

Living in Australia

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



Source 1 An aerial photograph of Esperance in southern Western Australia

Source: Stockimages WA

chapter 4

4A

Where do Australians live and why?

- 1 What features shown in Source1 tell you that many people live in Esperance?
- 2 Why do you think people choose to live in Esperance?

4B

How can we make places more liveable?

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

4.1 Where early Indigenous Australians lived

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

Factors that influenced where Indigenous Australians lived

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

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

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

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



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

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

A spiritual connection to the land

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

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

Check your learning 4.1

Remember and understand

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

Apply and analyse

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

Evaluate and create

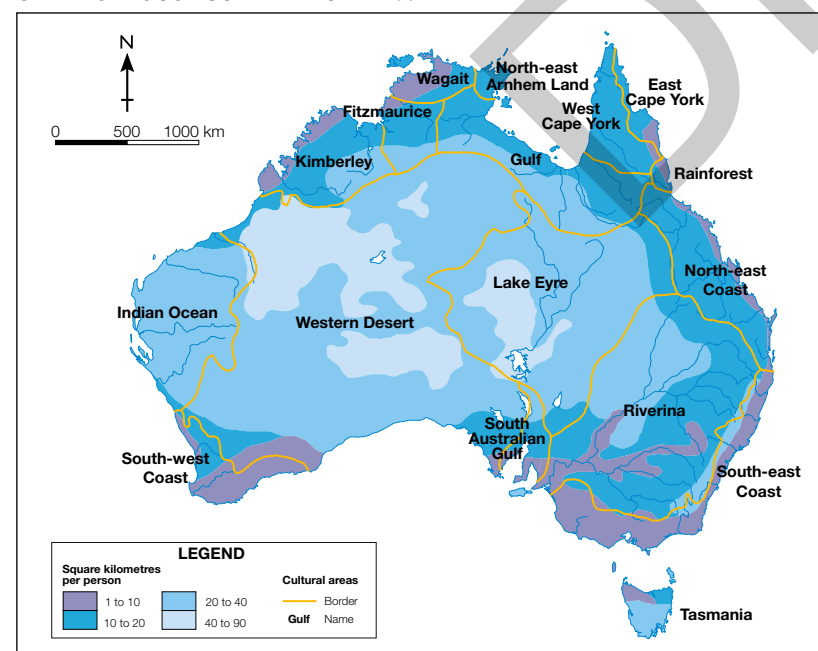
- 6 What do you think Aboriginal people may have used each of these resources for: shells, stones, plant fibres, coloured clay and bones?
- 7 When Europeans arrived in Australia they had a different view of land ownership and use than Aboriginal people. Why did these differences cause tensions and conflicts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

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



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

AUSTRALIA: LOCATION AND DISTRIBUTION OF INDIGENOUS AUSTRALIANS IN 1788



Source 2

Source: Oxford University Press

4.2 Indigenous communities

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

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

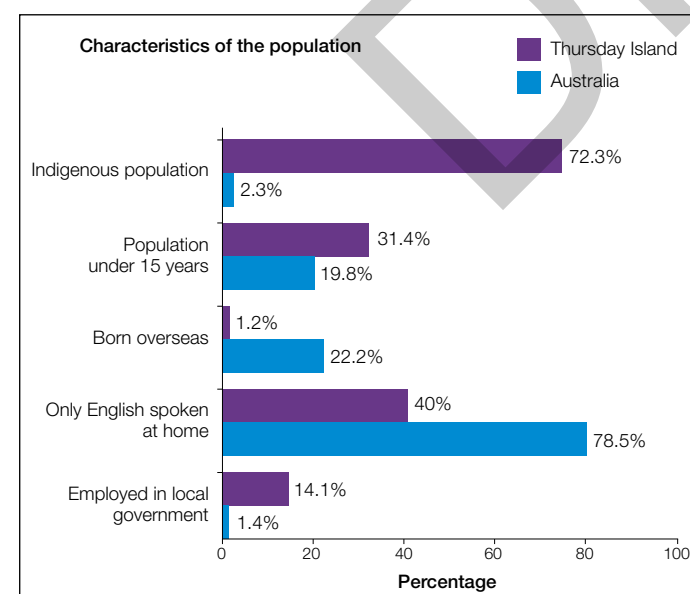
Case study: Thursday Island communities

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

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



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



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

THURSDAY ISLAND: TOPOGRAPHICAL MAP



Source 3

Source: Oxford University Press



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

Check your learning 4.2

Remember and understand

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

Apply and analyse

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

4.3 Where modern Australians live

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

Factors that influence where modern Australians live

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

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

Housing

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



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

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

Access to services

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

Access to jobs

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



The climate and environment

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

Cultural connections

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

Entertainment

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

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



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

Check your learning 4.3

Remember and understand

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

Apply and analyse

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

4.4 Living in large cities

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

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

Case study: Joondalup

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

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

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

Metropolitan Perth is one of Australia's fastest growing cities and is forecast to be home to an additional 1.5 million people by 2050. The state government has developed a plan to deal with this growth (known as Directions 2031) and this outlines where more than 800 000 new homes will be built. While the plan includes some new homes in the central city there will also be extra demands placed on the outer regions, including the city of Joondalup.



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

PERTH



Source 3 Map of Perth showing location of Joondalup

Source: Oxford University Press



Source 2 Lakeside Joondalup Shopping City is Perth's largest shopping centre with over 300 individual retailers.

Source: Stockingaes WA

Check your learning 4.4

Remember and understand

- 1 Where does the greatest growth in capital cities generally occur?
- 2 Why are some industries and some families attracted to the outer suburban areas?

Apply and analyse

- 3 Describe the location of Joondalup in the following ways:
 - a Using compass directions and distance
 - b Using the names of physical features.

- 4 Using the map and further research if needed explain why the Perth metropolitan area has spread along the coast rather than inland.
- 5 What are some of the challenges faced by city planners in the Joondalup area?

Evaluate and create

- 6 Construct a sketch of the aerial photograph of Perth's southern suburbs. On your sketch, locate and label the main transport links, the key physical features and shade the area covered by urban areas.

4.5 Living in rural areas

Many parts of Australia are used to raise animals and grow crops for food. The type of farming carried out in different areas is generally determined by climate and the availability of water. Farms vary from small properties used to grow crops, such as grapes or vegetables, to huge stations the size of European countries where cattle are raised.

Living on a farm can be very different from living in a city. It can be more difficult to access services, such as schools, shops and doctors. The population of many rural areas is declining as people move to cities for better job opportunities and a wider range of education options. There are also many advantages to living on a farm. Farms are often family-run businesses and this gives farmers the opportunity to be their own boss. There is also less air pollution, noise and traffic in rural areas. In recent years, advances in information and communication technology have reduced the disadvantages of living in a rural place.

Case study: Living on a dairy farm

Western Australia's dairy industry is centred on the town of Harvey in the far south-west of the state. There are about 160 dairy farms in the state producing about 350 million litres of milk each year. Most of this milk is consumed by people throughout Western Australia as fresh milk.



Source 1 A dairy herd in Western Australia.

The life of a dairy farmer is based on the twice daily milking of their herd of cows. Early in the morning the herd comes to the milking shed to be milked. The farmer cleans their udders and attaches suction cups that draw out the milk which is then stored in a large refrigerated tank. A truck collects the milk every day and transports it to a dairy factory where it is stored, treated, packaged and sent to shops.

Once the herd has been milked in the morning the farmer is kept busy with many other important jobs like feeding cows, fertilising paddocks, fencing and dealing with calves and sick animals. The daily routine ends with another round of milking in the late afternoon.

Near the small town of Benger, in the south-western district of Western Australia, lies the dairy farm of Sam and Kristy Cheetham. In common with many farms in Australia, this dairy farm is a family-run business.

The farm has grown over the years as the family has bought more land. Several workers are employed to help milk the cows twice a day and carry out other farm jobs, such as mending fences and looking after the grazing paddocks. These workers and their families also live on the Cheetham's farm.

