

Unit 2 Geographies of interconnection

An inter-connected world

This is Gibraltar, an English territory that lies on the southern tip of Spain in a body of water that connects the Atlantic Ocean to the Mediterranean Sea. This means it is strategically significant for shipping between Europe and the rest of the world. For this reason, disputes over the territory have resulted in many wars over the last 500 years.

Though once heavily fortified to protect its inhabitants from invasion, Gibraltar is now highly accessible. It has a busy international airport, container port, a cruise ship harbour and is connected by road to Spain. Now home to almost 30 000 people, it receives almost 12 million tourists a year.

Connected to the world by trade, tourism, transport technologies and communications, Gibraltar illustrates how every place on Earth is

connected to every other place more than ever before.

4A

How do people connect to places?

- 1 Gibraltar is famous for a 426-metre high rock, known as the Rock of Gibraltar, which is a popular drawcard for tourists. Do you think the people that live within sight of the Rock every day would regard it differently than a visiting tourist would?
- 2 In what ways might a resident feel differently about Gibraltar compared to a tourist?

4B

How are people and places around the world connected?

- 1 Describe some of the ways in which Gibraltar is connected to other places around the world using evidence from this picture. Are there other likely connections that are not shown in this picture?

4C

How does trade connect people and places?

- 1 Gibraltar has little land that is suitable for farming and food production. Where do you think the people who live there get most of their food from?

Source 1 Gibraltar is a compact country at the southern tip of Spain. Its coastal location and access to many countries means it has been a highly sought-after territory over the course of history.

chapter

4

4.1 Understanding place

Everyone has places that mean something special to them. You can probably think of a place right now that has a particular significance for you. It could be a corner of your room where you listen to music, or a local sports ground where you train with your friends – somewhere that you identify with and has meaning for you. Indeed, this is how geographers define the concept of place – as parts of the Earth's surface that are identified and given meaning by people.

A place can be as small as your bedroom or as large as a continent. It can be a constructed feature, such as a building, or a naturally existing feature, such as a freshwater lake.

The key concept of place is essential to geographers. By dividing the Earth's surface into a series of identifiable places, geographers can better understand the natural processes and human activities that shape and change our world.

People may be attached to different places for different reasons, and places can mean completely different things to different people. For example, the tourists in Source 1 might perceive this place as an opportunity to see something unique and to photograph it. The bus driver who brought them here and the owner of the resort where they are staying may see it quite differently – as somewhere that provides them with employment and an income. The Indigenous people of the region, the Anangu, attach a very different meaning. For them, this place has a deep spiritual importance. It is part of their culture and is regarded as sacred. They have a duty to care for and protect it.

Interconnections between places

We all create places of our own by defining them and giving them meaning, and all of these places are interconnected. Geographers use different ways to understand and explain these interconnections.

No place exists in isolation. Not even a rock in a mountain riverbed or a single tree is isolated. Every place is interconnected with another. The place where you live is connected to a neighbourhood, the road outside the school connects it with different suburbs, and entire continents are connected to each other in many ways, too.

Some of the interconnections between places are the result of natural processes. The rock in the riverbed mentioned above, for example, may be connected not only to the other surrounding rocks but also to other areas entirely. Fast-flowing rivers, for example, wear down rocks into tiny pieces and then carry these pieces to the coast, where they are shaped into new features such as sand dunes and sandbars. This process links together the mountains and the coast.

Other interconnections are the result of human activities such as trade, transport and communication. These move people, goods, services and ideas between places, linking them together.

There are various ways that geographers explain how and why we connect to place, and these will be examined in more detail in this chapter.

Source 1

Uluru is a place that has been identified and given meaning. Like all places it has both tangible (able to be touched) and intangible (not able to be touched) characteristics. The rock, the plants and the soil are all tangible while the scenic beauty, cultural significance and economic value are intangible.

keyconcept: Place

Comparing different perceptions of place

How you perceive and use a place can be influenced by many different factors. The same place can be perceived in different ways by different people – a historian might perceive a museum as a fascinating place to visit, for example, while a teenager might think it is quite boring. The same place can be used in very different ways, too. The steps outside the museum could be used as a place to go skateboarding, or at other times as a backdrop for wedding photos.

