mortgage, which is a type of secured loan that can be at a fixed interest rate or variable interest rate.

Investigating	Interpreting	Decision-making	Communicating ideas	Steps in skills progression
I can evaluate information from a range of sources.	I can evaluate data and data sources for authenticity and validity.	I can draw conclusions and justify responses.	I can use sources to construct evidence-based arguments.	5
I can sort and represent data and information.	I can predict change to patterns.	I can evaluate responses using cost–benefit analysis or other criteria.	I can explain different perspectives using data.	4
I can gather information from secondary sources.	I can explain cause-and-effect relationships.	I can develop responses to economic and business issues.	I can compare different methods of communication.	3
I can plan an investigation.	I can describe trends.	I can describe the criteria to respond to an issue.	I can reflect on my own and others' perspectives.	2
I can ask open-ended questions.	I can read tabulated data and graphs.	I can identify an economic and business issue.	I can describe economic and business issues.	1

Skills

What are your rights and responsibilities as a consumer?

Consumer protection laws ensure businesses remain accountable and safeguard the interests of consumers. Understanding consumer rights and responsibilities is important for both consumers and businesses.

Consumer rights

Australian Consumer Law (ACL) provides automatic consumer guarantees when you buy goods and services:

1 **The right to safety:** products and services offered to consumers must be safe for their intended use. Businesses have an important responsibility to make sure that their products do not pose risks to users. If a product or service is found to be unsafe, consumers are entitled to compensation, a replacement or a refund.

Source 1: The burping Garfield toy provided with Hungry Jack's children's meals was recalled by Product Safety Australia in 2024. The toy posed a risk of choking, injury or death if young children accessed and swallowed the battery.

2 **The right to be informed:** businesses have a responsibility to provide complete and accurate information to consumers about the features, price, and terms and conditions of their goods and services. Deceptive or hidden information is illegal and is monitored at a national level by the Australian Competition and Consumer Commission (ACCC) and by Consumer Affairs Victoria at a state level.

3 **The right to guarantees:** when you buy goods, the business guarantees the product will work correctly and continue to perform as promised. When you pay for a service, the business guarantees to provide the service agreed on in a reasonable time.

If the good or service you have paid for does not meet these consumer guarantees, the purchaser has the right to ask for a repair, replacement or refund. It is important to keep your receipt as proof of purchase. Exceptions to the **customer guarantee** include simply changing your mind, misusing the product, and being made aware of faults before purchasing the product.

Source 2: In 2022 Samsung was fined $14 million for misleading advertising about the water resistance of its mobile phones. Consumers who purchased the phones found that they became damaged or stopped working altogether when they were submerged in water. Hundreds of consumers complained to the Australian Competition and Consumer Commission (ACCC).

Consumer responsibilities

While Australian laws protect consumer rights, we also have our own responsibilities to uphold:

1. **Make informed choices:** it is the consumer's responsibility to research products and services by carefully reading descriptions and specifications, comparing prices and features, and reading reviews. When purchasing a product, it is important to carefully read and follow instructions for use.
2. **Understand contracts:** responsible consumers should read and understand the terms and conditions of sale, including **warranties** and return policies. Contracts and agreements for larger purchases, such as a house, need to be carefully considered, often with guidance from a specialist legal representative.
3. **Keep records:** maintaining documents such as receipts and correspondence with a business is helpful should disputes arise over a purchase or the performance of a good or the quality of service.
4. **Ethical responsibilities:** ethical consumers consider how their purchases can reduce harmful impacts on the environment and living things. We can choose to take ethical responsibility to purchase goods and services from businesses that are working to reduce negative impacts on environments, animals and people by acting sustainably and ethically. We can also consume less.

Source 3: Shopping for organic produce at a local farmers' market is an ethical choice when buying fresh produce that is grown nearby and without the use of chemicals.

Learning ladder EB2.1

Rights and responsibilities

1. List three consumer rights.
2. Source 3: Describe the ethical responsibilities of consumers.
3. Source 1: Explain why it was important to recall this toy from the market and which consumer right it represents.
4. Source 2: Explain the significance of the message the ACCC sent to Samsung and other businesses regarding the rights of consumers to be accurately informed about products and services.
5. Research a social enterprise such as Thankyou that undertakes ethical and social responsibilities as a key part of its business. Evaluate how it approaches business to achieve improved social or sustainable outcomes.

Investigating

1. Why is it important for consumers to compare prices and features before making a purchase?
2. How would you go about investigating whether a company has ethical practices before purchasing a product from them?
3. Where could you find information on the environmental impact of a product you want to buy?
4. If you compared the prices of two different products, how would you organise this information to make a fair comparison?
5. If you read both a positive and a negative review about a product, how could you evaluate which one is more reliable?

How can you become a smart online shopper?

Using online websites is a convenient way to shop by comparing prices, product information and reviews. To safely shop online, you need to be aware of scams that are used to access information such as credit card and banking details, enabling the scammers to steal from you.

Comparing products

Researching products using online search tools such as Google can help you identify the exact product you want because you can read the product information, product reviews and comments from other shoppers. You can also compare prices and deals on offer for your product.

There are product comparison websites for most products that can help you quickly compare products and prices from a wide range of businesses. However, these websites often receive **commissions** from the organisations whose products they recommend and will highlight these products in the search results. They may not list all of the available options, including products that might be better or cheaper. In 2020 iSelect was ordered to pay $8.5 million in fines for misleading customers into switching electricity providers without making them aware that a cheaper plan was available. Trivago's travel comparison site was also heavily fined after not revealing cheaper rates to its customers (Source 1).

When shopping online it is essential to consider the shipping costs, which can significantly impact the final price. Ensure you research the shipping costs and add these to the prices you are comparing. Also make sure that the price is quoted in Australian dollars. If you are purchasing a product in another currency, the cost in Australian dollars can be significantly different.

Online scams

A **scam** is when someone tricks you into providing your personal or financial information so they can steal from you. Scams work because they look and sound real. Scammers can use logos of services such as Australia Post to appear to be the real thing. The criminals behind scams create fake stories to try to collect your personal or financial information or convince you to give them money. Scammers may try to convince you that you have won a competition, you have a fine to pay or a parcel to collect, you have a problem with your computer that needs fixing or that they represent a fake charity.

The Federal Court has ordered Trivago to pay penalties of $44.7 million for making misleading representations about hotel room rates on its website and in television advertising … In January 2020, the Federal Court found that Trivago had breached the Australian Consumer Law by misleading consumers when representing that its website would quickly and easily help users identify the best deal or cheapest rates available for a given hotel.

In fact, Trivago used an algorithm which placed significant weight on which online hotel booking site paid Trivago the highest cost-per-click fee in determining which rates to highlight on its website and as a result often did not highlight the cheapest rates for consumers.

Source 1: Australian Competition and Consumer Commission, 22 April 2022

Scams can be difficult to spot, so always stop and think before acting. Never give money or personal information to someone if you are unsure. Here are some signs to watch out for from the Scamwatch website:

- **An incredible opportunity to make money.** Deals that sound too good to be true are probably fake.
- **A stranger needs help.** Scammers appeal for money by creating heartbreaking stories about people in need.
- **Being pressured to act quickly.** You may be pressed to act quickly because something bad will happen or you'll miss out.
- **Messages that have a link or attachment.** Scammers send you to fake websites to steal your information and money.
- **Asking for odd methods of payment.** Asking for payment with debit cards, iTunes cards, Bitcoin or by setting up new bank accounts are all signs of a scam.

Alarming surge in the number of teens being exploited online

Statistics released today by Westpac Bank show the number of scams reported by customers under the age of 18 has almost quadrupled since last year, and has more than doubled for those under 30.

'Scammers can use anything you post to piece information together about you – like what school or university you attend, sports you play, or suburb you live in – which they then use to form a connection with you or even impersonate you.

'Always stop and think before you post, be very cautious of anyone you've never seen in-person or spoken to on video chat before, and never give away details like your address or date of birth,' Westpac General Manager of Financial Crime & Fraud Prevention, Chris Whittingham, said.

Young Australians were also the most likely group to fall victim to buying and selling scams, Whittingham said.

'You should always conduct an independent search through your web browser to confirm if a business is legitimate before making a payment, especially if it's a brand you've never bought anything from before. Also be wary if they request payment through unusual methods like cryptocurrency.'

Source 2: Emily McPherson, 9 News, 4 September 2023

Learning ladder EB2.2

Smart consumer

1. List the advantages of online shopping.
2. Describe a range of different financial scams and the steps you can take to avoid them.
3. Outline the pros and cons of online comparison websites. Explain what independent research you can do.
4. Source 1: Explain how Trivago used deceptive tactics to encourage consumers to choose Trivago's preferred accommodation options. Why do you think the Federal Court imposed such a large fine?
5. Source 2: What type of personal information do scammers gather about you to conduct identity theft? Evaluate the best strategies to protect yourself from scammers.

Decision-making

1. What issues arise when comparison websites recommend products based on commission payments rather than the quality or suitability of the products?
2. When shopping online, what factors should you consider to make sure the website is safe and trustworthy?
3. If a website asks for payment through unusual methods like Bitcoin or gift cards, what should you do to avoid being scammed?
4. If you find a product at a good price but the website seems suspicious, what actions could you take before buying it?
5. Do you think it's safer to shop online from well-known websites or try new, unfamiliar sites? Why?

How does Australia's taxation system work?

Taxes from workers' income and the products we buy, along with taxes and duties paid by businesses, are the sources of revenue for governments to provide services for the population. Income is taxed on a sliding scale, with higher earners paying more tax.

Why do we pay taxes?

A **tax** is a compulsory payment collected by governments from individuals and businesses to pay for the costs of government services such as healthcare, education, transport and defence, as well as **pensions** to help support older people and people with a disability. The Australian Taxation Office (ATO) collects taxes for the Federal Government through **income tax**, **goods and services tax (GST)** and **excise duty** on certain goods made in Australia such as alcohol, tobacco and fuel.

A goods and services tax of 10 per cent is automatically added to the price of most goods and services sold or consumed in Australia. Businesses include the GST in the cost of their products and send it through to the ATO. GST revenue is then distributed to state governments to be used for important services such as health, education and transport. State governments in Australia also impose their own taxes, such as **payroll tax** based on salaries paid by **employers** and **land transfer duty** when you buy a property.

Responsibilities of taxpayers

All workers need a **tax file number (TFN)**, which is used as a personal reference number to identify them with the ATO. Even if you have a part-time or casual job while still at school, you will need a TFN. Your TFN stays with you for life.

Children can apply for a TFN themselves at age 13 and at age 15 they can apply for a TFN through the myGovID website, a service that makes it safer and easier to prove who you are online and links to important services such as the ATO.

Workers also need to submit an annual **tax return**. The ATO needs to know your **income** during the **financial year**, from 1 July to 30 June in the following year. This information tells them whether you need to pay extra tax or if you are entitled to receive money back through a tax refund. To submit your tax return you need:

- your tax file number
- income statements from your employer/s
- receipts for work-related **expenses** such as uniforms and tools required for the job. These can be claimed as **income tax deductions** from the tax you pay.

How is income tax calculated?

Nearly half of all Federal Government **revenue** comes from individual income taxes. Your employer will deduct the appropriate tax from each pay and send it to the ATO on your behalf. The amount of income tax you pay is based on how much you have earned throughout the financial year minus any income tax deductions you are entitled to.

Source 1: Taxes provide the revenue for governments to supply services such as hospitals, professional healthcare and disability support.

Income is taxed on a sliding scale, with higher earnings attracting a higher rate of taxation. Table 1 shows the 2024–25 income tax rates for Australians aged 18 years of age and older.

Table 1

Annual income	Tax rate on income
$0 – $18 200	Nil
$18 201 – $45 000	16c for each dollar over $18 201
$45 001 – $135 000	30c for each dollar over $45 001
$135 001 – $190 000	37c for each dollar over $135 001
$190 001 and over	45c for each $1 over $190 000

Use Table 2 to help you calculate how much tax you would pay if you earned $60 000 in the 2024–25 financial year.

1. Identify the amount of income earned in a full **tax bracket** by subtracting the lower number from the higher number; for example, in the $18 201–$45 000 bracket, the amount you earned was $26 799.
2. Multiply the amount of income earned in each tax bracket by the tax rate for that bracket to work out the tax payable in each tax bracket.
3. Add the totals of all tax brackets to work out the total amount of tax payable.