The Cheetham's farm is located close to several small towns and some distance from larger towns and cities. The town of Benger has no shops other than a small service station and the closest supermarket is in Harvey, 12 kilometres away, as is the closest bank.

The closest regional city is the coastal city of Bunbury, one of Australia's fastest growing cities. The city has a wide range of shops and other services, such as hospitals and secondary schools. The Cheetham's oldest daughter, Charlotte, attends Edith Cowan University in Bunbury and is considering moving to the city to avoid the daily thirty-minute commute. The Cheethams need only visit Western Australia's capital city a few times a year for major services, such as an international airport or specialised health care. They also travel to Perth for sport and entertainment as most large events of this type are not held in regional areas.

Towns and cities in rural areas tend to be located a certain distance apart. This is determined by the size of the population and the services available in that town or city. Large towns (such as Bunbury, Mandurah and Busselton) offer a large range of goods and services and are spaced well apart. They need to draw in people from a bigger distance to support services they offer. Small towns, such as Harvey, only have a few shops and services to support the local community. If these small towns grow too quickly this can put a strain on the services provided.



Source 2 Uduc Road, the main shopping street in Harvey.



Source 3 Bunbury's town centre.

Check your learning 4.5

Remember and understand

- How does living in a rural area differ from living in a city?
- What different jobs are done on the Cheetham farm?

Apply and analyse

- Where would the Cheetham family go to buy each of the following?
 - A loaf of bread
 - A packet of breakfast cereal
 - A pair of jeans
 - A new car
- Look at Source 2. What services and supplies do you think might be available in Harvey?

- Explain why Charlotte is considering a move to Bunbury. What will happen to small rural towns such as Harvey if many young people such as Charlotte moved to large settlements?

Evaluate and create

- Work in a small group to list some of the features of rural areas that make them more liveable than urban areas. Rank these from the one you consider most important to the one you consider least important.
- Repeat this exercise for those features that you think make rural areas less liveable.
- Write a paragraph explaining your rankings.

4.6 Living in coastal areas

Eighty-five per cent of all Australians live within 50 kilometres of the coast. As a result, nine of our 10 largest cities sit on the coast. As well as huge cities such as Sydney and Melbourne, there are hundreds of smaller communities dotted along our coastline. Outside the capital cities, these coastal communities tend to be the fastest growing regions in each state. In Queensland, it's the Gold Coast and the Sunshine Coast, and in Western Australia, it's Busselton.

Coastal towns and cities are growing in size and population across Australia due to a range of factors. Many people decide to move to the coast because they want a more relaxed lifestyle near natural features such as beaches, bays and other landforms. Geographers refer to this trend as a 'sea change'.

Case study: Margaret River, Western Australia

The town of Margaret River lies about 270 kilometres south of Perth and was established to support local farming, particularly dairy farming. It has developed into a popular tourism destination and is particularly well known for its beautiful beaches, surfing and wineries.

The population of the town is about 7 000 people (2015 estimate) but like many coastal towns in Australia, this number is growing. By 2031 the population is expected to reach 10 200. By looking closely at the census data collected by the Australian Bureau of Statistics it becomes clear that the greatest growth is by people over the age of 65, particularly married couples.

As with any change, there are both benefits and costs to this population increase. Many of the hundred or so new homes built every year are built on the edge of the town on land that was once natural bushland and forest. The new residents also put demands on the existing facilities in the town such as transport including public transport and existing roads, water supply, waste water treatment, gas supply, electricity, internet broadband and care for elderly people.



Source 1

Source: Oxford University Press



Source 2 About 100 new homes a year are being built in the town of Margaret River.



Source 3 Many businesses in Margaret River rely on trade from tourists and from new residents.

This creates both challenges and opportunities for individuals and organisations. Builders in the town are experiencing an increased demand for their services as are real estate agents and many other local businesses. The local council also receives more money and this gives them the opportunity to build more services or improve existing ones.

As more Australians reach retirement age, it is expected that the demand for new homes and services such as health care and roads will increase dramatically in sea change towns like Margaret River.

Check Your Learning 4.6

Remember and understand

- 1 How does living in a coastal area differ from living in a city?
- 2 What is a sea change?
- 3 What is Margaret River's population expected to be in 2030? How many extra people is this from the 2015 estimated population?
- 4 As more people retire in the next few decades it is expected that Margaret River's population will increase. Why is this the case?

Apply and analyse

- 5 In a small group, brainstorm the individuals and organisations that will benefit from the growth of the population. Share your ideas with the rest of the class.

- 6 Can you think of some people who would not welcome this population change?
- 7 Some people are worried that the growth of this town may lead to an increased risk of bushfires. Why do think this is the case?

Evaluate and create

- 8 Using the example of Margaret River or another coastal town you know well, write a newspaper report (including two pictures) on the challenges facing town planners in expanding coastal towns.

4.7 Living in remote places

Most Australians live in large cities on the coast, with very few people living in the centre of the continent. Much of the interior of Australia is **desert** or semi-desert, with large distances between towns and settlements. Geographers refer to these areas as remote because people living in these areas have difficulty accessing some goods and services. Providing basic services (such as roads, food, water, telephone and Internet access) to remote communities can be difficult and expensive.

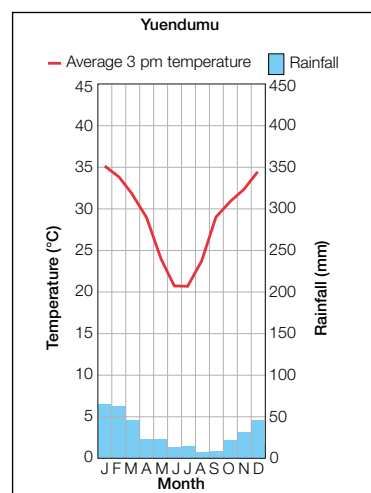
A high proportion of Indigenous Australians live in regional and remote areas – almost half of the population compared with just 13 per cent of the total population. For many Indigenous Australians this decision is based on a deep connection to the land that began thousands of years ago.

Living in the desert

Australia is the second-driest continent in the world, after Antarctica. Seventy per cent of our continent receives less than 500 millimetres of rainfall each year. This low rainfall has produced large deserts across much of inland Australia. Deserts are some of the harshest places on Earth. The people who live in desert communities must overcome many challenges.



Source 1 The Yuendumu Pool opened in 2008. Children can only swim here if they regularly go to school.