A park that is filled with families on a bright sunny day might seem like a safe, enjoyable place to go with

a friend, but the same park might seem very different to you if you found yourself there in the middle of the night alone. Factors that influence how you perceive places include:

- your age
- your ethnic origin
- your gender
- the time of day or night you are visiting the place
- whether you are travelling to the place alone or in a group
- whether you have a disability or are able-bodied.

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



Source 2 There are many factors that might influence the way someone perceives a place.

Check your learning 4.1

Remember and understand

- 1 Write a definition of the term 'place' in your own words.
- 2 Read the caption for Source 1. Now think of a place that you know well. Describe this place in terms of its tangible and intangible characteristics.
- 3 Explain how new technologies have helped to create greater links between people and places.

Apply and analyse

- 4 Examine Source 2. How do you think the people in these photos feel about the places shown? How might a different person feel about each of the places?

Evaluate and create

- 5 Give an example of a place in your area that is used for more than one purpose. Design a poster showing the different ways in which it is used. Try to think of as many people as possible that might use the place, the different ways they might use it, and what their perceptions of the place might be.



4.2 Connections to place

Most of the reasons why people feel a sense of connection to place can be grouped under the following four criteria:

- **Spiritual** – factors related to a person's beliefs
- **Economic** – factors related to employment and income
- **Cultural** – factors related to the shared characteristics of a group of people
- **Historical** – factors related to past experiences and events.

Spiritual factors

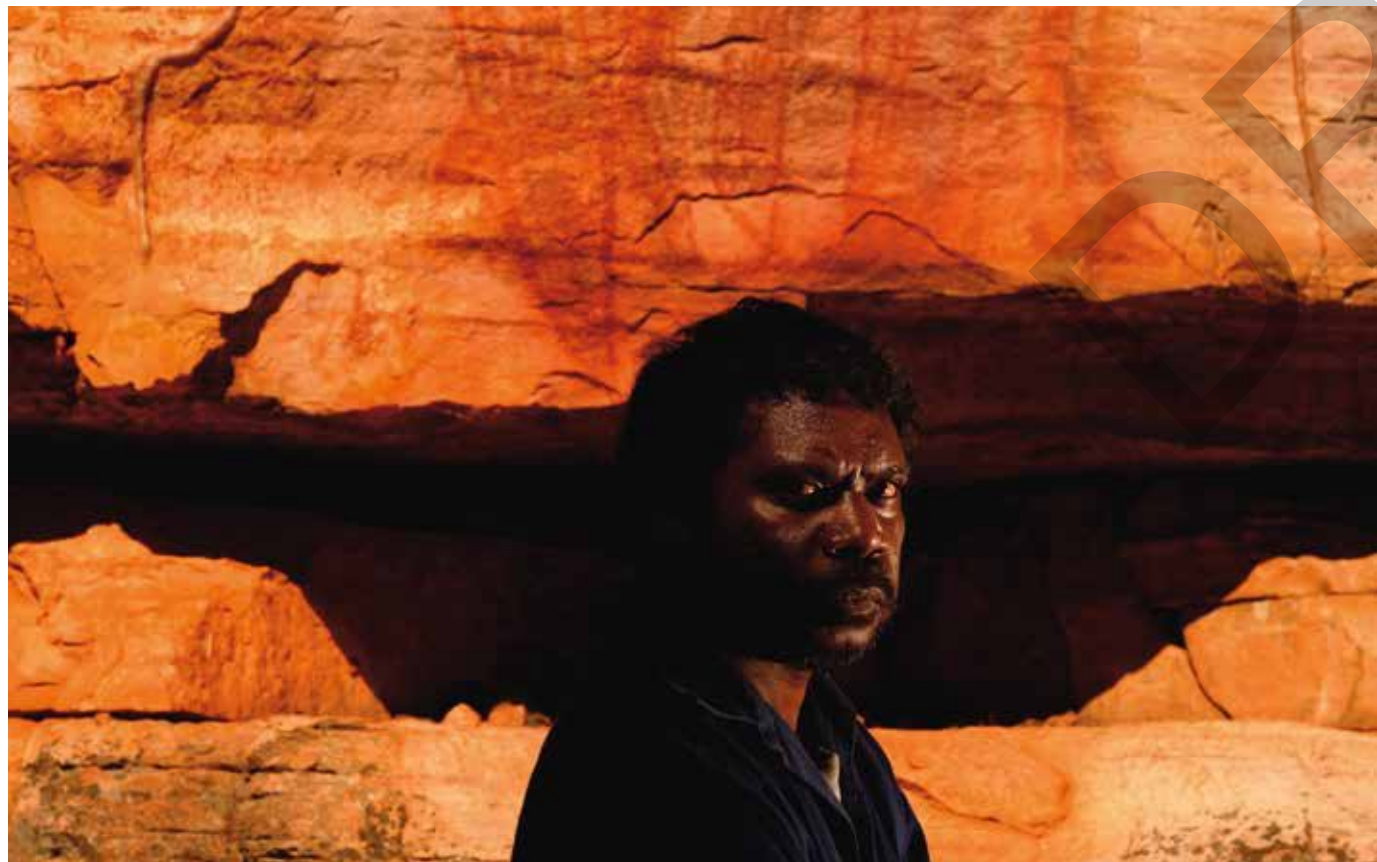
Many people feel connected to particular places because of their beliefs or the way a place makes them feel. Sometimes this connection can be difficult for other people to fully understand but this does not make the connection any less real or important. For example, many Aboriginal and Torres Strait Islander people have