Table 2

Annual income	Tax rate	Tax payable
$18 200	× 0	= $0
$26 799	× 16c	= $4288
$15 001	× 30c	= $4500
$60 000		**= $8788**

Learning ladder EB2.3

Tax

1. Identify where taxation revenue comes from and who collects it.
2. **a** Why do we pay taxes and how is taxation revenue used?
   b Source 1: Describe how this photograph shows an example of how our taxes are used by governments.
3. Explain the steps you need to take when you begin a job and complete an annual tax return.
4. Using Tables 1 and 2, explain how the amount of tax payable for a person with an annual income of $90 000 would be worked out.
5. Pat is a carpenter who has earned $150 000 in the financial year. She spent $3500 on new tools to use only at work, which she can claim as a deduction on the tax she is liable to pay. Use this information and Tables 1 and 2 to calculate the amount of tax that Pat will pay.

Decision-making

1. What issue might occur if businesses didn't pay the required taxes to the government?
2. How might the government use the money collected from taxes to improve services like healthcare or education?
3. If you were given the task of simplifying the income tax system, how would you make it easier for everyone to understand?
4. Given the progressive nature of the Australian income tax system, would you say it is fair that people with higher incomes pay more tax? Justify your answer.

How can you achieve financial goals?

If you want to purchase a more expensive item such as a bike or gaming console, it is a good idea to develop a personal financial goal and a savings plan to help you achieve your goal, based on your budgeted income and expenses.

Setting financial goals

Many things we want take time and planning to achieve. If you really want a new bike, concert tickets, a pet or a gaming console, you need a plan to save money for the purchase.

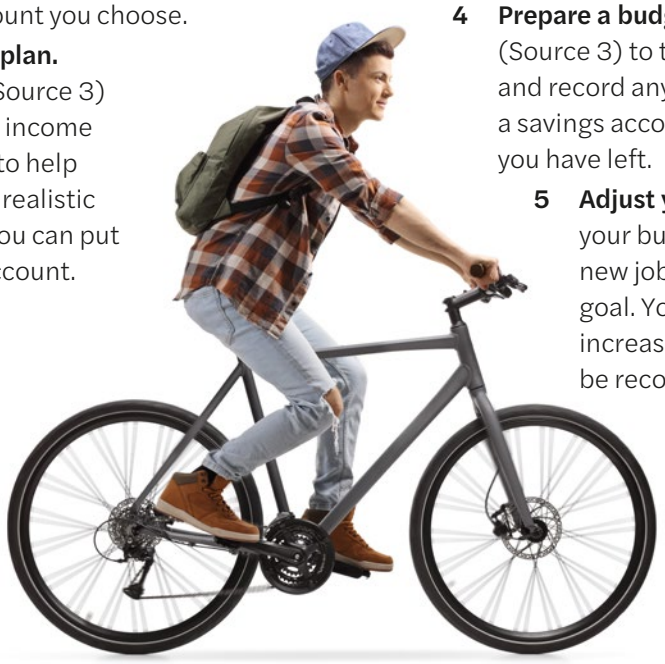
First you need to set a specific financial goal, which will be the amount of money you need in order to achieve your target. Next, you need to work out the steps to take to achieve your savings goal and estimate how long it will take. Here are some steps to help you achieve a financial goal:

1. **Estimate the total cost.** How much will your purchase cost? This is your savings goal. Think carefully about what you want. For example, would a secondhand bike be cheaper and easier to achieve than a new one?
2. **Open a savings account.** There are various bank accounts to choose from, all with different features. Banks pay interest to customers for putting their money into a savings account. Some accounts also involve fees, so make sure you understand the features of the account you choose.
3. **Organise a savings plan.** Prepare a budget (Source 3) that estimates your income and your spending to help you come up with a realistic amount of money you can put into your savings account.
4. **Monitor and adjust your savings plan.** Keep a record of your progress to work out when you can reach your goal and if there is more you can do.

How to prepare a budget

Having a budget helps you track your income (the money you earn) and your expenses (the money you spend). A budget helps you put aside money for expenses and set up a plan to reach your financial goals. Follow these steps to prepare your own budget:

1. **Record your income.** Make a list of how much money you receive and how often it comes in. Your income includes wages from a job, allowances and birthday money.
2. **Add up your expenses.** Estimate all of your regular expenses, such as mobile phone plans and transport costs, that are **required expenses**. Next, add up the **discretionary expenses** you have such as shopping, video games, snacks, gifts, and so on.
3. **Set a spending limit.** Remember that the first rule of budgeting is to spend less than you earn. Make a plan for how you will spend your money. Any money you have left after paying your expenses is the savings available to help you purchase more expensive items.
4. **Prepare a budget.** Create a simple spreadsheet (Source 3) to track your income and expenses and record any money that you regularly put into a savings account. Your **net income** is the money you have left.
5. **Adjust your budget.** Make adjustments to your budget as situations change, such as a new job, increased expenses or a new savings goal. You may need to reduce spending or increase your savings amount. This needs to be recorded in your budget.



Source 1: A savings plan that estimates how much you can save in a given time will help you to save up for and buy a more expensive item such as a bike.

Source 2: Charlotte wants to adopt a dog at a cost of $500. Her parents have told her that they will pay for food and vet bills, but Charlotte must save and pay for the dog, a kennel, bowls and a lead. She estimates the total cost will be around $800.

Charlotte receives a weekly allowance of $20 for cleaning her room and emptying the dishwasher. Her lazy brother is willing to give Charlotte $10 each week to also clean his room.

Monthly budget – July

Category	Estimate	Actual	Difference
INCOME			
Wage	$300	$350	$50
Allowance	$50	$50	$0
Interest	$5	$3	($2)
Subtotal	$355	$403	$48
EXPENSES			
Savings acc.	$50	$50	$0
Mobile plan	$30	$35	($5)
Train	$40	$40	$0
Shopping	$120	$100	$20
Fun	$80	$40	$40
Subtotal	$320	$265	$55
Net income	$35	$138	$103

Source 3: Sample monthly budget for a teenager with a part-time job. The figures show the estimated amount of monthly income and the actual amount earned in the month of July. Negative amounts in the difference column are shown in brackets.

Learning ladder EB2.4

Financial planning

1. Define the term 'interest'.
2. Describe the steps you might take to achieve a financial goal.
3. Source 2: Set out a savings plan for Charlotte to adopt a dog in 20 weeks. How much money would she need from birthday money and extra jobs to achieve her goal? Explain what she could do to achieve her goal earlier.
4. Source 3: Prepare your own monthly budget to help you plan to save for something you want. Explain how you could increase your income or reduce your expenses to achieve your financial goal earlier.
5. Evaluate different strategies for teenagers to achieve financial goals. As a class, discuss different sources of income for teenagers, typical expenses, methods of saving and banking, and the most popular items to save for.

Communicating ideas

1. How would you explain to a friend why it's important to have a savings plan for buying expensive items like a gaming console?
2. How might your perspective on saving money differ from that of someone who prefers to spend money as soon as they receive it?
3. Using a sample budget, how could you explain to someone why their spending on 'Shopping' and 'Fun' might need to be reduced to save more?
4. How could you use the information in the sample budget to argue that having a budget helps people save money and reach their financial goals?

What plans can you make for the future?

At different times of your life you will need to carefully plan for and arrange loans for more expensive items such as cars and houses. During their working lives, Australians also receive and contribute to superannuation as part of their salary to help them plan for retirement.

Buying a car

Purchasing a car is a major decision requiring a great deal of thought and planning. You will need to decide on a car that fits your budget and undertake research to ensure the car is right for you and that you can afford the costs associated with car ownership, including repairs, servicing, petrol, registration costs and insurance.

When you have found the best new or used car to suit your budget, you may need to apply for a **personal loan** from a financial institution. You have to repay the loan and interest over a fixed term of between one and seven years. You can compare car loans online to find the best interest rates and determine how much your repayments will be.

Personal loans involve a **fixed interest rate** or **variable interest rate**. The interest rate won't change over the period of the loan with a fixed interest rate, so you'll know the exact amount of repayments each month. With variable interest rates, loan repayments can rise or fall as the interest rate changes.

Most personal loans for the purchase of cars are **secured loans**. In most cases, your car will act as the security for the loan. If you fail to make the required loan repayments, the lender can repossess your car and sell it. Unsecured loans don't require you to provide your car as security, but the interest rates are generally higher and you won't be able to borrow as much money.

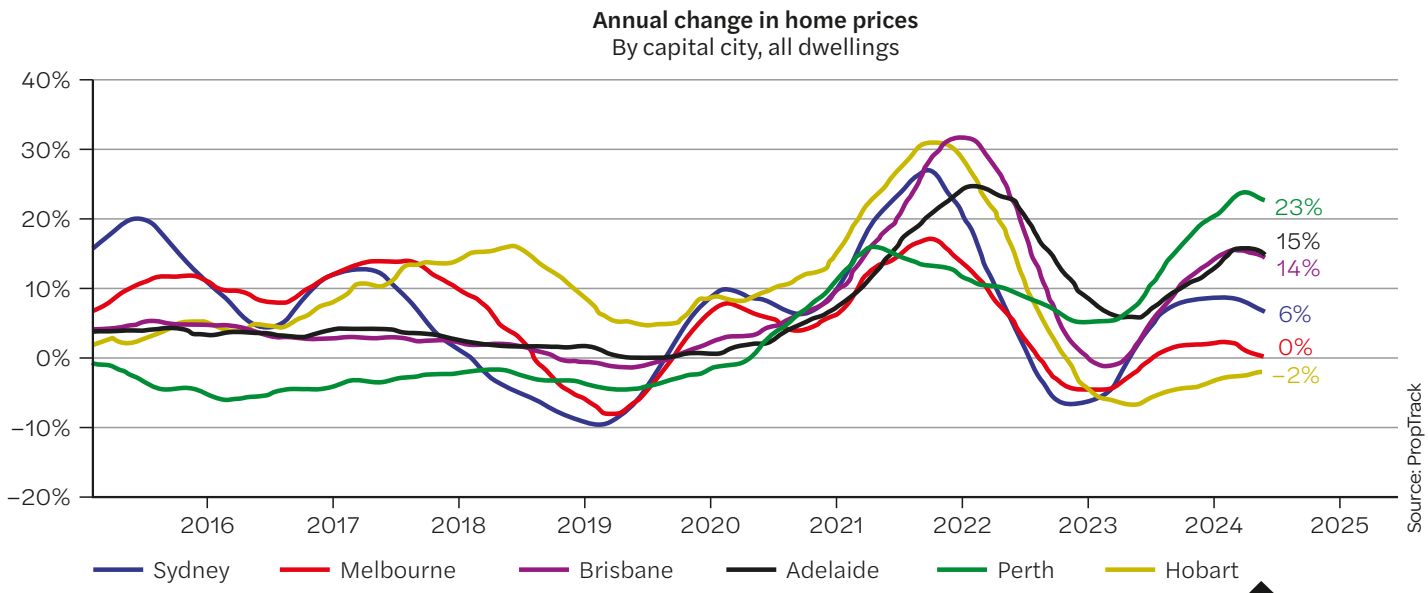
Source 1: Buying a car is a major financial decision that requires a great deal of research into cars and loans.

Purchasing a home

Buying a home is usually the largest purchase a person makes in their lifetime. Purchasing a home not only puts a roof over your head, it is also a long-term investment as the value of the property rises. In 2000, the median price of a house in Melbourne was $200 000, and by 2024 the median price had risen to just over $1 000 000.

Buying a house nearly always involves the purchaser taking out a **mortgage** – a secured loan where the lender can take possession of the property if the borrower fails to meet their regular loan payments. The loan is repaid over 20 or 30 years with regular instalments to repay the loan amount and the interest charged by the lender.

Source 2: Julie is a self-funded retiree. She and her partner were able to retire at 60 years of age and access their superannuation. They purchased a caravan to enjoy trips away and put the rest of their superannuation into a managed investment that pays them a regular income from earnings made in the stock market. They buy a number of units of ownership in a company, known as shares. The investment goes up and down in value in response to the changing value of the shares.



Source 3: The percentage change in median house prices in Australia's capital cities between 2015 and 2024

Preparing for retirement

Superannuation is money that is put aside when you are working to be used when you retire. Employers contribute an additional percentage of an employee's salary into a superannuation fund. The money is invested by the fund to help grow the employee's retirement savings. Employees can also add extra to their superannuation fund to increase their savings for retirement.

When you retire you need to be able to pay for your living expenses with no regular income from work. To be a **self-funded retiree** you need to put away money while you are working to provide you with enough money when you stop work. People who don't have enough resources to support retirement may be eligible for a pension at age 67. This is a modest regular payment from the Federal Government to provide for basic needs.

Learning ladder EB2.5

Financial planning

1. Define the terms 'fixed interest rate' and 'variable interest rate'.
2. Source 1: Describe the options available to a person taking out a personal loan to buy a car.
3. Explain the importance of a secured loan for lenders of personal loans and mortgages.
4. Source 2: Explain the importance of investment planning and superannuation in enabling Julie and her partner to fund their retirement.
5. Source 3: Evaluate the pattern of house prices in capital cities. Which capital cities have shown the best and worst capital growth? When was the best time to buy and sell houses in Melbourne?