Source 2 Yuendumu climate graph

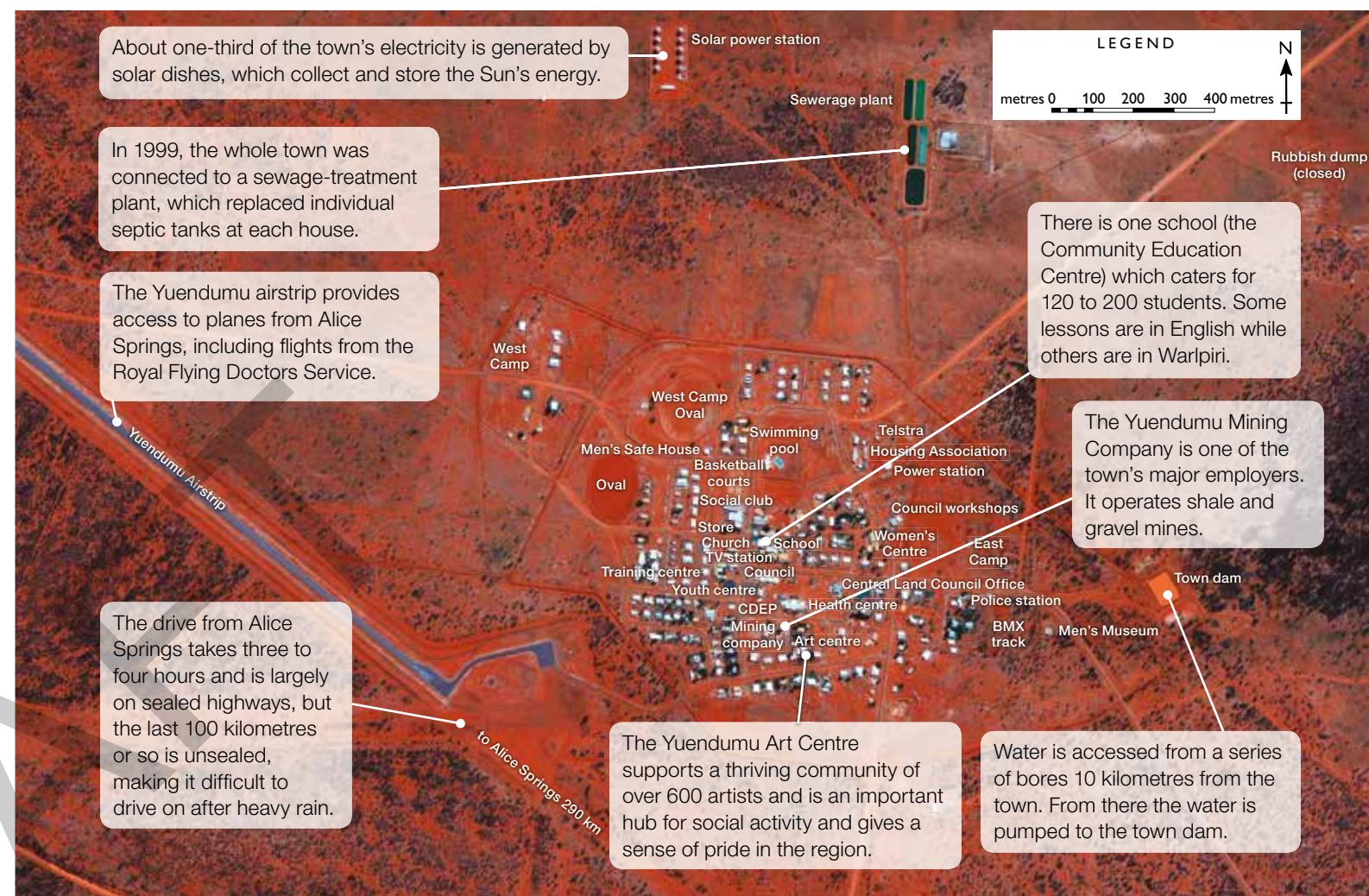
Case study: Yuendumu

One desert community is based in the town of Yuendumu, located 290 kilometres from Alice Springs in the Northern Territory. Not only is it located in the Tanami Desert, it is also one of the most remote places in the world. It is so remote that few locals have ever seen the sea.

The Warlpiri people

The Warlpiri people of Yuendumu do not see land as something to be owned. Instead, they believe that they belong to the land. This deep sense of connection to a particular place can be very difficult for non-Indigenous Australians to understand. In the same way, Warlpiri people find a system of land ownership difficult to understand.

The Warlpiri system of family and relationships is complex. A crucial part of any Warlpiri child's education is to learn about this system. It helps them to understand the natural and social world and a person's place within it. This system binds the Warlpiri people to each other and to the land.



Source 3 Yuendumu satellite image

Problems and challenges

Living in Yuendumu presents many challenges. The isolation from other places is the most obvious of these, however in recent years sealed roads, the airstrip, telephones, television and the Internet have helped to connect Yuendumu to the outside world. Many older people in the community, however, worry that better transport and communication will break down the customs of the Warlpiri people.

As with other remote Aboriginal communities, health problems, such as eye diseases, are common. Substance abuse among young people, particularly petrol-sniffing, was once a serious problem but a strong community response has largely brought an end to this practice. This involved providing young people with a better range of activities and making substance abuse unacceptable.



Source 4 The solar power station provides 50 per cent of daytime electricity needs to Yuendumu and enables significant reduction in the diesel fuel used in power generations in the community.

Living in the Pilbara

Australia is a mineral-rich country. We have the world's largest deposits of brown coal, mineral sands, nickel, uranium, zinc and lead. We also rank in the top six in the world for reserves of other minerals, such as bauxite, black coal, diamonds, copper, gold and iron ore. Iron ore is used to produce steel, which is an important part of many industries around the world. Some of the world's largest and richest iron ore deposits are in an area of Western Australia known as the Pilbara.

Some mining workers live in towns in the Pilbara close to the mines where they work, such as Tom Price, Newman and Paraburdoo. These towns can be hard places in which to live as they tend to be very isolated. Their remote location means that some goods and services can be difficult to access. The perception of these towns as less liveable than other centres in Australia means that workers are offered very attractive salaries and conditions to come and work in the remote Pilbara region. Many miners prefer to live a FIFO ('fly in, fly out') lifestyle. This means that they live in large cities, such as Perth, for two weeks and then fly to the mines to work for two weeks. While this type of routine may suit single workers, married workers generally find that this places a strain on their families.

AUSTRALIA: MINERAL, URANIUM AND COAL RESOURCES



Source 5

Source: Oxford University Press

Case study: Tom Price, Western Australia

In many ways Tom Price is a typical mining town. It is home to about 2700 people, almost all of whom are involved, directly or indirectly, in the mining industry. Of the workers in the town over the age of 15, almost 50 per cent work in the mines. Half of these workers categorise their jobs as machinery operators or drivers.

The children who attend one of the three local schools almost all have at least one parent employed at the mine. The local high school works in partnership with the international mining company that owns and operates the mine, Rio Tinto, to educate students about jobs in mining. The supermarket, milk bars, service stations, vets, chemists, doctors, hardware store and carpet cleaner all rely on the income from miners to keep their businesses running. While this is great

for the town when the demand for iron ore is high, it can cause problems when demand falls. Industries and places that rely on selling one resource, such as a particular mineral, are sometimes referred to as being in a 'boom or bust' cycle.

Another problem facing the residents of Tom Price is a shortage of homes. During boom times, new workers and people looking for work at the nearby mine arrive regularly and need accommodation. This demand for housing means that house prices go up quickly, making it difficult for young adults in the town to buy a house. In the Pilbara mining town of Newman, for example, houses tripled in price between 2004 and 2008.

skilldrill

Understanding population pyramids

Population pyramids are bar graphs that show the percentage of males and females of different ages in a population. They help geographers compare different groups within a population and also allow them to identify trends and patterns of change (for example, in a city or country). Follow these steps in order to understand population pyramids:

Step 1 Be sure to read the title of the population pyramid carefully. This will tell you exactly what population is being studied. Also look at the labels running along the bottom (percentage or total population) and through the middle of the pyramid (age groups).

Step 2 Population pyramids are organised so that the younger age groups are at the bottom and the older age groups are at the top. Percentages (or numbers) of men are always shown on the left-hand side and percentages (or numbers) of females are shown on the right-hand side.

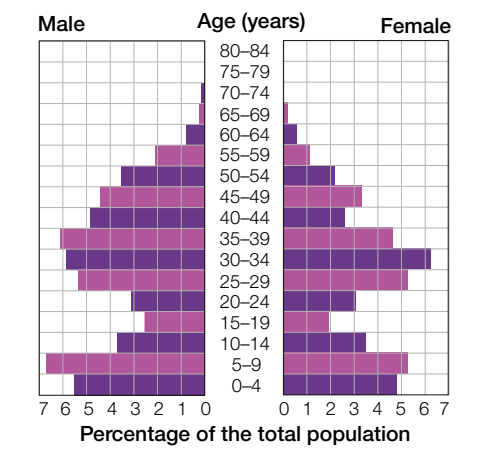
Step 3 To compare the percentage of males and females in the same age groups, read across the rows. The scale on the male side begins at zero and increases from right to left. The scale on the female side begins at zero and increases from left to right.

Step 4 To compare the percentage of only males or females, look up and down the columns.

Apply the skill

- 1 Using Source 7, complete the following tasks:
 - a What percentage of the population in Tom Price is girls aged 10 to 14?
 - b Are there more men or women aged 35 to 39 in Tom Price?
 - c Which is the largest single group in Tom Price?
 - d Is there a greater percentage of males or females in Tom Price? Why might this be the case?
 - e Which group in Tom Price is the smallest? Try to estimate what percentage of the total population is made up by this group.