a deep and complex spiritual connection to places in the natural world that other people in the wider community do not have.

Jeffrey Lee, the sole survivor of the Djok clan in the Northern Territory, could have become one of Australia's richest men (see Source 1). He is the custodian of land that contains vast deposits of uranium. However, when a French energy company offered him millions in royalties to allow them to mine the uranium, he declined.

Instead, he offered the land to the Federal Government so that it would be included as part of Kakadu National Park, and therefore protected from mining.

'When you dig 'em hole in that country, you're killing me. Money don't mean nothing to me. Country is very important to me,' he told newspaper reporters. Mr Lee believes that it is his responsibility to look after the land and that digging into the ground would disturb the spirits that live within it. 'There are sacred sites,



Source 1 For Jeffrey Lee, the spiritual importance of the land far outweighs any potential monetary gain.



Source 2 A 2011 protest in Illawarra against the mining of gas in New South Wales farming areas shows how the economic connection to place can be at odds with those who have other factors which influence their connection.

there are burial sites and there are other special places out there which are my responsibility to look after. I'm not interested in white people offering me this or that ... it doesn't mean a thing. I'm not interested in money. I've got a job; I can buy tucker; I can go fishing and hunting. That's all that matters to me.'

Economic factors

Many people feel a connection to particular places because these places provide them with employment or a source of income. In the previous example of the proposed uranium mine in the Northern Territory, the French mineral company was interested in connecting to this place because of economic opportunities. In the same way, a farmer will feel connected to the place in which he or she farms and a tourism operator will feel connected to the place that tourists come to visit.

In countries where personal wealth is viewed as a desirable goal, economic connection to place may take precedence over less tangible reasons for connection, such as spiritual or historical factors. Different reasons for connecting to place can cause disagreement, protest and even conflict between individuals and groups.

In parts of Queensland and New South Wales, for example, there is widespread disagreement about mining gas from the rocks beneath farming areas (see Source 2). Many farmers believe that the process used to extract the gas degrades their land and water but

mining companies point out that the gas is needed by many people for heating and cooking. Many protests have been held to try and influence state and federal governments to more closely control or stop the mining of this gas.

Cultural factors

Connections to place can also be strongly influenced by a range of cultural factors. This can include the perceived historic value of a place, and how that is meaningful for people in the present, the past and even into the future. The notion of cultural heritage can be an important motivating factor for connection to place.