Interpreting

1. If you were given a table showing the median house prices in different years, how would you interpret the trend in house prices over time?
2. What trend can you observe in the price of houses in Melbourne from 2016 to 2024? How does this affect people who are thinking of buying a house?
3. How does a fixed interest rate on a loan affect the monthly repayment amount, compared to a variable interest rate?
4. If the value of your house increases, what could happen to the amount of money you owe on your mortgage if you keep making regular payments?
5. How would you determine if the information on a car loan website is accurate and not misleading, particularly about the interest rates?

How do I conduct an investigation?

Now that you've finished the chapter, it is time to conduct your own investigation on business and economics. Throughout the chapter you have developed knowledge and understanding of government and democracy. Background knowledge is important because it helps you make connections to new information, ask better questions and consider different perspectives. As you progressed through the chapter, you have gathered information through classroom discussion, highlighting, note taking and answering questions. Now you are ready to start planning your own investigation into contemporary issues!

An investigation gives you the opportunity to be an active participant in contemporary business and economic issues: investigating, interpreting and communicating your findings.

The chapter has covered the issues important to you as a consumer. What would you like to know more about?

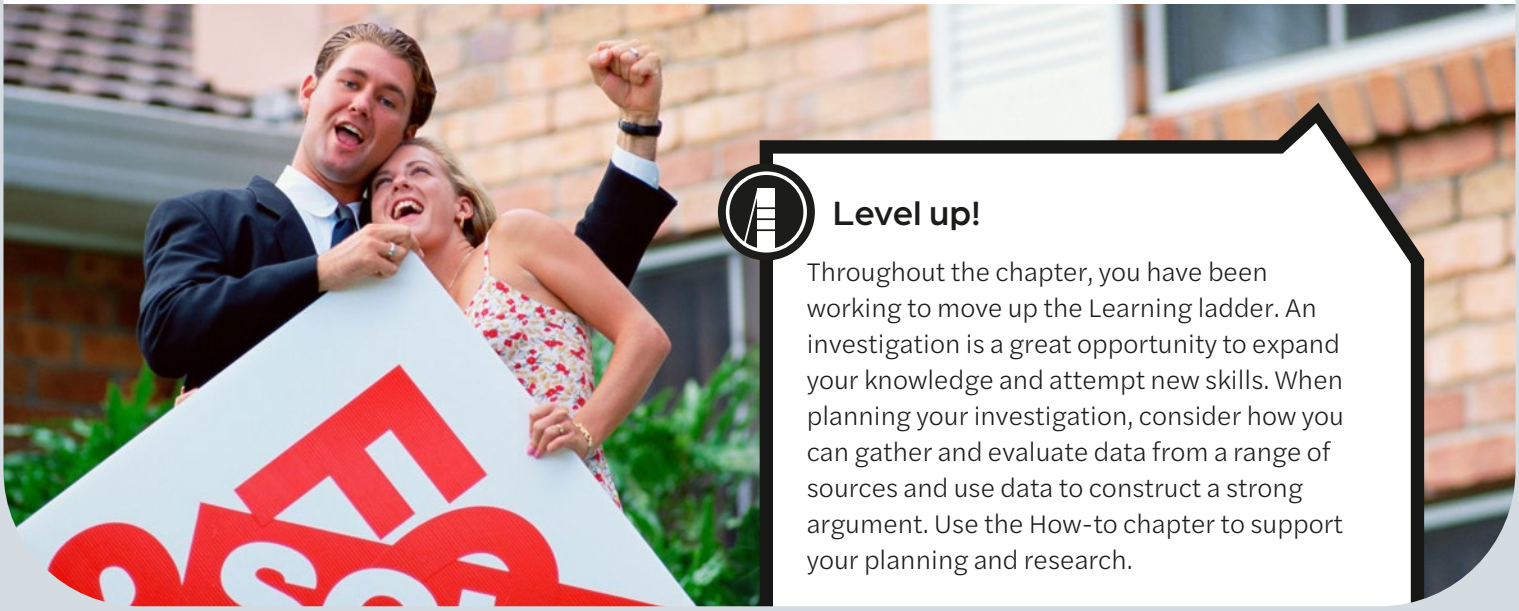
- What are your rights and responsibilities as a consumer?, page 520
- How can you become a smart online shopper?, page 522
- How does Australia's taxation system work?, page 524

Return to the relevant pages in the chapter and read them again.

Next, complete the 'see, think, wonder' process to help develop ideas you might cover in your inquiry.

Jot down your answers to these questions. Your answers will help you to formulate your own research ideas. Once you have worked through this process, you are ready to start your investigation.

Refer to pages 532–4 of the How-to chapter for a step-by-step guide to this process.



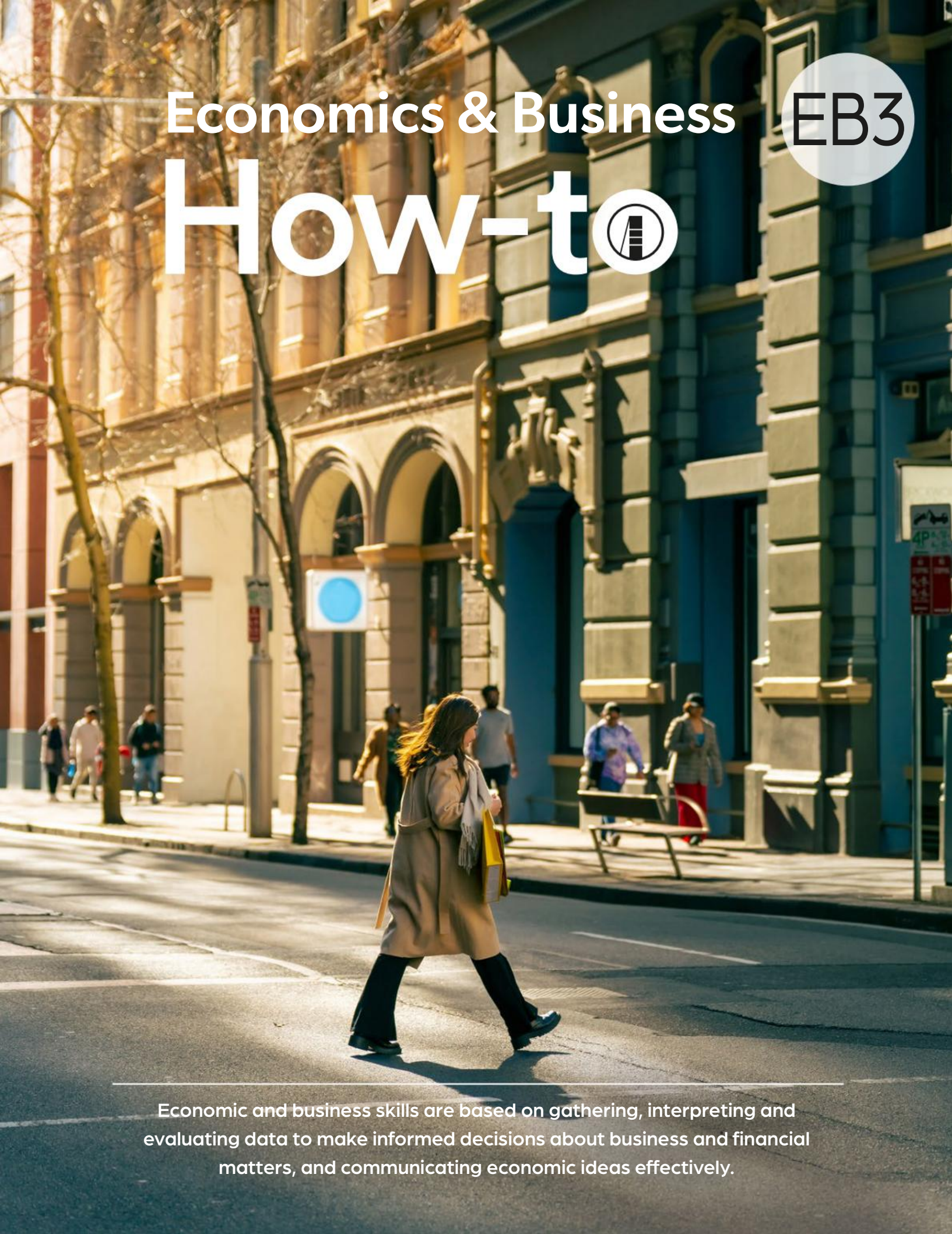
Level up!

Throughout the chapter, you have been working to move up the Learning ladder. An investigation is a great opportunity to expand your knowledge and attempt new skills. When planning your investigation, consider how you can gather and evaluate data from a range of sources and use data to construct a strong argument. Use the How-to chapter to support your planning and research.

Economics & Business

How-to

EB3



Economic and business skills are based on gathering, interpreting and evaluating data to make informed decisions about business and financial matters, and communicating economic ideas effectively.

How to develop economic and business skills

The skills described in this How-to will help you to lead a productive and financially stable life as an Australian citizen, voter and participant in the economy. There are five levels of difficulty for each skill. Each skill is described and a model provided that demonstrates how to master the skill at each level. Learning skills at the lowest level of difficulty will help you to master the skills at the highest level.

Investigating

Developing strong investigative skills in economics and business enables you to ask meaningful questions, locate reliable information and analyse data effectively. These skills are essential for understanding economic and financial systems, evaluating business decisions and recognising market trends.

1 I can ask open-ended questions

Open-ended questions encourage deeper thinking and cannot be answered with a simple 'yes' or 'no'. They require explanation, reasoning or further investigation. Well-structured questions guide research and help you explore complex economic and business issues.

Example

If you are investigating supermarket success, you might ask:

- What factors influence consumer choices in grocery shopping?
- How do pricing strategies impact customer loyalty?

2 I can plan an investigation

Planning an investigation ensures that your research is structured and relevant. This process includes defining a clear research question, identifying key variables and selecting appropriate research methods.

Example

If you are examining the effects of inflation on young consumers, your plan might include the following elements:

- Research question: How does inflation affect the spending habits of teenagers?
- Key factors to consider: inflation rates, disposable income levels, spending patterns
- Methods of data collection: surveying peers, analysing consumer spending reports, reviewing news articles.

3 I can gather information from secondary sources

Reliable sources provide accurate and objective information. These sources may include government reports, economic research and reputable news organisations.

Example

If you are researching fuel price fluctuations, you may refer to:

- Australian Bureau of Statistics (ABS) for historical fuel price data
- Reserve Bank of Australia (RBA) for insights on inflation and interest rate influences
- news publications such as the ABC or *The Age* to examine recent economic developments.

4 I can sort and represent data and information

Organising data effectively helps you identify patterns, trends and relationships in economics and business studies. Sorting data involves categorising and structuring information so that it is easier to analyse. Representing data visually, through graphs, charts or tables, makes complex information clearer and more accessible. Collecting data from multiple sources allows you to compare perspectives and draw more reliable conclusions.

How do you sort economic data?

Economic data can be sorted in various ways.

- **Categorise by time period:** arrange data chronologically to identify trends over time, such as inflation rates or employment figures.
- **Group by economic sector:** separate data into relevant sectors, such as retail, finance and manufacturing, to compare industry performance.
- **Use statistical measures:** calculate averages, percentages and growth rates to summarise key findings.
- **Compare across regions:** identify economic differences between locations, such as city and rural employment rates.
- **Analyse different sources:** collect and compare data from multiple sources, such as official inflation rates as well as personal experiences of price changes, to highlight differences in perspectives.

How do you represent economic data?

There are multiple ways of representing economic data visually:

- **Line graphs** show changes over time, such as trends in petrol prices or consumer spending habits.
- **Bar charts** compare different categories, such as GDP per industry or company profits.
- **Pie charts** illustrate proportions, such as household spending on various expenses.
- **Tables** present precise numerical data, such as exchange rates or inflation figures.
- **Scatter plots** show relationships between two variables, such as income and savings rates.

Example

If you are investigating price rises for a group of products, you might:

- collect data from multiple sources, such as government reports, news articles and personal observations
- present this information in a table to compare price changes over different time periods or between locations
- identify patterns or differences, such as higher price increases in urban areas compared with rural areas
- use a line graph to show the trend of price changes over time
- compare official inflation rates with personal experiences and highlight these differences in a visual representation.

5 I can evaluate information from a range of sources

Ensuring that the data and information you use is accurate, up to date and reliable is crucial in economics and business research. Different sources may present varying viewpoints, so it is important to check for consistency and bias. Evaluating sources helps you make informed judgements about the credibility of the information and prevents misinformation from influencing your conclusions.

How do you evaluate economic and business sources?

There are several important factors to consider when evaluating resources.