Source 6 Tom Price iron ore mine in Western Australia



Source 7 Population pyramid for the town of Tom Price Western Australia

Check your learning 4.7

Remember and understand

- 1 What services are difficult to supply to remote areas?
- 2 Why don't many people live in the centre of Australia?
- 3 Why don't the local Warlpiri people just move to a different area with more services?
- 4 How many people live in the town of Tom Price and what work do they do?
- 5 Why do some people choose FIFO?

Apply and analyse

- 6 Use the information provided in Source 3 to create a table listing all of the services available in Yuendumu. List each of the services under the following headings: water and sanitation; transport; power; industry; education; and recreation.
- 7 How does the land tie the people of Tom Price and Yuendumu to their remote locations?

4A rich task

Living on Macquarie Island

Macquarie Island is one of the most remote places on Earth. It is located in the Southern Ocean, approximately halfway between Australia and Antarctica. Macquarie Island is an Australian territory and home to about 40 scientists in summer and about 20 in winter. They live and work in the research station on the northern tip of the island. At the station there are facilities such as buildings in which to sleep and eat, a diesel power station, a greenhouse for growing vegetables, helicopter pads and even a brewery. From here the scientists explore the island and try to find out more about the island itself and the animals and birds that live there.



skilldrill

Preparing fieldwork sketches

Fieldwork sketching helps geographers record and label important aspects of the landscapes they are investigating. It is a skill that you will need to practise before taking part in any field trips.

Apply the skill

Imagine you are on a field trip to Macquarie Island and that the scene in Source 1 is in front of you. Follow these steps to create a field sketch of the scene and use the map to help you label the key features.

Step 1 Boundaries and border: Establish the boundaries of your landscape and draw a border of the correct shape.

Step 2 Sketch outlines: With a graphite pencil, lightly sketch the main landscape lines. If there is a horizon in the scene put this about one-third from the top of the frame.

Step 3 Details: Keeping in mind the features on which you want to focus, add detail to your sketch. Label those parts of the scene that you consider to be most important.

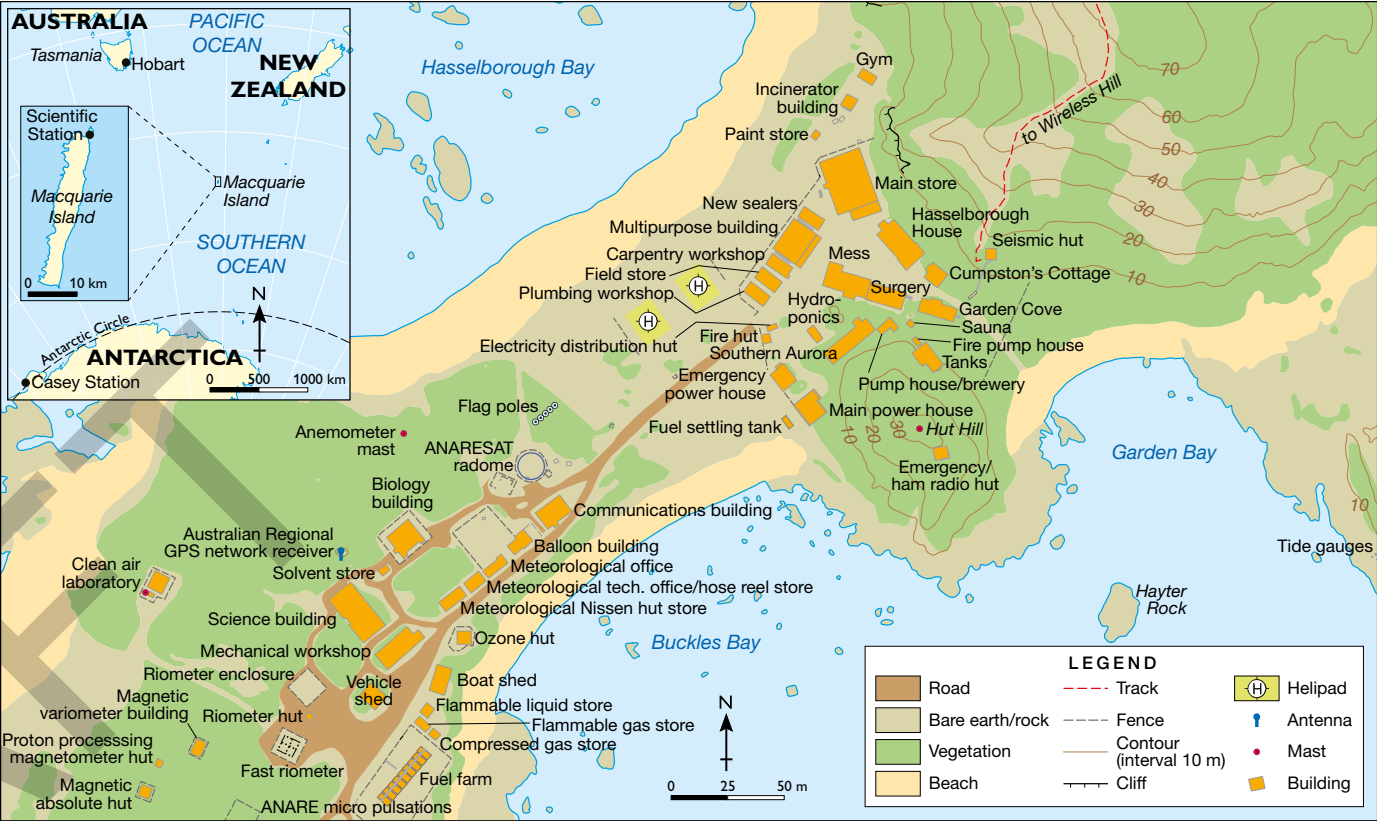
Step 4 Shade: Add shading, which helps to establish depth in your sketch and to show the shape of objects.

Step 5 Colour: Add some colour if you wish. Do not try to copy every subtle colour of nature; just give a hint of the right colour.

Step 6 Finishing touches: Label your sketch with the location and date.

Source 1 Oblique aerial view of the scientific base on Macquarie Island

MACQUARIE ISLAND SCIENTIFIC STATION (INSET: MACQUARIE ISLAND'S LOCATION)



Source 2

Source: Oxford University Press



Extend your understanding



- 1 Why is Macquarie Island considered remote?
- 2 Use the scale on Source 1 (inset) to estimate the distance from Hobart to Macquarie Island.
- 3 Consider the challenges faced by those living in remote places.
 - a What challenges do you think the scientists on Macquarie Island would face?
 - b In what ways are these challenges similar to those faced by people living in a remote region on the Australian mainland? In what ways are they different?
- 4 How do you think people on Macquarie Island access supplies?
- 5 How do you think modern communication technology, such as satellites and the Internet, help to overcome some of the challenges faced by scientists on Macquarie Island?
- 6 What difficulties might the scientists experience travelling to their work sites?
- 7 Macquarie Station is used for scientific research but is also a home to a team of scientists and researchers.
 - a Find three features of the station that show that this is a place where people live.
 - b Make a list of the buildings that are used for science and research.
 - c What do the names of these buildings tell you about the type of research that is undertaken on the island?
- 8 Compare the oblique aerial photograph of the station (Source 1) with the map (Source 2).
 - a What is the large circular object in the centre of the photograph?
 - b What colour is the hydroponics building? What is hydroponics and why is it important in this place?
 - c In which direction was the photographer facing?

4.8 Strategies for improving liveability

Over time, cities change and grow and the needs of people living in cities also change. To maintain and improve the liveability of a city, the services and facilities provided by governments and councils need to be regularly reviewed. Experts within government, universities, private business and community organisations, including geographers, are needed to identify problems in our cities and offer solutions.

In developing strategies to improve the liveability of our cities, planners must first identify the problems and their underlying causes, identify the impact on liveability, and then come up with strategies to try to overcome the problems. Source 1 shows some of the liveability issues currently facing people in Australian cities along with some of the strategies that have been suggested to cope with them.