People with similar interests, backgrounds and heritage often connect with each other to form communities. Immigrants to a new country, for example, tend to live close to other recent arrivals from the same country. This allows them to connect more easily to people with the same language and culture and therefore, to fit more easily into their new community.

This happens all around the world and creates areas of ethnic concentration. In New York, for example, there are neighbourhoods known as Little Italy, Chinatown, Little Manila, Le Petit Senegal, Jamaica, Koreatown and Spanish Harlem. The residents of these places may feel connected to the area in which they live because of their cultural connections (see Source 4).



Source 3 The Bright Moon Buddhist Temple in Springvale acts as an important hub for many Vietnamese people who have made the suburb their home.

Case study: Vietnamese in Springvale, Melbourne

The Melbourne suburb of Springvale is an example of ethnic concentration in Australia. Many of the residents were born overseas, with eight out of 10 Springvale residents speaking more than one language. While the area has seen several waves of migrants from Europe and Asia over the last century, it is now the Vietnamese who dominate.

As a result of the Vietnam War in the 1960s and 1970s, millions of Vietnamese fled the country to find refuge elsewhere.

Many Vietnamese refugees crammed into small boats to escape and became known as ‘boat people’. More than 112 000 Vietnamese came to Australia in the 20 years after 1975 and Melbourne is now home to more than 67 000 people who were born in Vietnam.

Many Vietnamese refugees also settled in the suburbs of Cabramatta in Sydney and Richmond in Melbourne. Springvale originally became a popular place for Vietnamese people because a migrant hostel was located there and cheap housing was available. In Springvale, new arrivals from Vietnam joined a large and growing migrant population from many other places.

Historical factors

Events that happened in the past can also result in people forming special connections to particular places. These may be recent events or events from hundreds of years ago, but they can form powerful links between



Source 4 Springvale in Melbourne is home to communities of Chinese, Cambodian, Thai and Greek families and has a strong Vietnamese population – Vietnamese people make up 21.3 per cent of the population.

people and places. For many people, the places they visited on holidays as children remain special places well into their adulthood because of the memories these places hold.

On a wider scale, important historical events can give particular places a special meaning. Such historical events could include a war or battle such as Gallipoli (see Source 6), a terrorist attack such as the Bali bombings, or the birthplace or burial place of a famous person. In some towns and cities, places of historical significance might be marked with a statue or other

commemorative marker. In London, for example, many places which are connected with historical events and people are marked with blue memorial plaques (see Source 5).

The strong connection some people feel with a place for historical reasons can explain why many people



Source 5 Blue plaques in London mark places where people may feel a historical connection due to an event that occurred or a person that lived at that place.



Source 6 Many Australians and New Zealanders feel a special connection to Gallipoli in Turkey because of battles fought there a century ago. These people are attending an Anzac Day dawn service at Gallipoli.

Check your learning 4.2

Remember and understand

- 1 Why might people sometimes find it difficult to understand another person’s spiritual connection to a particular place?
- 2 Why do people with similar cultural backgrounds often live close to each other?
- 3 Why would some farmers in Queensland and New South Wales protest about gas mining in the places where they live?

Apply and analyse

- 4 Re-read the information relating to Jeffrey Lee.
 - a Describe the connection he has to the place in which he lives.
 - b Why does he have this connection?
 - c Is this the same way you feel about the land? Why or why not?
 - d Account for the similarities and differences between his connection to the land and yours.
- 5 What might be some of the important hubs for Vietnamese people in Springvale? Are there similar hubs in your local area? Are you connected to these places for similar reasons?

Evaluate and create

- 6 Many people feel a connection to places where important events occurred in the past. Find out why many Australians have a special connection to Gallipoli in Turkey, or to Kuta in Bali.
- 7 The Yasukuni Shrine in Tokyo, Japan, is an example of a place that inspires strong feelings in people. Research the shrine and investigate why people might have different connections to this place. Design a poster that shows the results of your research.



Source 7 Yasukuni Shrine in Tokyo, Japan, is a place that inspires a range of different reactions in people.