- **Check the source's credibility:** identify whether the source is a government report, academic research, a reputable news outlet or a commercial blog. Government and academic sources are generally more reliable than opinion-based sources.
- **Assess for bias:** consider whether the source has a particular agenda. For example, a business advocating for deregulation may present data in a way that favours its position.

- **Compare multiple sources:** cross-check data from different sources to ensure consistency. If one report claims inflation is 3 per cent while another source says it is 6 per cent, investigate why there is a discrepancy.
- **Verify statistical data:** look at how data was collected, who conducted the research and whether the methodology is sound. Data from independent research institutes is generally more reliable than data from social media or informal reports.
- **Consider timeliness:** ensure that the data is recent and relevant to your investigation. Economic trends and business conditions change quickly, and outdated data may not reflect current realities.

How do you compare data from different sources?

Data from different sources can be compared using the following methods:

- Collect data on an issue such as property price changes over time from different sources (for example, government housing reports, real estate websites and newspaper articles).
- Present the information in a table to highlight similarities and differences in the data.
- Identify patterns, such as there being price increases in some areas while other areas remain stable.
- Compare official statistics with personal experiences, such as inflation rates reported by government agencies versus individual perceptions of price rises.

Example

If you are analysing the impact of fast fashion on small businesses, you might review:

- a government trade report on retail sector trends – offering objective economic data
- an industry journal article from an independent economic research institute – providing analysis and expert opinion
- a blog post from a fashion retailer – potentially biased in favour of the industry.

By comparing these sources, you can determine which information is most reliable.

Interpreting

Interpreting economic and business information is a key skill that helps us make sense of the world around us. It allows us to examine data, understand trends and make informed decisions about financial and business matters. Whether you are looking at a supermarket price comparison, analysing how consumer behaviour shifts over time or evaluating the impact of government policies, the ability to interpret information effectively is essential.

This section will guide you through five levels of interpreting economic data, from basic comprehension to advanced analysis. By mastering these skills, you will be better equipped to understand market forces, business strategies and economic policies that affect individuals and society as a whole.

1 I can read tabulated data and graphs

Understanding economic information often starts with interpreting data in tables and graphs. These can show economic indicators such as inflation rates, employment figures and supply and demand patterns.

To effectively read data, follow these steps:

1. **Identify the data source.** Is the table or graph from a reliable source, such as the Australian Bureau of Statistics (ABS) or the Australian Competition and Consumer Commission (ACCC)?
2. **Understand labels and units.** Check the title, axes labels and units of measurement.
3. **Look for key figures and comparisons.** Identify the highest and lowest values, as well as any averages or totals.
4. **Note patterns and outliers.** Are there any unusual data points?

Example

This graph shows how grocery prices and wages have changed over time from 2014 to 2024. From 2014 to 2021, both lines move up at about the same speed. This means that as food prices increased, wages also increased at a similar rate. People could still afford groceries without a big change in their budgets.

In 2024, the grocery price line is not rising as quickly as it did in 2022; however, grocery prices are still much higher than they were before 2022, while wages have not increased at the same rate, meaning that food is now more expensive compared to wages.

▲ **Source 1:** Wages have not kept up with grocery price inflation since late 2021.

These sentence starters may help you structure a response:

- 'This table shows that ...'
- 'According to the graph, the trend in prices suggests ...'
- 'The highest/lowest value recorded is ...'

2 I can describe trends

A trend is a pattern in data that shows how something changes over time. Describing trends involves identifying increases, decreases, fluctuations or stability. To do this effectively, follow these steps:

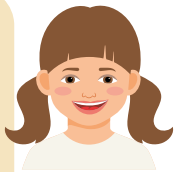
1. **Identify the general direction of change.** Is it increasing, decreasing, fluctuating or remaining stable?
2. **Use specific time periods.** Mention whether the trend occurs over months, years or decades.
3. **Compare different categories.** Are there differences between groups or regions?
4. **Identify key drivers of the trend.** What factors are influencing the change?

Example

Over the past five years, the cost of nearly everything in Australia has increased. The cost of food and drinks (measured by something called the Consumer Price Index, or CPI) has increased even more than other goods, and is about 24 per cent higher than five years ago. However, wages (how much people earn) haven't increased as quickly. From 2018 to 2021, food prices and wages were increasing at a similar pace. But after that, food prices started rising much more quickly than wages – more than double the rate of wage growth by 2022–2023. While price increases have slowed slightly since 2024, groceries are still much more expensive compared with wages than they were a few years ago.

These sentence starters may help you structure a response:

- 'Over time, the data shows ...'
- 'There is a clear upward/downward trend in ...'
- 'The data fluctuates between ... and ...'



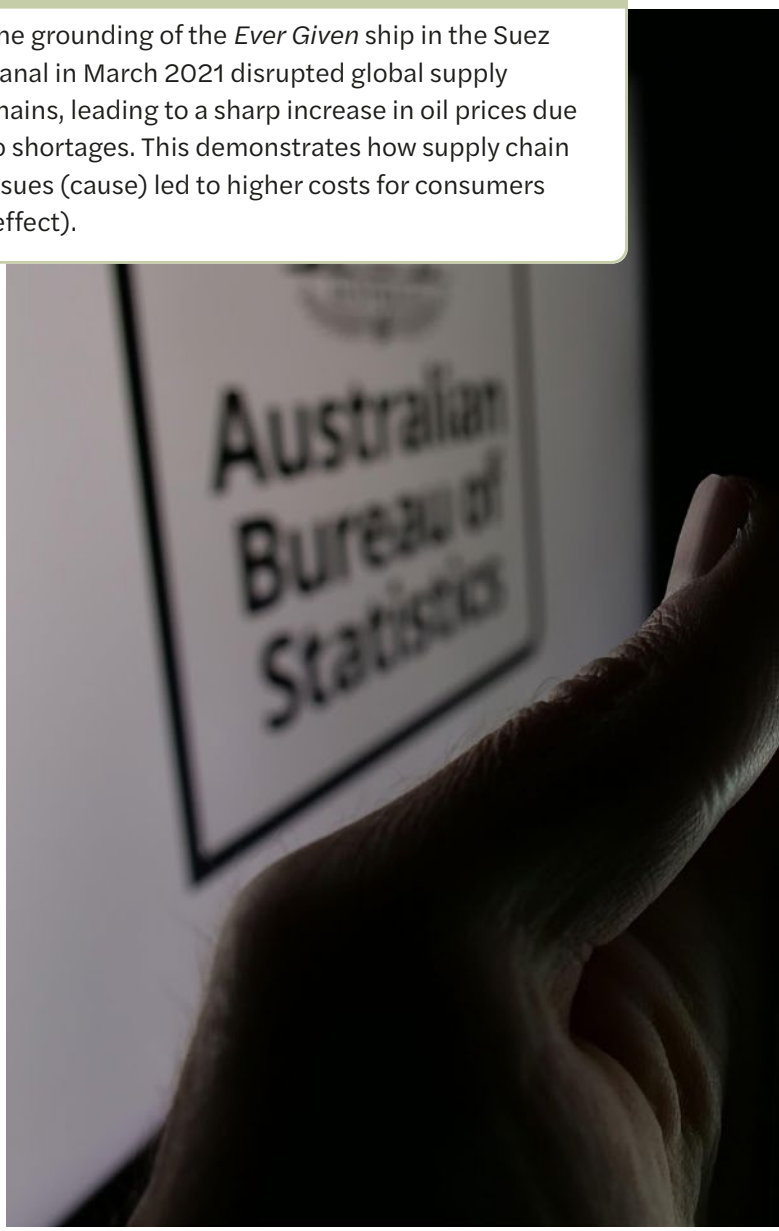
3 I can explain cause-and-effect relationships

Economic changes often have identifiable causes and consequences. Understanding these relationships helps explain why certain patterns occur. To do this, follow these steps:

1. **Identify the cause (why the change happened).** What factors contributed to this change?
2. **Identify the effect (what happened as a result).** What were the consequences of this change?
3. **Use real-world examples.** Refer to case studies or news reports.
4. **Support with data.** Use numbers or graphs to justify explanations.

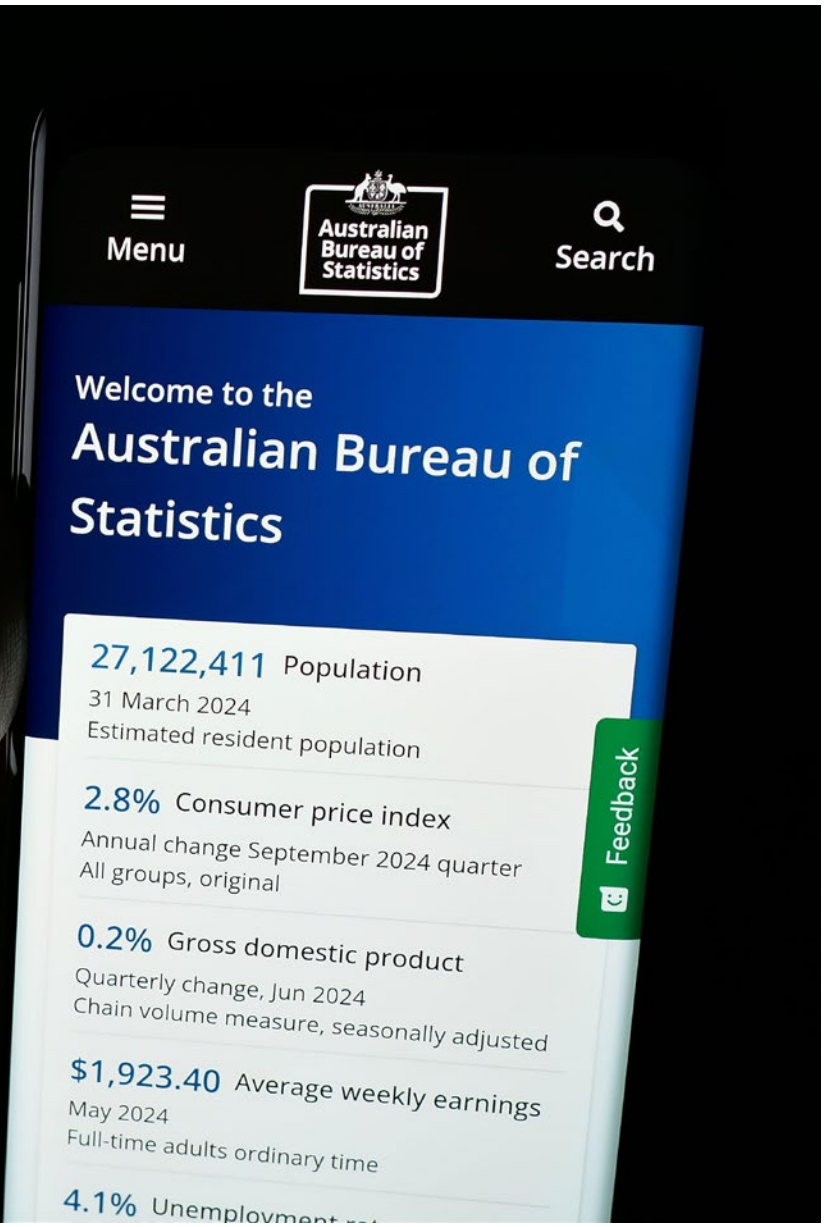
Example

The grounding of the *Ever Given* ship in the Suez Canal in March 2021 disrupted global supply chains, leading to a sharp increase in oil prices due to shortages. This demonstrates how supply chain issues (cause) led to higher costs for consumers (effect).



These sentence starters may help you structure a response:

- 'If this trend continues, we can expect ...'
- 'Based on past data, it is likely that ..."
- 'An increase in ... may result in ...'



4 I can predict change to patterns

By analysing past trends and current data, we can make informed predictions about future economic changes. To do this effectively, follow these steps:

1. **Review historical trends.** What has happened in the past in similar situations?
2. **Consider influencing factors.** Look at government policies, technological advancements and global events.
3. **Use models or theories.** Economic principles such as supply and demand can help predict changes.
4. **Account for uncertainty.** Acknowledge that multiple factors can influence predictions.

Example

If grocery prices continue rising at their current rate, many consumers will switch to discount supermarkets like Aldi. A consumer trend graph already shows increasing market share for Aldi in response to higher food costs.

5 I can evaluate data and data sources for authenticity and validity

Evaluating sources ensures that economic information is reliable, unbiased and based on accurate data. To evaluate sources, follow these steps:

1. **Check the publisher.** Government agencies, academic institutions and reputable organisations are more trustworthy than unknown blogs.
2. **Look for bias.** Is the source funded by a company that benefits from the data?
3. **Compare multiple sources.** Are other reports showing similar findings?
4. **Check the date.** Economic data changes quickly; outdated data may no longer be relevant.

Example

A report from the Australian Bureau of Statistics on employment trends is more reliable than a social media post about job losses. The ABS provides regularly updated data based on national surveys.