The problem and underlying cause	The impacts on liveability	Some strategies for solving the problem
<p>Traffic congestion</p> <p>As cities grow, people need to travel further to work and school. Higher rates of car ownership see more cars on the road, leaving the road network struggling to cope.</p>	<p>Traffic congestion results in people spending less time at home and more time in their cars; increases levels of air and noise pollution; increases levels of stress and frustration for drivers leading to increased incidents of road rage.</p>	<p>Strategies include building new roads which take road-users around rather than through the city; increasing public transport options to encourage people to leave their cars at home; encouraging alternative modes of transport, for example, building bike paths for cyclists.</p> 
<p>Social inequalities</p> <p>As cities grow, some people within the community are left without work and are unable to access services such as schools, health care and housing.</p>	<p>Social inequalities can result in homelessness, unemployment and poverty; leaves some people with a sense of alienation from the community; can have a particularly negative impact on young people.</p> 	<p>Strategies include ensuring access to opportunities through good education facilities and public transport; assessing needs and providing support through community services; providing facilities for young people where they can get together and receive the help they need.</p>

The problem and underlying cause	The impacts on liveability	Some strategies for solving the problem
<p>Environmental issues</p> <p>As cities grow, they have a greater impact on the environment. Water resources are used up, pollution increases and more and more energy is required to service the greater population.</p>	<p>Environmental issues include air pollution from increased energy usage, land contamination from landfill, water shortages and damaged waterways.</p> 	<p>Strategies for sustainable use of the environment include recycling rubbish materials; restricting water use; developing buildings and cars to be more energy efficient; and using renewable energy sources.</p>
<p>Urban sprawl</p> <p>As cities grow, more and more housing is required at an affordable price. Housing estates on the outskirts of cities offer cheaper housing options, but they also push further and further outwards.</p>	<p>Urban sprawl reduces the amounts of productive farmland near cities; threatens the habitats of native plant and animal species; creates greater dependency on cars, which in turn increases levels of air pollution and traffic congestion. New housing developments can suffer from a lack of community services providing poor liveability for their residents.</p> 	<p>Strategies include increasing the density of housing in established suburbs closer to the CBD with more multi-storey dwellings; protecting native habitats with bushland corridors and by planting more native trees in urban areas; ensuring public transport services are provided to all new developments and establishing satellite business centres outside the CBD to encourage local employment and services for those living on city fringes.</p>

Source 1 Some issues faced by modern city dwellers and some strategies for improving liveability.

Check your learning 4.8

Remember and understand

- 1 How does traffic congestion reduce the liveability of a city?
- 2 What is urban sprawl and what causes it?
- 3 What is an alternative to urban sprawl when a city needs to increase its housing supply?
- 4 Name three environmental issues that have a negative impact on liveability.

Apply and analyse

- 5 Which urban issues described here affect people in the city in which you live (or in a city you know well)?
- 6 What would you describe as the biggest issue faced by people in that city?
- 7 Select one of the problems described in Source 1 and come up with a list of strategies of your own that you think could be used to reduce the problem and improve liveability.

4.9 Improving transportation

Australians are among the most car-addicted people in the world. About 90 per cent of all journeys made in Australia are made by car, with trains, trams, buses and bicycles accounting for the remaining 10 per cent. As the number of people in cities grows, so too does the number of cars. Many urban roads are struggling to cope. Road congestion, particularly during morning and evening peak times, is threatening the liveability of many of our large cities.

Former federal Infrastructure Minister Anthony Albanese described the problem like this: 'Urban congestion contributes to traffic delays, increased greenhouse gas emissions, higher vehicle running costs and more accidents. It is a tragedy that many parents spend more time travelling to and from work, than at home with their kids. Relieve urban congestion and we improve our quality of life.' He estimated that traffic congestion will cost Australian cities \$20 billion a year by 2020 unless the problem is addressed.

Strategies for improving transportation

Here are some solutions that planners around the world are experimenting with to improve traffic flows:

- **Change the roads**
 - Build more ring roads and bypasses that take traffic around the city centre and other busy places.
 - Change the traffic flow in the inner city by introducing a one-way system for most of the roads.
 - Make the main roads smarter by installing: overhead signs advising of variable speed limits; signs that use GPS satellites to provide drivers with traffic information; traffic lights on entry ramps; monitoring systems in the road surface to detect traffic incidents and congestion; overhead closed circuit television monitors; and traffic signals that give priority to public transport.

- **Get people off the roads**
 - Introduce a 'park and ride' system where drivers park their cars on the edge of the central business district (CBD) and then travel to the CBD by bus or train.
 - Ban cars from the CBD.
 - Charge car drivers a toll when they enter the city centre.
 - Develop a better public transport system that encourages people to get out of their cars into trams, trains, buses and ferries. The world's best public transport systems involve all these modes working together on a single ticket and with an integrated timetable rather than as individual pieces of different puzzles.
 - Encourage people to walk or cycle by building more footpaths and bike lanes and promoting the health benefits of walking and cycling.
- **Keep doing what we're doing**
 - Build more multi-storey car parks in the city centre
 - Build more roads to carry the increased traffic
 - Increase motoring taxes to pay for new roads through increases in petrol prices
 - Encourage private companies to build toll roads.

Source 1 Traffic on the Kwinana Freeway during peak hour in Perth



Source 2 Graphic representation of the paths taken by 380 taxis in a single day in London. Bright splashes of light show paths taken by many taxis while darker areas have seen few, if any, taxis.

Check your learning 4.9

Remember and understand

- 1 What does the graphic representation of London taxis (Source 2) reveal about transport flows in large cities?
- 2 What are the causes of traffic congestion?
- 3 What problems does traffic congestion cause for people and cities?

Apply and analyse

- 4 Here we have described many possible solutions to traffic congestion.
 - a Which do you believe are the three solutions most likely to relieve congestion? Explain your response.

- b Which solutions do you think are most likely to make congestion worse rather than better? Explain your response.

Evaluate and create

- 5 As the planner responsible for traffic congestion in your city, you have chosen one of these solutions to put into place. Design an advertising campaign that explains this solution to drivers and the general public. Remember to explain it clearly and simply and to point out the benefits of this solution for drivers and for all the residents in the city. You may choose to create a poster, brochure, bumper sticker or short TV or radio ad explaining your campaign.

4.10 Improving liveability for young people

When trying to improve the liveability of a town or city, planners need to take into account the varying needs of people of different ages. The needs of children and young people are obviously very different from the needs of older retired people. Each of these groups, however, benefit from having special attention paid to their particular needs. Here we will look specifically at strategies for improving the liveability of places for children and young people.

Strategies for young people

The views of young people need to be taken into account when planning for more liveable cities. Some of the key liveability factors relevant to a younger population are:

- **Public transport**

Young people are the community group most likely to be dependent on public transport services. Public transport needs to be safe and reliable to encourage young people to use it. Public transport routes also need to be designed to meet the needs of young people with services regularly going past local schools, shops, entertainment and sports facilities.

- **An attractive and healthy natural environment**

When cities experience environmental issues such as air pollution, those often the worst affected are children, and negative impacts to their health can last a lifetime. With housing density increasing, the need for green spaces is increasing. Access to public parks and playgrounds provides healthy natural environments for children who are living in housing without gardens. These playgrounds also provide opportunities for children to develop their coordination and physical strength while enabling them to make friends and socialise.

- **Good schools and other educational facilities**

Schools need to have teaching spaces that offer the flexibility for group work and individual work and also provide good outdoor spaces. As students



Source 1 Venues designed for young people can increase youth participation in the community.

use more technology in the classroom, schools need to adapt to meet the needs of this new technology by providing fast Internet and Wi-Fi.

- **A wide range of recreational environments for young people**

One of the keys to improving liveability for young people is providing good public spaces. Public spaces should be designed to cater for their specific needs and interests. These include sportsgrounds and facilities such as skate parks and skating rinks, and entertainment facilities including cafés, cinemas and music venues. Community festivals and events can also be organised to include activities specifically designed to interest young people.