4A rich task

Mental maps versus GPS

A **mental map** is a map that we keep in our heads, rather than on paper or in our phone. We all carry a map in our head of our local area. This allows us to find our way quickly and easily between places. We tend to know the places we use often and the spaces between them much better than the places and spaces we rarely use or visit. As we all use different places, we each have a unique mental map of our local area.

Is GPS ruining our mental maps?

Many Australian cars and mobile phones are fitted with a GPS device. GPS or **Global Positioning Systems** use satellites to accurately pinpoint the location of the car or phone. By adding data in the form of a digital map, GPS devices can be used to help us find our way around. For many people, their GPS device has replaced printed maps and written directions as the main way of navigating around an area. Using GPS devices can be extremely helpful, but has using them ruined our own mental maps?



Source 1 GPS devices can translate complex three-dimensional places into a series of lines and instructions that make it easy to navigate.

A study published in the *New York Times* in 2012 found that using a GPS rather than our internal mental map reduces the ability of our brain to build up a mental picture of our environment. While our brains build up layers of information to develop mental maps, a GPS device reduces all of the information to a simple list of distances and directions. By not using the mental maps we have stored, we may risk losing the ability to create them in the first place.

The report concludes with this advice:
'Next time you're in a new place, forget the GPS device. Study a map to get your bearings, then try to focus on your memory of it to find your way around. City maps do not tell you each step, but they provide a wealth of abstract survey knowledge. Fill in these memories with your own navigational experience, and give your brain the chance to live up to its abilities.'