Decision-making

Economic and business decision-making involves analysing information, assessing options and making choices that impact individuals, businesses and governments. Every decision has consequences, and understanding how to approach decision-making systematically is crucial.

1 I can identify an economic and business issue

The first step in decision-making is recognising an issue that affects individuals, businesses or governments. Economic and business issues often arise from factors such as changing consumer behaviour, shifts in market conditions, or government policies.

1. **Observe real-world economic events.** Look for headlines about inflation, employment, business closures, or new government regulations.
2. **Identify who is affected.** Consider whether consumers, workers, businesses or policymakers are involved.
3. **Recognise the cause of the issue.** Determine what factors are influencing the problem, such as supply chain disruptions, changing consumer preferences or new competitors.
4. **Use data to confirm the issue.** Economic issues often have supporting evidence, such as unemployment statistics or sales figures.

Example

A fast-food chain notices that fewer people are buying its meals. After analysing the market, it realises a new health-conscious competitor is attracting its customers. This highlights how businesses must adapt to changing consumer preferences to stay competitive.

2 I can describe the criteria to respond to an issue

It is important to establish criteria to evaluate possible responses. Criteria help in comparing different options based on their impact, cost and feasibility.

1. **Consider economic efficiency.** Will the response make the best use of resources?
2. **Evaluate financial impact.** How much will it cost, and who will pay for it?
3. **Assess social and ethical implications.** Will it benefit people fairly?
4. **Look at sustainability.** Will it have long-term positive or negative effects?

Example

To compete with a new healthy food trend, a fast-food company decides whether to add more nutritious menu items or invest in a marketing campaign to improve its image. A key criterion would be whether the strategy attracts health-conscious consumers without losing existing customers.

3 I can develop responses to economic and business issues

Solutions should address the problem effectively while considering potential trade-offs.

1. **List possible solutions.** Consider different ways to address the issue.
2. **Weigh advantages and disadvantages.** Compare the benefits and drawbacks of each response.
3. **Consider short-term and long-term effects.** Will the response be effective immediately, or will it take time?
4. **Use real-world examples.** Refer to case studies or economic principles that support the response.

Example

A business facing competition could:

- improve its marketing by using social media influencers to reach younger customers
- offer discounts or loyalty rewards to attract returning customers
- expand its product range to include healthier options.

Each response has trade-offs. While marketing increases visibility, it requires a large budget. Discounts may attract customers but reduce profits.

4 I can evaluate responses using cost–benefit analysis or other criteria

Economic and business decisions require careful evaluation of responses. Cost–benefit analysis (CBA) is a common tool used to compare the advantages and disadvantages of each option.

1. **Identify costs.** What are the financial, social or environmental costs?
2. **Identify benefits.** What are the positive outcomes, and who benefits?
3. **Use quantitative data.** If possible, assign monetary values to the costs and benefits.
4. **Compare options.** Which response provides the greatest overall benefit?

Example

A clothing brand wants to increase sales and considers two strategies: launching a new eco-friendly clothing line or offering a major sale on existing stock.

Response	Costs	Benefits
Launching an eco-friendly clothing line	New product development requires research and sustainable materials.	Eco-friendly products appeal to environmentally conscious customers.
Offering a major sale on existing stock	Sales reduce profit margins.	Discounts attract budget shoppers.

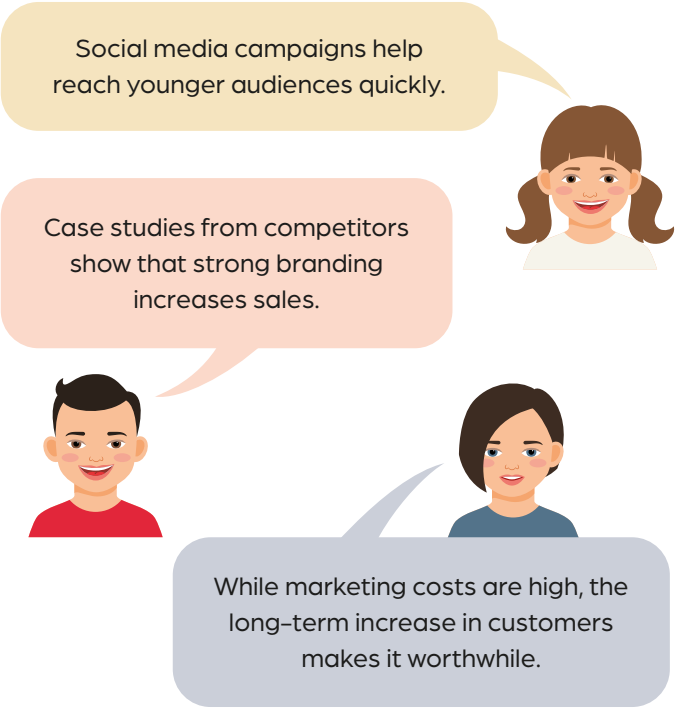
Evaluating these factors helps determine which strategy provides the best long-term advantage.

5 I can draw conclusions and justify responses

A strong conclusion should be supported by data and logical reasoning. This structured approach to decision-making will help you analyse economic and business issues critically, particularly in understanding how businesses create and maintain a competitive advantage.

1. **Summarise findings.** What did the evaluation reveal about the best response?
2. **Justify the decision.** Use data, economic principles or case studies to explain why this is the preferred response.
3. **Acknowledge limitations.** Recognise any uncertainties or challenges in implementing the decision.
4. **Consider alternative perspectives.** Would different groups (for example, businesses, consumers, government) see this decision differently?

After evaluating strategies, a company may decide that investing in marketing is the best way to attract new customers and maintain a competitive advantage.



Communicating ideas

Communicating economic ideas clearly and effectively is a crucial skill in economics and business. It involves using correct terminology and structured reasoning, and supporting your points with evidence. Whether presenting an argument, writing a report or participating in a class debate, strong communication skills help you explain economic issues with confidence and credibility.

1 I can describe economic and business issues

The first step is being able to describe what is happening in the economy or a business context using clear and accurate language.

1. **Identify the issue.** What is the economic or business problem?
2. **Use economic vocabulary.** Use terms appropriate to the topic you are discussing, such as 'inflation', 'unemployment', 'monetary policy', 'interest rates' and 'subsidies'.
3. **State who is affected.** This might be individuals, businesses, governments or communities.
4. **Use real examples.** Refer to current events or textbook case studies.

Example

The Reserve Bank of Australia (RBA) increased interest rates to combat inflation. This policy affected households with mortgages, as their mortgage repayments increased, leading to reduced spending in the economy.

These sentence starters may help you structure a response:

- 'An economic issue that is currently affecting people is ...'
- 'This issue is important because ...'
- 'The key people or groups affected are ...'

2 I can explain arguments

Explaining arguments means giving reasons for why an issue is occurring or why a response may or may not work.

1. **Give logical reasons.** Explain why something is happening.
2. **Link to economic principles.** Use ideas such as supply and demand, inflation control or fiscal policy.
3. **Develop both sides of the argument.** What are the benefits and potential drawbacks?

Example

One argument in favour of the government offering rebates for solar panel installation is that it encourages clean energy use and reduces long-term electricity bills. A counter-argument is that such schemes cost taxpayers money and may not reach low-income households effectively.

- What is the reasoning behind this argument?
- Who benefits from this policy, and who might be disadvantaged?
- Are there alternative viewpoints or opposing arguments?

3 I can support explanations with data

Adding evidence makes your argument stronger and more convincing.

1. **Use statistics and examples.** Find relevant graphs, tables or real-world data.
2. **Quote credible sources.** Use reports from the Australian Bureau of Statistics (ABS), the Reserve Bank of Australia (RBA) or Treasury.
3. **Show how the data supports your argument.** Explain what the numbers mean.

Example

According to ABS data, inflation reached 7.8 per cent in late 2022. In response, the RBA raised the cash rate multiple times in 2023. This data supports the idea that the RBA uses monetary policy to reduce inflation and stabilise prices.

4 I can explain arguments using data

It's not enough to have an opinion – you need to back it up with facts. Being able to explain arguments using data means you can take complex information, such as statistics, graphs or tables, and use it to strengthen your reasoning. This shows that your conclusions are not just guesses but are supported by real-world evidence.

Explain what the data shows using the following steps.

1. **Spot the pattern or trend**. Instead of just saying 'unemployment was 7 per cent', you might say: 'Unemployment rose from 5 per cent to 7 per cent between March and July, which shows a sharp increase that was likely caused by business closures during the COVID-19 lockdowns.'
2. **Explain the cause or effect**. Link the data to what's happening in the economy. For example: 'The rise in unemployment suggests that fewer people were working, which would reduce household income and impact living standards.'
3. **Make a judgement or comparison**. Use the data to compare different time periods, policies or options. For example: 'After the JobKeeper program started, unemployment fell from 7 per cent to 6 per cent. This suggests that the policy helped people stay employed.'
4. **Connect to a bigger idea**. Show why the data matters in context. For instance: 'Lower unemployment helps maintain living standards and supports economic stability, so the JobKeeper program played an important role in economic recovery after the COVID-19 pandemic.'

You may also use data to compare options – how does the data support one response over another?

Example

During the COVID-19 pandemic, the Australian Government introduced the JobKeeper wage subsidy to protect employment. ABS data shows that unemployment remained lower than expected in 2020 due to this support. A line graph comparing unemployment rates before and after JobKeeper was introduced supports the argument that government fiscal intervention helped maintain economic performance and protect living standards. Similarly, RBA cash rate charts from 2022 to 2024, alongside consumer spending data, help explain how monetary policy was used to slow inflation.

5 I can use evidence from sources to evaluate economic and business issues

In the real world, economic and business decisions are rarely simple. There are usually multiple viewpoints, conflicting data and different priorities involved. Being able to assess all of this information and come to a balanced conclusion is a powerful skill. It shows that you can think critically, consider different perspectives, and communicate clearly based on the *quality* of the evidence – not just the quantity.

Example

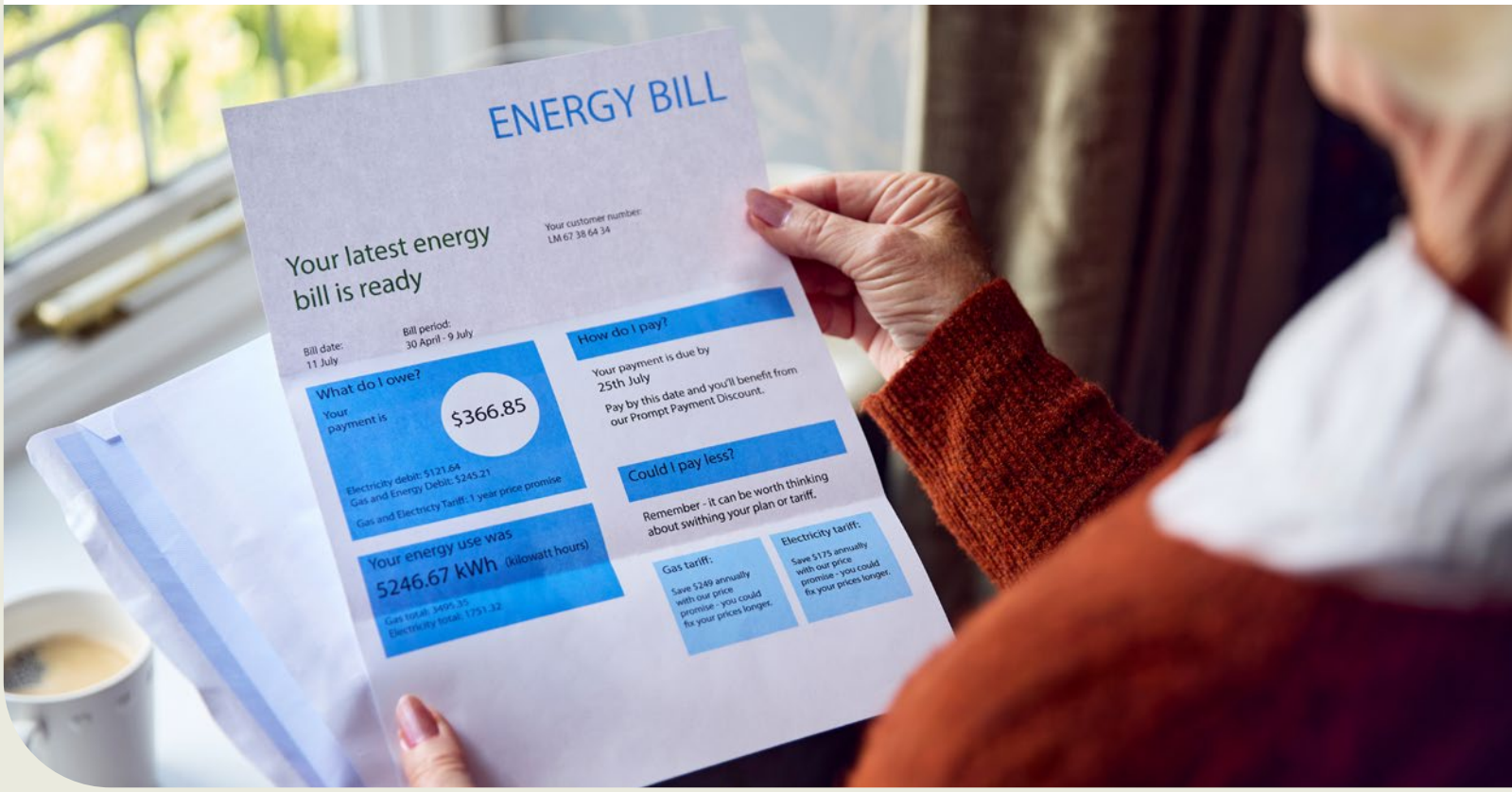
In 2023, in response to the rising cost of living, the government introduced targeted energy bill relief. To evaluate its effectiveness, you could examine ABS data on energy price trends, a Treasury report on household savings and an article from the ABC summarising public responses. If all sources indicate a reduction in pressure on low-income households, you can conclude the policy improved living standards for those most affected.