- **Services for young people at risk**

Vulnerable young people who are at risk from abusive family members, homelessness or substance abuse need special attention to ensure that they are not disadvantaged by their circumstances and can reach their potential. Community services can provide support through counselling and mentoring, or by helping to arrange alternative accommodation.

Case study: 'Our Youth – Our Future', Western Australia

In 2012, the Western Australian government released a set of goals designed to improve the lives of young people. Western Australia has Australia's fastest growing youth population. People aged between 12 and 25 years living in Western Australia make up about 20 per cent of the state's total population.

The Western Australian government is working with communities and consulting with young people to improve liveability in the areas that matter most to them. Through policies, services and community programs they aim to:

- increase young people's participation in community life through sport and recreation, culture and arts, and volunteering
- provide opportunities for young people to learn life skills and prepare for their working future
- create environments that appeal to young people and encourage healthy lifestyles.

The Esplanade Youth Plaza

One example of a community space created specifically to appeal to young people and improve liveability is the plan for a youth plaza on Fremantle's Esplanade Reserve. The local council and the contractor, Convic Skateparks, provided information



Source 2 Skate parks are a great way to make open spaces more appealing to young people.

on the various options available and collected feedback from the community through workshops and online surveys. The new youth plaza has an area designed for skateboarders and BMX riders. Other features being considered are a basketball half-court, table tennis tables, a stage area for youth concerts and children's play areas.

Check your learning 4.15

Remember and understand

- 1 What are three liveability issues that affect young people?
- 2 How does a skatepark provide a more liveable community for some young people?
- 3 What facility or service would you like to see in your local community to make it more liveable for you?

Apply and analyse

- 4 Consider the case study from Western Australia above.
 - a What vision does the Western Australian government have for young people?
 - b Provide one example of a service or a place that you think would make a local community a more liveable place. What would be the expected outcome from your plan?

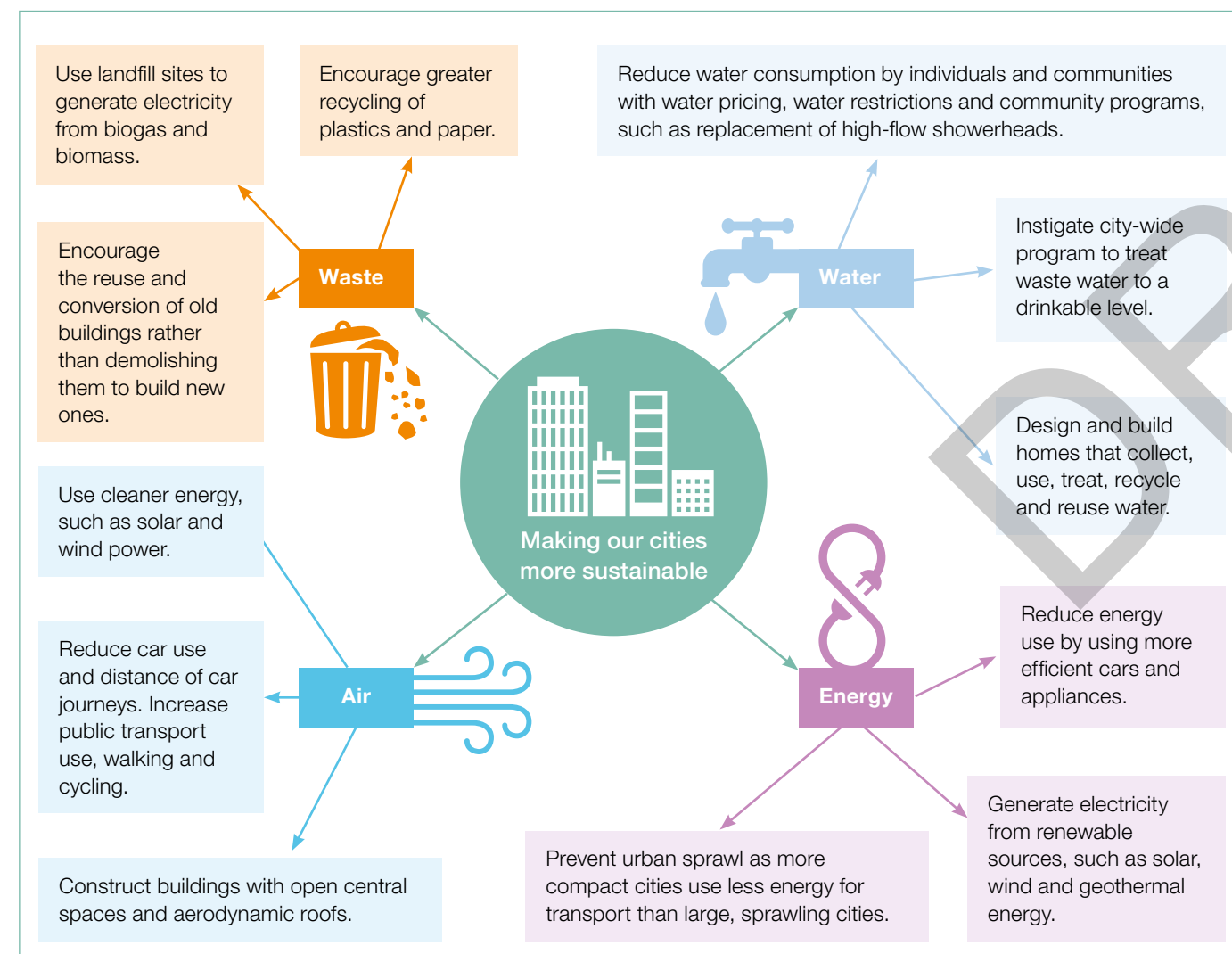
4.11 Improving sustainability

The quality of the environment has a big effect on the liveability of a place. Cities consume large amounts of **natural resources**, such as water and energy. They also produce substances that are harmful to the environment, such as **greenhouse gases**, as well as solid waste, such as sewage and rubbish. Rapidly growing cities in developing countries are struggling to deal with these and other environmental issues.

In the last decade, Australian cities have become more sustainable by reducing their impact on the environment in many significant ways. We now use less energy, produce less rubbish, consume less

water and have cleaner air than was the case at the beginning of this century. This is largely due to new technologies in such things as power stations and the phasing out of old technologies such as less efficient cars that pollute more.

There have also been changes in behaviour that have been encouraged by governments. City dwellers, for example, now take for granted that recyclable material is not waste and should be separated out in the weekly rubbish collection. Local restrictions on the use of water in households have also helped to make our cities more sustainable. But there is still much more that can be done.



Source 1 Concept map showing strategies for a more sustainable city

keyconcept: Sustainability

Clearing the air in Launceston

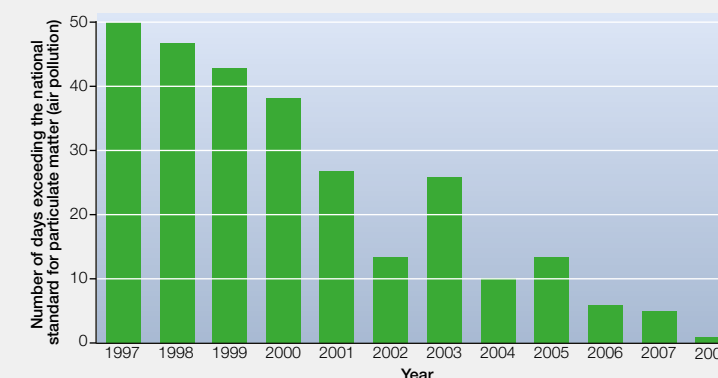
The city of Launceston in northern Tasmania was once one of Australia's most polluted cities. This was due to a combination of natural processes and human activities. About two-thirds of households in the early 1990s used wood fires to heat their homes and this produced large quantities of smoke, particularly during winter. Launceston's location in a valley meant that the smoke was trapped and people's health began to suffer. Researchers linked Launceston's smoke to high rates of asthma and lung disease and likened it to the effects of tobacco smoking.