skilldrill: Place, space and interconnection

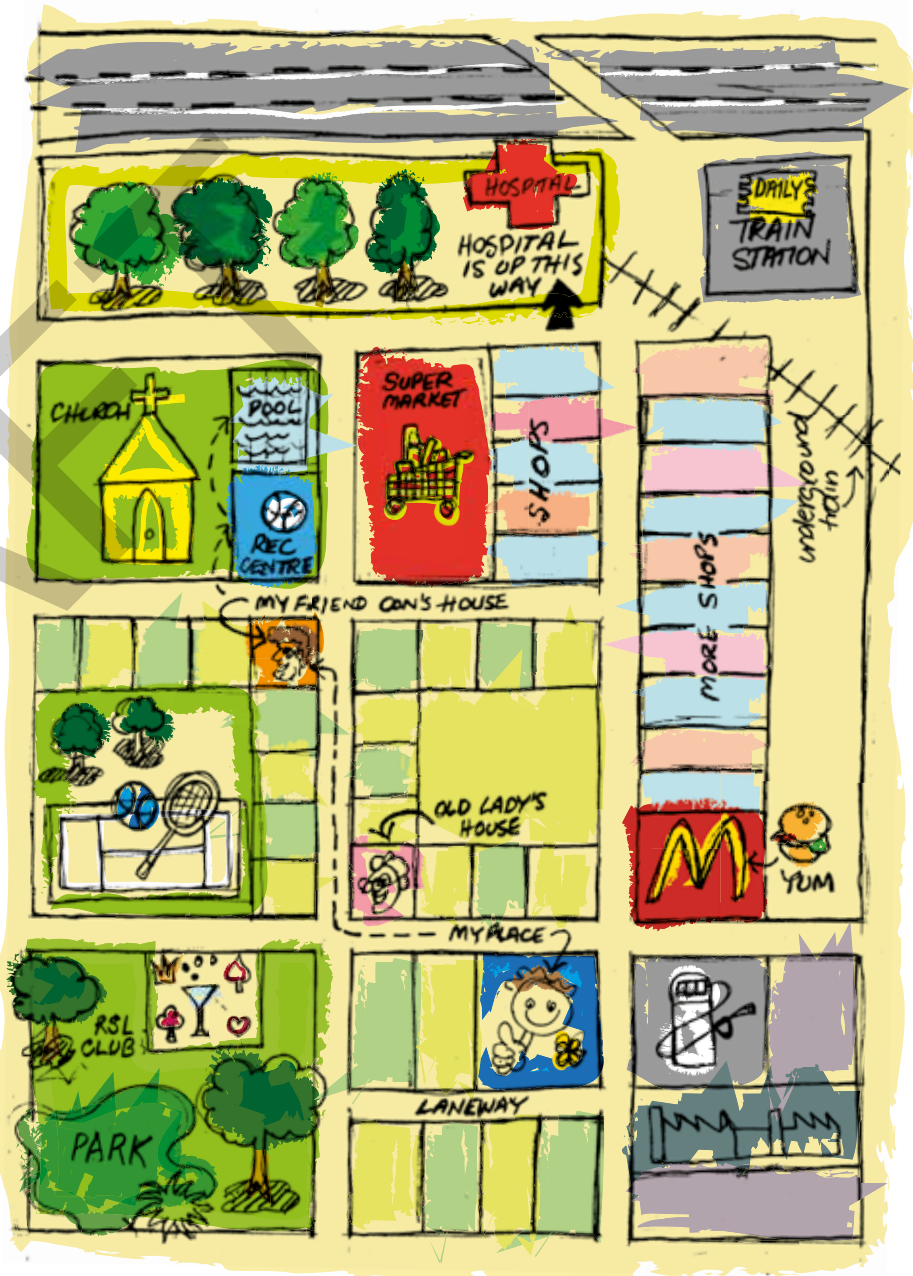
Putting a mental map down on paper

A mental map is a simple but effective tool people use to perceive, remember and analyse an area. You can record the mental map you have of an area into hard copy, for yourself or for another person to use, by following these simple steps:

- Step 1** Choose an area you know well that you wish to map.
- Step 2** Starting with a blank piece of paper, jot down the main places you can remember in the area. Do not refer to street directories or other professionally drawn maps. Remember that there is no 'right' answer for a mental map.
- Step 3** Fill in the main roads, pathways and any railway lines that connect places in the area.
- Step 4** Include any parks, ovals or reserves, or any significant natural features you can remember.
- Step 5** Mark down any significant landmarks or buildings. These might include a statue on a corner, a church or school, shops or even a wall that features some graffiti art.
- Step 6** Continue plotting features, roads, and landmarks until you are satisfied that all the things you can remember as being significant are added to your hard-copy map.

Apply the skill

- 1 Make a hard copy of your mental map of the area in which you live. It could cover a couple of blocks or more – the size will depend on how much information you keep in your head. Label features that are important to you. This might include shops, your sports club, or a friend's house.



Source 2 Everyone has a mental map of their home area whether they realise it or not. You may be surprised at how much detail you can readily recall about the area where you live and how often you use your mental map.

Extend your understanding

- 1 Swap your map with another person in your class.
 - a Note down any similarities and any differences in what you chose to include in your mental map. What were some of the main differences between the two mental maps?
 - b Discuss with your partner what their mental map revealed about them and their perception of their local area. What did the features they included tell you about them? For example, if they included a football field, oval and gym, you could safely say they had an interest in sports. What did they think your mental map revealed about you?
- 2 Look closely at the mental map in Source 2.
 - a What are some of the places in the local area that are important to this person?
 - b What does this mental map reveal about the person who drew it?
- 3 List the pros and cons of keeping a mental map versus using a GPS. Are there any aspects of a GPS that might limit your understanding of an area? Do you think you would prefer to rely on a GPS or a mental map? Why do you think this?
- 4 Ask a primary school student to draw a mental map of their local area and display them on a classroom wall along with the completed maps from your own class.
 - a What were some of the main differences between the two sets of mental maps?
 - b Why do you think the mental maps of primary school students differ to those of secondary school students?
 - c What has this activity taught you about the ways in which different people perceive their local area?

4.3 What is a global citizen?

'No man is an island Entire of itself, Every man is a piece of the continent, A part of the main.'

The English poet John Donne wrote these words way back in 1624. In these lines he expresses the idea that every person is connected to someone else. This is as true today as it was nearly 400 hundred years ago. The more we learn about our amazing planet and the people who live here the more we come to realise that everyone and everything is connected to everyone and everything else.