Use this table to help structure your evaluation of an economic or business issue. It guides you through collecting evidence, comparing sources, checking reliability and drawing a well-reasoned conclusion.

Step	What to do	Helpful prompts	Example
1 Identify the issue.	Clearly state the economic or business issue you are evaluating.	What is the key question or problem?	Is the government's energy bill relief effective in reducing cost of living pressures?
2 Gather sources.	Find at least 2–3 different types of sources (e.g. data, reports, media).	Are the sources recent, reliable and relevant?	ABS energy prices data, Treasury report, ABC News article on public opinion
3 Summarise each source.	Briefly explain what each source says about the issue.	What is the key message from each source?	ABS data: energy prices stabilised in 2023. Treasury: household savings slightly improved.
4 Compare the evidence.	Look for similarities or differences between sources.	Do they agree? Do any contradict each other?	All sources suggest reduced pressure on low-income households.
5 Assess reliability.	Evaluate how trustworthy each source is.	Who created it? Is there bias? Is it up to date?	ABS and Treasury are government sources (highly reliable), ABC is a reputable news outlet.
6 Draw a conclusion.	Decide which argument is best supported and explain why.	What does the strongest evidence show?	Based on all sources, the energy bill relief appears to have improved living standards for vulnerable households.

Key questions:

- How reliable and up to date are the sources used?
- What evidence supports each point of view?
- Does the data from different sources agree or conflict?



Glossary

A

abrasion the process of scraping or wearing something away

absolute location precise point on the Earth's surface, usually defined by coordinates such as latitude and longitude or a specific address

acropolis a fortified part of a city that is built on a high hill. The name comes from the Greek words *akro*, meaning high and *polis*, meaning city. The most famous acropolis was built in the 5th century BCE in Athens, Greece.

active citizenship when citizens are actively involved in the local community and display values such as respect and inclusion by helping others

aesthetic value appreciation of how a place looks and its perceived beauty, uniqueness or connection to a person

afterlife the belief in life after death held by many ancient cultures, such as the ancient Egyptians who preserved bodies through mummification ready for the afterlife

agoge military training camp at Spartan army barracks for boys as young as seven years of age to learn to be brave warriors

agora the centre of activity in ancient Greek towns and cities. It was where public meetings were held, where plays were performed, and a busy marketplace.

agriculture the science and practice of farming, including the growing of crops and rearing of animals

ahimsa the avoidance of harming any living creature by actions, words or thoughts

air mass large body of air that is all the same temperature and humidity, and at the same level of pressure

air pollution the release of harmful particles or materials in the atmosphere

ancestors relations who lived a long time ago from whom you are descended

aqueducts structures built to channel water to settlements in ancient Rome. They had to be built accurately as the water had to run downhill over large distances.

aquifer underground layer of water-bearing rock where groundwater can be extracted

archaeology the study of human history through the excavation of sites and the analysis of artefacts and physical remains found there. People undertaking archaeology are known as **archaeologists**.

arid receiving little or no rain

artefact an object made by a person, such as a tool or implement, usually of historical interest

asceticism the practice of living a simple life without physical pleasures

assassinate to murder a leader or important official for political reasons

assemblies branch of government in the Roman Republic where plebeians democratically elected magistrates and passed laws

B

balance of power where no party holds a majority and independents and other parties have enough votes to decide the issue

ballot paper a paper used for voting in an election

barter to trade goods or services directly with another person instead of using money

basin an area of land where all water drains into a common river or lake, often used to manage and store water for use in towns, farming and power generation

beach a stretch of coastline made up of sand, pebbles or other materials, located between the ocean and the land

Before Common Era (BCE) the name of the period of time up until the birth of Jesus

beliefs a set of principles or tenets that, together, form the basis of a philosophy, moral code, religion or world view

bigotry where people are intolerant of opinions or identities that are different from their own

bill a proposed law

biodiversity variety and abundance of species within an ecosystem

biological hazards hazards caused by living things, such as pandemics or invasive species, which can impact people and environments

Bronze Age the period during which people made and used tools made of bronze, from 3000 to 1200 BCE

Buddhism a philosophy that began in India and arrived in China via the Silk Road in the 1st century CE. Buddhists believe that after people die, they are reincarnated – reborn into another life. Living a proper life would stop the cycle of rebirth, and this stage, called nirvana, could be reached by leading a good life and no longer wanting things.

bushfires fires that occur in natural vegetation, such as bushland or forests

C

Cabinet key leaders chosen from the government's members of parliament

capital resources tools like machines or drills and infrastructure such as roads, buildings and power

carrying capacity the amount of material that can be held in a contained area such as a river

caste a social class in Hinduism that is inherited (passed down over the generations). There are four castes in the Hindu caste system.

catchment an area where water is collected by the natural landscape

cause a factor, such as the actions of an individual or group, or a condition that contributes to a historical development. Causes may be long- or short-term factors. Historical changes are typically attributed to multiple causes, with political, societal, economic, cultural and environmental considerations.

cavalry a group of soldiers that fights mounted on horses

Census a survey of people to provide data about the economic, cultural and social composition of the population. The Australian Census is taken every five years.

century a unit of 100 Roman soldiers that was led by a commander known as a centurion

Christianity a religion based on the teachings of Jesus Christ using the Bible as sacred scripture; Catholic and Protestant religions both preach Christianity

chronological order the placement of events into the order they happened to bring structure and order to events in time

chronology the sequencing of events in order, as in a timeline, so that patterns of continuity and change and causes and consequences can be observed and identified

citizen a legally recognised member of a country or society. In ancient Greece, citizens were men who had completed their military training. In ancient Rome, citizens were males born to parents who were citizens.

citizenship becoming a citizen of a country by meeting the legal and social requirements of that nation

city-state an independent city and its surrounding area. Because of ancient Greece's mountainous landscape, small farming villages developed independently into city-states. Each city-state, or *polis*, such as Athens or Sparta, stayed independent rather than growing into a single Greek nation.

civil war war between citizens in the same country

clan Aboriginal nations are broken into clan groups. Clans are larger than a family and share a common language and kinship system.

climate change the process by which the Earth's average conditions (such as temperature and rainfall) change over time

climate graph a graph showing the average temperature and rainfall a region recieves, generally over one year

cluster a pattern of distribution where features or people are grouped closely together in one area

coastal flooding inundation of coastal areas caused by storm surges, excessive rainfall or rising sea levels

command economy where the government controls nearly all of the businesses and directs the production of goods

commission money paid due to making a sale

Common Era (CE) the name of the period of time from the birth of Jesus (year 1) until now

community a group of people connected in some way and with a distinct identity

community of place a community based on a connection to a specific place or region

compassion showing care for those in our community who need help

concurrent powers powers shared by Federal Parliament and the state and territory parliaments

condensation a process by which a gas (for example, water vapour) is changed to a liquid (for example, water drops)

Confucianism a philosophy taught by Confucius (551–479 BCE) that taught that people should be honest, brave and knowledgeable and never violent or arrogant. The path to happiness lay in obeying the law, doing one's duty and respecting older people – especially parents and grandparents.

connection to Country the deep spiritual, physical, social and cultural relationship between First Nations Peoples and the land

consequence the outcome or result of historical developments. Consequences may be intended or unintended and long or short term.

Constitution a document stating the fundamental principles by which a nation, state or organisation is governed

consuls the elected leaders of the Roman Republic (509 to 27 BCE). Each year, the citizens of Rome elected two magistrates as consuls, who ruled together for a term of one year.

consumer a person or organisation that purchases products or services

consumer sovereignty where the need and wants of consumers control the output of producers in an economy

context (sources) the social and historical time, place and conditions in which a historical source was created. The context of a historical source is considered as a factor in the evaluation of that historical source.

continent one of Earth's seven main continuous expanses of land; for example, Asia

continuity a form of historical process in which there is no change over time

convectional rainfall rain that occurs when land heats the air above it, forcing the air to rise

costs and benefits a benefit is what you gain from a decision and a cost is what you give up after a decision is made. People weigh up the costs and benefits when making a decision.

Country for many First Nations people, 'Country' refers to the lands, waterways and skyscapes of a particular geographical location. These locations are associated with identity and belonging and cover all parts of the continent of Australia and the adjacent islands. Country encompasses both the physical environment and the cultural connections, stories, lore, law and traditions related to Caring for Country and its resources for future generations. Referring to this territory as 'Country', rather than land, indicates a reciprocal and deep relationship – Country both owns and is owned by the People. The concept of Country includes lands, waters and sky.

cultural identity sense of belonging to a particular cultural group

culturally diverse a society made up of people from different ethnic backgrounds, races, cultures, religions and languages

culture the shared characteristics of a group of people, including place of birth, language, religion, language, arts, dress and cuisine

cumulonimbus cloud dense, vertical cloud, formed from water vapour carried by powerful upward air currents; associated with heavy rain and storms

customary law the laws that regulate behaviour and punishments in Aboriginal society

customer guarantee the automatic right given to consumers that the product or service is safe, without fault and performs as expected

cyber bullying use of social media to bully a person by sending messages or posting photos of a threatening nature

D

dam a barrier constructed to hold back water

deben a metal unit of weight used in ancient Egypt

Deep Time refers to the period between the emergence of modern humans and the development of written records. In the Australian context, this encompasses the period between when Aboriginal and Torres Strait Islander Peoples populated the Australian landmass and the establishment of the first British colony.

deficit a situation where there is not enough of something, such as water, to meet demand

deforestation the clearing of a forest to make room for a different land use such as farming

dehumanisation a process by which the humanity of a person or group of people is denied

delta a triangular region of sediment at the mouth of a river

demand a consumer's desire to buy a good or service

democratic institutions bodies such as parliament that allow citizens to participate in decision-making processes

democracy rule by the citizens, who elect officials and leaders

deposit to drop or place in an area, such as the deposition of sediment by a river

deposition formation over time of a layer of soil or rock

desalination the process of removing salt from seawater

desert an area that receives less than 250 millimetres of rain every year

dew point the temperature below which water begins to condense and dew (tiny droplets of water) is formed

dharma sacred laws giving instruction on how to live a moral life

diarchy rule by two rulers who inherited the role

direct action public forms of protest to achieve goals

discretionary expense a non-essential expense

diversity recognises the variety of people in a group or society, including differences in age, ability, class, ethnicity, gender identities, sexualities, culture, religion and worldview

dividend money paid by a company to its shareholders from its profits

downstream the direction that a river flows, away from its source, often where communities use water after it has travelled through other areas

drainage basin an area of land where precipitation collects and drains into a river, bay or other body of water

Dreaming explains how life came to be and establishes the rules for relationships between Aboriginal people, the land and all living things

dynasty where one family maintains power over many years by handing on the throne to an heir, usually the oldest son

E

ecclesia political assembly of citizens in ancient Greece where citizens would come together to vote for new laws and to make important decisions

economic decision-making the process of choosing how to use resources to achieve the best possible outcome

economic disincentives economic arrangements such as taxes or high interest rates to discourage consumers from spending

economic incentives economic actions that motivate consumers to take action, such as rebates to install solar power

economics the study of the production, distribution and consumption of goods and services

ecosystem a community of plants, animals and other organisms in their physical environment

edict official order or statement. In ancient India, Ashoka inscribed his edicts about how to live a moral life on stone pillars.