In 1997 there were 50 days in which Launceston's air exceeded the national standard for the amount of pollution. By 2008, this had fallen to only one day a year. This was due not to wood heaters but to a nearby bushfire. This dramatic change is largely because of a government scheme where Launceston residents were given \$500 to change their home heating from wood fires to other methods, such as a gas fire or electric heater. More than 2000 residents have so far taken advantage of the scheme and thousands of others have changed their heating methods because of the publicity generated.

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



Source 2 The hills that surround Launceston trapped wood smoke, making it one of the world's most polluted cities.



Source 3 Air pollution in Launceston, 1997–2008

Check your learning 4.11

Remember and understand

- 1 Why did Launceston have such poor air quality?
- 2 How did the people of Launceston improve their air quality?

Apply and analyse

- 3 Solutions to some of the environmental problems faced by city dwellers can be easy to find but hard to put into place. Give some examples of solutions that have been difficult to put into place.
- 4 Select one of the four environmental issues shown in Source 1.
 - a Explain why this is an issue in cities.
 - b Which of the three solutions given do you think has the best chance of helping to address the issue?
 - c Can you think of two more solutions? Share these with your classmates and use the discussion to describe how cities can be made more sustainable.
- 5 Examine Source 3.
 - a Describe the change in air pollution in Launceston from 1997 to 2008.
 - b Give a possible reason for the sudden increase in pollution in 2003.

Evaluate and create

- 6 Cities are one of the main causes of global climate change as much of the gas that traps heat comes from burning fossil fuels in cities. In a small group discuss how cities can lead the way in reducing the emission of these gases.

4.12 Improving spaces for wildlife

When planning to improve the liveability of places for people, it is important to also consider the impacts this has on the habitats of native wildlife. Koalas are one of Australia’s most loved native animals, but despite this their future in many parts of Australia is very uncertain. As bushland on the edges of our towns and cities is cleared for farms and houses, koalas are losing their habitats. Improving the liveability of these places for people is having negative effects on the liveability of the same places for koalas.

Habitats suitable for koalas are made up of trees that serve three main functions:

- food – koalas rely on certain types of native gum trees for the food they eat; these only grow in certain parts of the country
- shelter – as well as providing food, trees provide koalas with protection from the weather and predators, such as domestic dogs
- corridors – these are spaces that link the areas of bushland where koalas live; they allow koalas to move between trees; the more small trees and shrubs there are growing in these corridors, the easier it is for koalas to move about without coming down to ground level where it is dangerous for them.

Over 80 per cent of the total habitat in Australia that was once suitable for koalas has now been cleared. Much of the remaining 20 per cent is also under threat from people. Because it is difficult to get accurate numbers of koala populations at any one time, geographers divide possible koala habitats into areas where populations are most common to least common. This gives them a good idea of where they most need to focus their efforts to conserve koala populations (see Source 3).

As well as losing their habitat, koalas face many dangers due to the expansion of our cities. Each year, many koalas are hit by cars as they move between sections of bushland. Many others are attacked and

killed by domestic dogs. The recorded deaths of koalas in south-eastern Queensland over a 10-year period can be seen in Source 2.

Year	Dog attacks	Cars	Disease	Other	Total deaths
2001	114	324	303	488	1 229
2002	103	342	245	454	1 144
2003	94	342	180	558	1 174
2004	68	333	238	529	1 168
2005	60	234	262	410	966
2006	69	280	193	513	1 055
2007	68	287	179	678	1 212
2008	58	296	256	532	1 142
2009	76	248	210	738	1 272
2010	67	246	131	655	1 099
Totals	872	3 243	2 647	5 998	12 760

Source 2 Recorded deaths of koalas in south-eastern Queensland (including causes)
Source: Queensland Department of Environment and Resource Management, 2011)

Strategies to protect koalas

There are a number of strategies that we can implement to protect koalas and their habitat, despite the expansion of urban areas. The first, and most effective, strategy is to protect key koala habitats (and corridors) from future urban development. Conservationists are constantly lobbying councils and governments in order to protect areas like this. In many cases, however, cities and suburbs have already been built over koala habitat.

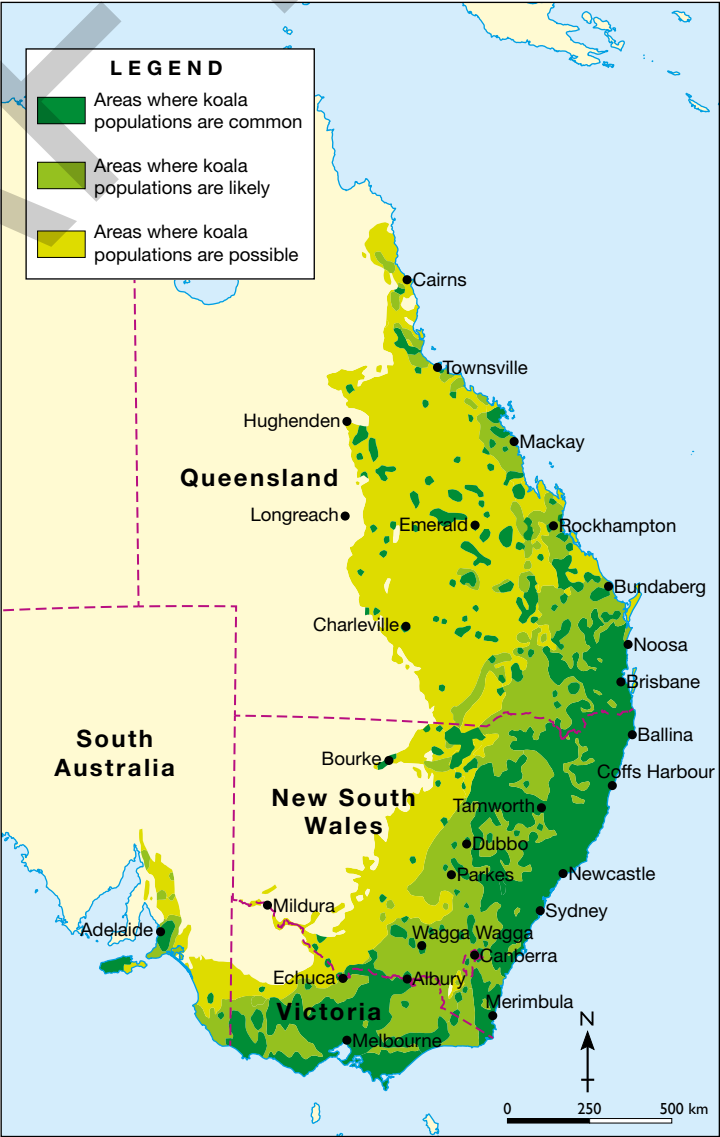


Source 1 Koalas often return to trees they consider their territory even if the tree is now in somebody’s front yard.

In these cases, there are a number of actions that can be taken to protect koala populations in the area:

- preserve and protect existing eucalyptus trees and plant additional trees
- plant trees and shrubs (such as wattles) for koalas to use as shelter
- protect koala corridors and plant smaller trees and shrubs in these areas
- erect koala-friendly fencing that koalas can easily climb over, through or under, allowing them to move around their habitat
- erect road signs warning of koalas, and lower speed limits on roads used by koalas to cross between areas of bushland
- keep domestic dogs separated from koalas by erecting fenced enclosures (called dog runs).

EASTERN AUSTRALIA: KOALA HABITAT AND POPULATIONS



Source 3 Source: Oxford University Press



Source 4 A young koala hit by a car is bundled into a blanket by a member of the Moreton Bay Koala Rescue team north of Brisbane.

Check your learning 4.12

- 1 As new homes and farms are built on the edges of our cities, how are koala habitats affected?
- 2 How much of the koala’s original habitat in Australia has been destroyed?
- 3 What are the three ways in which koalas use trees and shrubs in their habitats?
- 4 List three strategies that can be used to help protect koalas and their habitats.