We are connected to people and places all around the world in many ways. This includes being connected by the food we eat, the clothes we wear, the goods in our homes, the sport we play, the music we listen to and the movies we watch. We are also the most mobile generation in history, travelling for work and for leisure more often and more quickly. As well as these physical and cultural connections there are the rapidly growing digital connections that break down barriers such as language and distance that once separated people and places.

Global citizens

Each of us is an example of the connected world in which we live. This is true even when we are just sitting at our desk at school – we don't have to physically travel to be connected with other places in the world.

Some people, however, are true global citizens and are linked in many different ways to places all around the world. Cadel Evans, the famous Australian cyclist, is one example of a person who is interconnected globally on many levels (see Source 1). Perhaps best known as the first Australian to win the Tour de France cycling race, Evans was once asked how it felt to be an Australian whose sport has taken him around the world. He replied, 'Chiara's [his wife] Italian, we're living in Switzerland and I'm Australian riding for an American registered team sponsored by a Swiss company.' He could also have added that he and his wife have adopted an Ethiopian child and that his teammates are from 10 different countries.

The life and career of Cadel Evans is a clear example of the many ways we can be connected with many different places.



Source 1 Australia's Cadel Evans (left) wins a stage in the 2011 Tour de France. He is followed to the line by cyclists from Spain, Kazakhstan, Colombia, Belgium and Norway. The race was televised in 190 countries and watched by an estimated 3.5 billion people around the world.

keyconcept: Interconnection

How submarine cables connect the world through communication

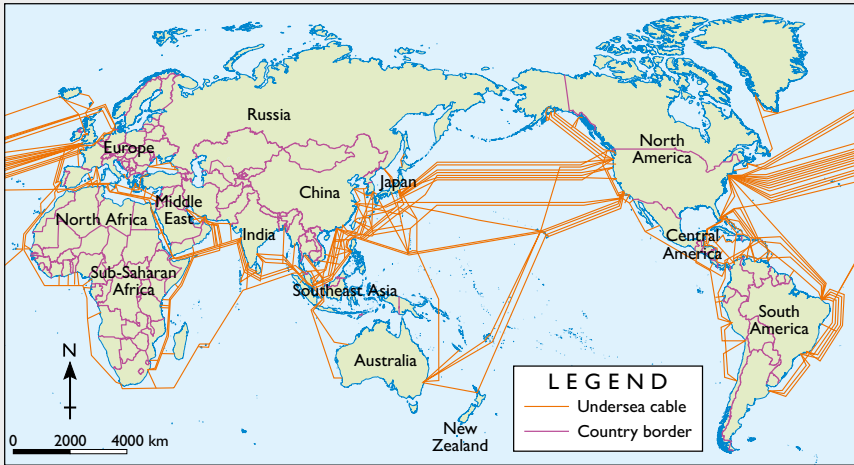
In the past, most countries used their own resources to feed and clothe their own populations. Today, however, all nations increasingly rely on each other to supply goods and services to their populations. We are more connected to the rest of the world than we have ever been before. This increasing interconnection between countries is referred to as globalisation.

Globalisation has increased rapidly over the last 50 to 60 years. In 2008, for example, the same amount of trade took place in one day as in a whole year in the 1940s. This increase is largely due to rapid improvements in information and communications technology (ICT) such as the Internet. Virtually all of the world's Internet connections are made through submarine cables on the ocean floors that link together the world's land masses. In total, there are about 885 000 kilometres of submarine cables around the world and the latest cables carry signals 12 000 kilometres across

the Atlantic Ocean in 0.00072 seconds. The latest submarine cables are about the thickness of a garden hose but contain enough bandwidth for 20 million Internet users.

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

WORLD: NETWORK OF SUBMARINE TELECOMMUNICATION CABLES



Source 2

Source: Oxford University Press

Check your learning 4.3

Remember and understand

- 1 How do the lines of John Donne's poem relate to the principle of interconnection? Do you think this poem is relevant to today's world? Why or why not?
- 2 In what ways do submarine cables connect different places around the world?

Apply and analyse

- 3 Write a list of some of the ways in which you link to other countries.
 - a Share your links with your classmates and build up a class list of these links.
 - b Show these links on a world map. You may need to develop a legend to show different types of links.