Elders highly respected members of First Nations communities who hold and share cultural knowledge, including lore, law, story, song, dance and other highly specialised and complex knowledge and wisdom, and have important responsibilities to guide younger generations

electorate the electoral divisions for the House of Representatives in the Australian Parliament and for lower houses of state parliaments

embers small burning pieces of wood or coal from a fire that can be carried through the air and reignite flames

emperor a ruler or monarch of an empire (for example, in 27 BCE Octavian became the Roman Empire's first emperor)

empire a number of nations or states ruled over by a single leader such as an emperor, king or queen, or by an oligarchy (for example, the Roman Empire)

employer a person or business that employs people

environmental flows water released into natural systems, such as rivers, to support the health of ecosystems and ensure sustainability

environmental resource any material from the environment that is useful or valuable to society; these can be renewable, non-renewable or perpetual resources

equality a 'fair go' to access employment and services without discrimination

equites members of the Roman middle class; they were professionals who worked as bankers, merchants or civil servants

erosion removal and relocation of soil or rock by water, wind or ice

evaporation process by which a liquid (for example, water) is changed to a gas (for example, water vapour)

even a distribution where something is spread out equally across an area

evidence the information obtained from historical sources that are used to support an interpretation of the past. Evidence can be used to help construct a historical narrative, to support a hypothesis or to prove or disprove a conclusion.

excise duty tax on certain goods produced or manufactured in Australia

exclusive powers the powers of the Federal Government as set out in the Australian Constitution

executive the prime minister and senior ministers of the Australian Government and the Governor-General, who have the power to administer or implement the law

expenses the money you spend

export selling and shipping of goods and services to another country as part of trade

F

facilities buildings and services that support a community, such as schools, hospitals, shops and transport systems

fairness the idea that everyone deserves a 'fair go' to succeed by having equal access to jobs and services

Federal Government the national government, formed in the House of Representatives by the party, or coalition of parties, with the support of the majority of members in the House; led by the prime minister

Federal Parliament the legislative branch of the government of Australia, consisting of the Crown (represented by the Governor-General), the House of Representatives and the Senate

fieldwork practical, hands-on geographical investigation conducted in the real world to collect primary data

financial year a 12-month time period that is used for tax purposes; Australia's financial year begins on 1 July

fixed interest rate an interest rate that doesn't change for the duration of your loan

flash floods rapidly occurring floods caused by sudden, intense rainfall, often leading to severe water build-up in a short time

flood large amounts of water overflowing onto dry land

floodplain area of ground next to a river that floods when the river waters rise

foggaras an ancient underground irrigation system that transports water from aquifers to farmland in desert areas. They are still used today in places such as Algeria for sustainable farming.

forced migration movement of people against their will due to conflict, persecution or natural disasters

fossil aquifer a deep underground water source that formed millions of years ago and does not refill quickly, making it non-renewable

fossil fuel fuel made from the decomposed remains of things that lived millions of years ago (for example, coal, oil)

free economy where the availability and pricing of goods and services is driven by demand from consumers; see also market economy

freedmen former slaves of ancient Rome who had been given their freedom. They were not allowed to vote but were protected under the law.

freedom the power or right to act, speak or think as one wants within the boundaries of the law

fresh water any naturally occurring water that is not salt water, including water in ice sheets, ice caps, glaciers, icebergs, ponds, lakes, rivers, streams and groundwater

front where two different air masses meet, often causing changes in weather

frontal rainfall rain that occurs when a mass of cold air pushes up warm air

G

gene bank a storage facility that keeps seeds and other genetic material to protect plant and animal diversity. Gene banks help scientists develop drought-resistant crops for sustainable farming.

geographical characteristics the physical and human features that define a place, such as landforms, climate, population and infrastructure

geographical inquiry the process of investigating spatial phenomena using observation, data collection and analysis

geological hazards also called geophysical hazards; natural events caused by Earth's processes, such as earthquakes and volcanoes

geothermal energy thermal energy generated and stored in the earth

glacier a mass or river of ice that slowly moves down a mountain or valley, carving a U-shaped valley as it goes

gladiator criminals or prisoners who were forced to fight, usually to the death, in a public arena for the entertainment of ancient Romans

global citizenship understanding global issues and local actions that can benefit society

good a product that is useful in satisfying the needs and wants of customers

goods and services tax (GST) tax of 10 per cent on most goods and services sold in Australia

gorge a narrow valley between hills or mountains, usually with steep rocky walls and a stream running through it

Governor-General the royal representative in Australia who must approve all bills made by the Commonwealth Parliament before they become law

grant a sum of money provided to an individual, business or organisation that doesn't have to be repaid

green belt undeveloped areas around cities set aside for open space

green wedge undeveloped areas within cities that have been set aside for open space

groundwater water that is located in rock or soil under the Earth's surface

H

helots slaves in ancient Sparta who undertook manual labour

hieroglyphs picture symbols used in ancient writing systems, such as the system used by ancient Egyptians

High Court the highest court in the Australian judicial system

high-income country a country with an average annual income of US$12 376 or more per person

historian a person who specialises in the study of history by using evidence to answer questions about the past

historical inquiry the process of investigation undertaken to understand the past

homo sapiens scientific name for the human species, meaning 'wise man'

hoplite an ancient Greek soldier

House of Representatives the political party with the largest number of members in the House of Representatives. It forms the Australian Government.

humanitarian organisation an organisation that provides aid or assistance to people in need; for example, Red Cross

hung parliament when no single party or coalition of parties has a majority of seats in the house that forms government

hydroelectric using electricity generated by the movement of water

hydroelectricity electricity that is produced by water-powered generators

I

Ice Age the period of time between 1.8 million and 12 000 years ago when much of the Earth's water was frozen at the northern and southern tips of the planet and the sea level was more than 100 metres lower than it is today

ice cap a covering of ice over the ground in a large area, especially in the polar regions

identity the set of qualities, beliefs, appearance, and history that characterises an individual or group

import a good or service brought into one country from another country. Along with exports, imports are one of the two key elements of international trade.

inclusion the idea that all people are involved in society, no matter their culture or how they choose to live

income money received from work and investments

income tax a tax imposed by governments on the income generated by businesses and individuals

income tax deduction a business expense you have paid for that can reduce the amount of tax you have to pay

independent a candidate or elected official who does not belong to any political party

Indigenous identity linked to sacred traditions, history and traditional land

infiltration process where water (rain, hail or snow) soaks into the soil

infrastructure physical and organisational requirement needed for the operation of a society; for example, roads, water supplies

initiation ceremony a ceremony to mark the passage of girls and boys into adulthood

inquiry question an open-ended question to prompt an investigation

interest money paid regularly at a particular rate for the use of a loan

interest rate a fee for borrowing money, expressed as a percentage of the total loan amount

internally displaced person a person forced to flee their home and shelter elsewhere within their country's borders

interpretation an explanation of the past, for example about the significance of an individual, event or development, and its relationship to continuity and change and/or causes and consequences, based on evidence from historical sources. There may be more than one interpretation of a particular aspect of the past.

inundation flooding of an area

Iron Age the period when people used iron to make tools and weapons, between 1200 and 500 BCE

isobars lines on a weather map that show areas with the same air pressure

J

judiciary the Australian courts that have the power to interpret and apply the law

K

khadar a type of soil that is fertile because it sits below the flood level

kinship extended family relationships in Aboriginal and Torres Strait Islander societies that are important for sharing culture and organising society. For example, a mother in the kinship system refers not only to a woman's birth mother, but also to her sisters.

kowtow to kneel and bow so low that your head touches the ground. In ancient China, everyone had to keep their head bowed if they were addressing the emperor.

L

labour resources the intellectual and physical skills of workers used to make goods or provide services

land transfer duty tax paid when buying a property, based on its value

left-wing advocating for greater social and economic equality

legacy something handed down from one generation to the next

legal precedent decisions by a judge that are followed in similar cases

legion the main fighting units of the Roman army of about 6000 men. Legions were further broken up into six cohorts.

legionary an ancient Roman soldier

legislature the written law as created by parliament

levee a wall built next to a river to stop it from overflowing

linear a pattern that follows a straight line, such as development along a road or river

liveability a measure of the qualities and characteristics of a place where people live

liveable easy or pleasant to live in

lobby group a group that influences politicians and people in public office

loess a type of fertile soil found in the Yellow River in China

low-income country country with an average annual income of US$1045 or less per person

M

ma'at the order and balance in the Egyptian world and the heavens that also formed the basis of the principles of truth, order, balance and justice and which underpinned law in ancient Egypt

magistrate an elected official of the Roman Republic charged with running the city. Once a man had served as a magistrate he could join the Senate. Consuls were the two highest magistrates.

malnutrition lack of proper nutrition from one's diet, leading to health problems

Mandate of Heaven the right to rule given to a king or emperor in ancient China by the gods. If the leader was selfish or cruel, it was a sign the gods had withdrawn his mandate to rule. Natural disasters such as famines and floods were also signs of heaven's displeasure with the king.

manufacturing process of making products

market when producers make and sell goods and services to consumers

market economy where the availability and pricing of goods and services is driven by demand from consumers; see also free economy

mateship a bond of friendship and support between equal partners

meander a bend or curve in a river or road

media mass communication through broadcasting, publishing and the Internet

megafauna large animals over 40 kilograms, including extinct Australian megafauna such as the marsupial lion

meteorologist a scientist who studies and forecasts weather and atmospheric conditions

midden waste deposits from meal preparation, often containing bones and shells, which provide evidence of what the people living in a certain area ate

middle-income country country with an average annual income of US$1046–$12 375 per person

migrants people who have permanently moved from one region to another

minority government where no party has a majority of members in the house that forms government. A minority government can only be formed with the support of independent and minor party members.

mitochondrial DNA (mtDNA) a circular, double-stranded DNA molecule that is inherited solely from the mother; both sons and daughters inherit their mother's mtDNA but only daughters pass it on to their offspring. It is used to trace human origins and population migrations.

moiety a group in society that coexists with only one other group in society. Marriage can only take place between members of opposite moieties.

monarchy rule by a single ruler who inherited the role

monsoon seasonal wind, occurring in the Asia and Pacific regions, that brings large amounts of rain

mortgage a secured loan where the lender can take possession of the property if the borrower fails to meet their regular loan payments

multicultural embracing and respecting multiple cultures and backgrounds

multi-faith embracing and respecting multiple religious faiths

mummification preparation of a body for the afterlife in ancient Egypt. The major body organs were removed (except the heart) and the body was washed, embalmed and wrapped in bandages.

N

nations tribal groups of the First Nations Peoples of Australia

natural resources resources from nature such as coal, fish, timber, wheat and milk

Neolithic relating to the New Stone Age (between 10 000 years ago and 2000 BCE) when people used polished stone implements and farming commenced

net income the amount of money left when expenses are subtracted from income

nirvana a place of perfect peace and happiness in Buddism; it is the highest state a person can attain

nomads people with no permanent home who herd animals from place to place to find fresh pasture; those who follow this lifestyle are described as **nomadic**

non-renewable resource a resource that cannot be regenerated or replenished within a human timescale once it is used up (for example, coal, oil)

non-secular where the legal and government systems are based on religious teachings

O

oasis a place in a desert where groundwater has come to the surface, creating a green or fertile area

obelisk a monument made from stone with four sides and which tapers towards the top to a pyramid-shaped point

objective factors features of liveability that can be measured with data, such as the number of services or pollution levels

offset a method of indirectly reducing carbon emissions by compensating through activities such as tree planting or investing in renewable energy projects

oligarchy a small group of people who have control over a country

opportunity cost what you have to give up to purchase what you want

opposition the party or coalition of parties that has the greatest number of non-government members in the house that forms government

oral history information about the past obtained through spoken interviews or in-depth conversations concerning experiences, recollections, reflections and lore

orographic rainfall rain that occurs when warm, moist air is lifted over a mountain

ostraka shards of broken pots that were reused as voting 'ballots' cast by Athenians at meetings of the *ecclesia*

P

Palaeolithic relating to the Old Stone Age (between 2.6 million and 14 000 years ago) when people used primitive stone implements

papyrus the first paper-like material; it was made from the papyrus plant that grew by the Nile River in Egypt

parliament in Australia a parliament consists of a representative of the King and a lower and upper house that propose, debate and pass statutory laws. Queensland is the only state parliament with no upper house.

parliamentary committee a group of parliamentarians appointed to explore specific issues

parliamentary inquiry an investigation into a particular issue that gives the opportunity for public input

parliamentary majority to form government and pass bills a party needs more than half of the members in the house that forms government

paterfamilias the oldest male and head of the ancient Roman family who had complete control over all family matters, including the right to decide if a baby should live or die

patrician wealthy landowners in ancient Rome whose families had held influential positions in society

payroll tax a tax payable by an employer when the amount of wages paid to employees reaches a certain level

pension a regular payment made by the government to people of official retirement age and to some returned servicemen and people with a disability

perceptions peoples' personal views or opinions about places, influenced by experience, feelings or cultural background

perioikoi traders and craftsmen in ancient Spartan society who were not considered citizens

perpetual resource a natural resource with an unlimited supply (for example, wind, sun)

personal loan money borrowed from a financial institution for personal use

perspective the outlook of an individual or group that is shaped by their worldview and context. It includes ideas, beliefs and attitudes, the cultural context and other factors including age, gender, social status, locality, ethnicity or national identity.