Apply and analyse

- 5 Look carefully at Source 3.
 - a Where do koala habitats and populations tend to be?
 - b What connection is there between the capital cities on the map and koala habitats?
- 6 Using the data provided in Source 2 determine:
 - a the total number of koalas killed by cars in south-eastern Queensland between 2001 and 2010.
 - b What percentage is this of the total number of koalas that died over the same period?
 - c The leading cause of death among koalas is shown as ‘Other’. Provide three causes of death you think would be included in this category.

Evaluate and create

- 7 Prepare a media campaign to raise community awareness about the dangers facing koalas in Australia. You may choose to prepare a poster or a multimedia presentation warning people of the dangers facing koalas or provide some key strategies that people can implement to protect koalas living near their homes. Create a catchy slogan for people to remember your campaign.

4.13 Connecting through communities

A community is a group of people who share something in common. It may be the place in which they live, their religion, their interests or hobbies, their **ethnicity**, their school or their language. Every person on Earth is a member of one or more communities, some by choice and some just by being who they are. To make sense of all the world's communities, geographers take into account the features that all members of a community share. One way to classify these features uses the five Ps shown in Source 1.

A group of people who share the same goals and objectives often join together to form communities of purpose. They are able to achieve much more if they work together than if they work as individuals. One of Australia's largest communities of purpose is Surf Life Saving Australia (SLSA), which has over 150 000 members, virtually all of whom are volunteers. The shared vision of SLSA members is 'to save lives, create great Australians and build better communities'.



Source 2 Surf lifesavers making one of the many rescues carried out every year – they are an example of community of purpose.

Check your learning 4.13

Remember and understand

- 1 What type of community is a school?

Apply and analyse

- 2 Explain why SLSA can be considered to be a community of purpose.
- 3 Name three other communities of purpose.
- 4 Classify each of these groups under one of the five types of communities:

- a the Labor Party
 - b employees of BHP Billiton
 - c residents of Yamba in New South Wales
 - d a Scout group
 - e your family.
- 5 The surf lifesavers in Source 2 are members of a community of purpose. Why is it likely that they are also members of a community of place?

Types of communities



Source 1 Classifying communities

skilldrill

Drawing a concept map

A **concept map** is a visual tool used to show the links between different ideas or pieces of information. Each idea (or piece of information) is usually represented in a circle or box and the relationship between two ideas is shown by a line or arrow connecting them. Words on the line or arrow explain the relationship between the two ideas. Concept maps can be hand drawn or prepared using computer software.

To draw a concept map, follow these steps:

- Step 1** Draw and name the focus, central idea or main problem you are trying to explore. In the example in Source 3, this is 'My communities'.
- Step 2** Build the concept map by adding ideas related to the central idea.
- Step 3** Add a title to help the reader quickly understand your concept map.

Apply the skill

- 1 Construct your own concept map to show the communities you are connected to. Place your name in the centre box. Add the types of communities to the connecting lines. Choose from the five types of communities shown in Source 1, such as place.



Source 3 An example of a concept map

4.14 Liveability in communities

A community of place refers to a group of people with a common interest or goal. This common interest may be linked to where they live, work or spend a large part of their time. The word community can be used to describe groups like neighbourhoods, towns, workplaces, schools, sports clubs, church groups, or very large groups like members of the same religion, or citizens of the same country.

People connect with places where they feel included and safe. They connect through community services (such as schools, hospitals and libraries), job opportunities (such as the type and amount of work available) and entertainment and recreation (such as concerts, sporting events and festivals).

Check your learning 4.14

Remember and understand

1 What is a community of place?
2 How is the liveability of a community measured?

Apply and analyse

3 Use Source 4 to provide a grid reference for:
a a recreation facility c a source of employment
b a transport hub d an education facility

4 Bunbury is largely populated by families. What evidence can you find using Source 1 and 2 that the local community is made up of many families.

Community services

We are all part of a broad community based on where we live. This may be a suburb in a city, a town or a small settlement, but it can even be as big as a whole country. Governments and local councils supply a range of services to these communities, such as schools, hospitals, libraries, transport, parks and rubbish removal. Different communities require different services. For example, a community with a younger population might require more schools and facilities such as skate parks. An older community might require greater access to health care and retirement villages.

Job opportunities

Local communities provide employment opportunities or good access to places of work, training and education. Businesses and industries, as well as providing services for the community, also provide jobs. Some examples of businesses found in many local communities include shops, hairdressers, plumbers, banks and solicitors. An industry may be a one-person operation or a large manufacturing business that employs hundreds of people. Industrial areas are usually grouped together. Industries generally require large areas of flat land and access to power, transport and parts.

Entertainment and recreation

Leisure facilities such as basketball courts and skate parks are provided and maintained by local councils. Special areas are also set aside for recreation, such as parklands and sporting fields. These areas allow residents to socialise and exercise outdoors. In addition to these recreation areas, special conservation zones are set up by councils to ensure that native plants and wildlife are protected.



Source 1 Bunbury's centre provides community services, job opportunities, and recreation facilities to residents. Source: Stockimage WA



Source 2 Street directory map of Bunbury Source: Oxford University Press

4B rich task

Hamburg – a green city

The city of Hamburg in Germany is one of the most environmentally-friendly cities in the world. Green spaces, parks, woodlands and nature reserves make up 16.7 per cent of the urban area and 17 per cent of the city's total power usage comes from renewable sources like wind and solar. Hamburg is one of the 20 most liveable cities in the world and, in 2011, was named European Green Capital.

Hamburg is currently building an inner-city development called HafenCity in the location of the old port warehouses. HafenCity will provide housing for 12 000 residents and jobs for around 45 000 people. It will create 10.5 kilometres of new waterfront and 26 hectares of public parks, squares and promenades.

The HafenCity community will use 30 per cent less power thanks to environmentally-friendly design and materials and wind and solar-power technologies. Many rooftops will be covered in greenery to slow stormwater runoff and reduce heat from the development.



Source 1 An oblique aerial photograph of the HafenCity development in Hamburg, Germany. It will be Europe's largest inner-city development project.

skilldrill

Interpreting oblique aerial images

The photograph and illustrated plan provided are both what geographers call oblique aerial images. Oblique aerial images are taken on an angle from a high point. They can be taken looking down from a hill or mountain, or from an aircraft or hot-air balloon. Oblique aerial images are useful for geographers because they can show a much larger area than photographs taken from ground level (known as ground-level images) because the view is not interrupted by trees, houses or mountains. They are also useful because all of the features shown in them are easily recognisable. This is not always the case with images taken from directly above (known as vertical images or 'plan view' images).

When interpreting oblique aerial images, it is important to be aware of the following points:

- Oblique aerial images allow you to see the height and width of features on the ground. As a result it is possible to get an idea of the steepness of the ground or the height of a building.
- A major disadvantage of an oblique aerial image is that scale is inconsistent. This means that distances in the foreground and distances in the background cannot be calculated using the same scale. If you want to make a map or take accurate measurements of distance, you should not use oblique aerial images. Use vertical images instead that show the area in plan view.

Apply the skill

- 1 Examine the photograph of HafenCity shown in Source 1.
 - a Are the buildings in HafenCity (in the foreground) generally lower or higher than those in the background? How can you tell?
 - b Would the width of the channel behind HafenCity be easier to measure on a plan or oblique view?

Extend your understanding

Conduct some research on the Internet to find out more about the HafenCity development in Hamburg.

- 1 In what year was the project first announced?
- 2 When do the developers estimate the project will be completed?

- 3 How many homes will HafenCity contain once the project is complete?
- 4 Find some images of the HafenCity site before it was developed and compare them with Source 2.
 - a In what ways has the HafenCity site changed since development began?
 - b How has the HafenCity development improved the liveability of the city of Hamburg?
 - c HafenCity has been designed to be highly sustainable – using environmentally friendly building materials and wind and solar power. Using Source 1 on page 184, suggest three more ideas that could be introduced to improve the sustainability of HafenCity.



Source 2 A computer-generated plan of HafenCity from an oblique aerial view