phalanx a battle formation used by ancient Greek hoplites to protect themselves in battle. They packed together tightly and overlapped their shields to provide a protective outer barrier to deflect arrows and spears. Spears in the front row were held forward to penetrate the enemy and those in the other rows were held skyward to deflect incoming missiles.

pharaoh the leader of ancient Egyptian society who was viewed as the link between the gods and the people, and therefore had both earthly and divine responsibilities

phenomena natural or human events or processes that can be observed and studied in geography, such as floods or migration

place for Torres Strait Islander Peoples, 'Place' is a space mapped out that individuals or groups occupy and regard as their own. It has varying degrees of spirituality and includes lands, waters and sky. For Aboriginal Peoples, 'Place' refers to the special places that exist within Country. They can include places of ceremony and initiation, birth and the provision of healing and healthcare; places of learning; and places for Sorry Business.

plebeians poorer farmers and craftspeople in ancient Rome who made up the bulk of the population

plunge pool a deep basin at the foot of a waterfall created by the action of the falling water

pluralist a belief that different cultural and religious groups can live peacefully together in society

polar the regions at the Earth's North and South Poles, characterised by extremely cold temperatures due to low solar energy and prolonged periods of darkness in winter

policy a proposal set out by political parties to take action or make laws

polis because of ancient Greece's mountainous landscape, small farming villages developed independently into a polis or poleis (plural). Each polis or city-state, such as Athens or Sparta, stayed independent rather than becoming a single Greek nation.

political party an organisation that represents a particular set of ideas and puts forward candidates in elections

population density a measure of how many people live in a particular region or area

population profile a graph showing the number of males and females of different age groups in a population

precipitation water that falls from the atmosphere to the ground as rain, snow, hail or sleet

prehistoric the period of time before the invention of writing in ancient Sumer in about 3500 BCE

premier a head of government in the states of Australia

price the amount of money that has to be paid to acquire a product or service

primary methodology methods of collecting firsthand data, such as through fieldwork, surveys, experiments or interviews

primary source a source that was created or existed at the time under study and includes books, letters, artefacts and buildings

prime minister the head of government in Australia

producer a person who creates and supplies goods or services

propaganda biased or misleading information used to promote a point of view

proportional representation a voting system where more than one person is elected according to the proportion of votes received

pseudoscientific falsely claimed as being based on the scientific method

public service staff working in government departments

pyramid huge pyramid-shaped buildings built as tombs for royalty or to house the gods in civilisations such as ancient Egypt

pyrocumulonimbus clouds thunderstorm clouds formed by intense fires, which are able to produce lightning and ignite new fires

Q

quaestor an important public official in ancient Rome who looked after finances and oversaw important legal cases such as murder cases

qualitative data non-numerical data based on qualities or characteristics from observations, interviews and written accounts

quantitative data numerical data based on measurements or counts

qigong a Chinese system of exercises, meditation and breathing control

R

racial vilification an act that could incite hatred or ridicule of people of a particular race

racism discrimination or threats against people due to their race or ethnic group

radiocarbon dating the method by which the age of something that was once alive can be estimated by measuring the amount of radioactive carbon present in the sample. Carbon breaks down at a known rate, so the age of the sample can be estimated.

rajah a chief or ruler in ancient India

random a pattern where things are spread without order or clear reason

rate a fee charged against ownership of an asset such as property; for example, people in Australia pay council rates based on the ownership of property

rebate a partial refund of the cost of an item

recession a period of negative economic growth

recycle convert into reusable materials

refugee a person threatened by conflict or a natural disaster who is forced to flee their home to seek safety, food and shelter in another country

regent a person who governs in place of a disabled or underage ruler

renewable energy energy that comes from natural sources, such as the Sun, wind or water, and which can be continuously replenished

renewable resource a natural resource that can regenerate or replenish within a human timescale (for example, trees)

representative democracy a type of democracy where representatives are elected by citizens to speak for them

required expenses day-to-day essential expenses

residual powers the powers of state governments not mandated as federal government powers in the Australian Constitution

resource anything of value that is used as an input in the production of goods and services

respect regard for the feelings or rights of others

responsibility something you are expected to do as a duty

revenue income generated from business or government operations

reverse osmosis the process in which a solvent is pushed through a membrane into another solution

right-wing to advocate for free enterprise and private ownership

rishi a holy Hindu sage or saint

riverine floods excessive rainfall leading to rivers overflowing their banks and inundating surrounding areas

runoff water that flows over the surface of the land and into rivers and lakes

S

safe water water that is safe to drink and free from contamination

salt pan shallow region where salt water has evaporated, leaving a layer of salt on the ground

SALTS an acronym used in geography for structuring graph analysis: Scale, Axis, Legend, Title and Source

sand dunes hills of sand formed over time by the wind

saturated zone an area deep below the soil where all the spaces between soil and rock particles are filled with groundwater

scam a dishonest and deceptive act designed to trick you

scarcity where demand for a good or service is greater than its availability, forcing consumers to make choices with limited resources to satisfy their needs and wants

scribe a well-educated and highly regarded person in ancient Egypt who could read and write, including complex hieroglyphics

sea change a decision to move to a coastal location for a better lifestyle

seasonal migration when people move from one place to another on a seasonal basis

secondary methodology research methods that rely on previously collected data, including government reports, academic sources and historical records, to analyse geographical patterns

secondary source a source created after the time under study, such as a textbook, website or documentary

secular something that is not connected to any religion or spiritual matter

secured loan a loan that is guaranteed by an asset like a car, which will be taken if the loan is not paid

sedimentary rock a rock that forms when layers of sediment are pressed together by the weight of overlying rock

self-funded retiree a person who has put away enough money through superannuation and investments to support themselves when they stop work

semi-desert a region that is dry but receives more regular rainfall than a desert

Senate the house of parliament that reviews legislation passed in the House of Representatives

senate an advisory body in ancient Rome appointed by leaders to advise magistrates and leaders on proposed laws and actions, particularly involving finance and foreign policy

service a paid act that is useful to a consumer; for example, work done by a plumber

services the provision of a public need, such as transport or communications, or supply of energy to the public, such as electricity, water or gas

sesterce an ancient Roman coin

settlements places where people establish communities and live

share one unit of ownership in a company that is traded on the stock market

share market (or stock market) where shares in companies are bought and sold

significance the importance that is assigned to a particular historical phenomenon. Establishing historical significance is an evaluative process that uses questions and criteria.

Silk Road a 6500-kilometre trading network of routes over land and sea that connected China to Asia, Europe and the Mediterranean. Camel caravans carried goods along the route through the mountain ranges and deserts of southern Asia.

slave a person who is owned by another person and is usually forced to work without payment. In ancient societies, slaves were at the lowest level.

social cohesion building shared values and a sense of engagement and common purpose for a community

spatial wealth the unequal distribution of resources, opportunities and services—such as education, jobs and social support—across different areas in a city or region. Areas with high spatial wealth have greater access to these resources, while disadvantaged areas have significantly less

SPICESS an acronym for the seven geographical concepts of Space, Place, Interconnection, Change, Environment, Sustainability and Scale, used to understand and examine geographic issues and relationships

spot fires small fires started by embers from a larger fire, often igniting ahead of the main fire

spring groundwater from an aquifer that makes its way to the Earth's surface

stakeholder a person or group who has an interest or concern in a decision or place, such as residents, businesses or government

standard the emblem of a Roman legion carried into battle. The Roman standard used to identify each legion was a silver eagle (or *aquila*) mounted on a pole.

stereotype an idea or assumption about a person of group that is inaccurate or harmful

stock market (or share market) where shares in companies are bought and sold

Stone Age the period lasting from 2.6 million years ago until 2000 BCE where people made and used tools made out of stone. Historians refer to two different Stone Ages – Palaeolithic, before the development of farming (about 10 000 years ago), and Neolithic, after the development of farming.

storm surges a quick rise in sea level because of strong winds during a storm, which can lead to coastal flooding

strata the different layers of rock and soil

stratigraphy the process by which the strata (layers of rock and soil) are dated. The age of artefacts found in each strata can then be estimated.

stupa a mound-like structure built to house ancient relics and used as a place of meditation for Buddhists

subjective factors liveability factors based on opinions or personal experiences, such as community feeling or sense of belonging

superannuation money that is put aside when you are working to be used when you retire

supply the amount of a good or service that is available to consumers

supply chain the network of businesses, resources and processes involved in producing and delivering goods and services, often affected by natural hazards such as floods or bushfires

sustainability protecting and maintaining environments, communities and economies for future generations

synoptic chart a map used to identify weather patterns and atmospheric conditions, such as air pressure, wind and rainfall

T

Taoism a Chinese philosophy focused on living in harmony with oneself, with nature and with the universe

tax a compulsory payment to the government from a worker's income or business profits, or added to the cost of goods and services

tax bracket the range of incomes used to calculate the rate of income tax to be paid

tax file number (TFN) your personal reference number issued by the Australian Taxation Office

tax return an annual statement of income and deductions made by a taxpayer

technological hazards hazards caused by human-made technology, such as oil spills or industrial accidents

timeline a list or graph that displays events in chronological order

TOASTIE an acronym for a method for structuring field sketches using Title, Orientation, Annotations, Scale, Time, Information and Edge

totem a natural object, animal or plant that represents its people's spiritual link to the land. For example, totems for the Wurundjeri are Bunjil the wedge-tailed eagle and Waang the Crow.

trade the buying, selling, importing and exporting of goods and services between individuals, businesses or nations

Traditional Custodian/Owner a First Nations person who is a member of a nation or tribe that has rights and responsibilities for an area of land or sea

transpiration water vapour leaving plants through their leaves

Treasurer the government minister who oversees finances

tree change the decision to move to a rural location for a better lifestyle

tribute a payment of goods from one country or state to another, usually given to show respect, submission or admiration

trireme large and fast ancient Greek warships powered by 170 oarsmen. The bronze prow at the front of the trireme was used as a battering ram to smash into other ships.

tropical used to describe the climate in the areas of the world between the Tropic of Cancer and the Tropic of Capricorn

tropical cyclone a spinning column of air that forms when a low-pressure system develops over warm tropical oceans (above 26.5°C). Cyclones are characterised by strong winds and heavy rainfall; they are also known as hurricanes or typhoons in different parts of the world.

turning point the point at which significant change takes place, directly or indirectly, and that is caused by a specific event

typology the process by which archaeological artefacts are placed in categories or types based on similarities

tyranny rule by an individual who seized power illegally

U

unemployment when people of working age who are available to work are without a job

uneven describes a pattern where something is spread out unfairly or unequally, such as water access or population density

uniform a pattern of spatial distribution where items are distributed equally over an area

universe all the things that exist in space, such as stars, planets and gas clouds

unlimited resource a resource that is not used up by human activity, like solar or wind energy. Also called a perpetual resource.

upstream the part of a river closer to its source, before it reaches lower-lying areas

V

valley a low area of land between hills or mountains

variable interest rate where the interest rate on loans and savings accounts can rise or fall over the term of the loan

varna class of men (in Hinduism)

virtual water the total amount of water needed to produce a crop or product

W

warranty a written guarantee from a business to repair or replace a product if it develops a fault within a specified period of time

water balance the flow of water in and out of a system

water cycle the natural process by which water circulates between the Earth's oceans, atmosphere and land, involving precipitation, drainage in streams and rivers, and return to the atmosphere by evaporation and transpiration

water poor lacking in natural water resources

water resource natural body of water that can be used for different purposes

water rich having a large amount of natural water resources

water scarcity not having enough natural water to meet the needs of a community or region

water stress when the demand for water is close to or greater than the supply available, even if the total amount of water seems high

water table the level below the Earth's surface where water is found

water vapour water in its gas state; when liquid water evaporates it becomes water vapour

waterfall a cascade of water falling from a height

weathering the breakdown of rocks by wind, water and temperature changes

weir a small dam used as a water supply

Y

yin and ***yang*** a concept from Taoism where all living things have two sides – *yin*, the female force: dark, cool and passive; and *yang*, the male force: light, hot and active

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Geography

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Civics and citizenship

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Economics and business

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World political map

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Key & map abbreviations

Aust.	Australia	Neth.	Netherlands
Azer.	Azerbaijan	Nor.	Norway
Ch.	Chile	NZ	New Zealand
Den.	Denmark	PNG	Papua New Guinea
Ec.	Ecuador	Por.	Portugal
Fr.	France	Sp.	Spain
Geor.	Georgia	UK	United Kingdom
		USA	United States of America

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