- c Describe the pattern shown on your class map.
- 4 Examine Source 2.
 - a Which regions and countries are the most connected by submarine cables?
 - b Which places are important hubs for submarine cables?

Evaluate and create

- 5 Re-write the section of John Donne's poem in your own words as a tweet. How many people would his poem have reached when it was published in 1624? How many people could the Twitter version reach? Describe how both the poem and the tweet are examples of interconnection.

4.4 How geographical features influence interconnections

The distribution of the world’s land masses and physical features has always been a key factor in making connections between people and places easy or difficult. Some physical features, such as high mountain ranges, deserts and stormy seas, have been natural barriers to trade and communication for thousands of years. Others, such as rivers and mountain passes, act as natural corridors for connecting people and places. All around the world, people have attempted to cut through mountains, build bridges over valleys, and even construct underwater tunnels to overcome some of the natural barriers that inhibit transport and trade.

The Khyber Pass:
A natural corridor

Some of the world’s greatest natural barriers are the massive mountain ranges of Central Asia including the Himalayas and Hindu Kush ranges. Transport links across the ranges are limited to a few high mountain passes. The most important of these is the Khyber Pass. Carved by mountain rivers and streams, the pass allows road and rail connections between Afghanistan and Pakistan. The pass is one of the world’s most significant natural corridors and was part of the fabled Silk Road that linked traders in Africa, Europe and Asia from the 2nd century BCE to the 16th century CE. Military leaders such as Genghis Khan and Alexander the Great also used the Khyber Pass during their military campaigns.



Source 1 Narrow gorges near the Khyber Pass in Northern Pakistan have acted as natural barriers to trade and communication.

skilldrill: Data and information

Interpreting false colour satellite images

You may have heard the term ‘false colour’ before. The term means different or exaggerated colours have been used or added to make an image easier to interpret. Satellite images have become one of the most useful tools available to geographers. They are taken from special cameras mounted in orbiting satellites and show a large area of the Earth’s surface. While some satellite images are shown in natural colour others are altered by computers and use false colours to highlight particular features. The cartographer or person working on the image applies colours that make the range of features easier to see or understand than they would be on a ‘natural’ photograph or satellite image. The colours used in a false colour image can be completely unrelated to the feature being highlighted – a forest may be coloured pink, for example.

This change to colour is done when the colours of the natural features are too similar to demonstrate a particular point or aspect clearly. If someone is trying to show where a muddy brown river meets a brown-coloured riverbank where there are brown rocks and some brownish shrubs, they might decide to use colour to clearly show where the different elements are. In that case, they might make the shrub areas green, the river bright yellow and the rocks a bright red, leaving just the river bank brown.

When interpreting false colour satellite images, you should examine the accompanying legend if there is one to interpret the colours used in a false or simulated natural colour image.

Follow these steps to interpret a satellite image that uses false or simulated colour.

- Step 1** Use an atlas to locate the area shown in the image on the Earth’s surface.
- Step 2** Compare the false or simulated natural colour satellite image with the map of the same area. Use the atlas to identify natural and human features of this environment.
- Step 3** Then look closely at the satellite image and, guided by the false or exaggerated colours, identify key features of the environment such as rivers, mountain ranges and valleys. Follow the legend on the satellite image if it has one and you are not sure at first what features you are looking at.

- Step 4** Continue to compare the map with the satellite image to deepen your understanding of the area shown.
- Step 5** Describe any relationships between features of the environment that you can identify on the satellite image. You can also use your atlas to help you add the names of features to your description.

Apply the skill

- Find a map that shows the area around the Khyber Pass. Use it to help you describe the landscape around the Khyber Pass shown in Source 2.
- Compare Source 2 with a map of the Khyber Pass. What geographical features do you think have made the Khyber Pass a significant feature of the region?



Source 2 This is a false colour satellite image of the Khyber Pass region with the Indus River in flood. The image uses exaggerated colours to make it easier to detect the various natural features in the area.

keyconcept: Change

Reopening the Northwest Passage

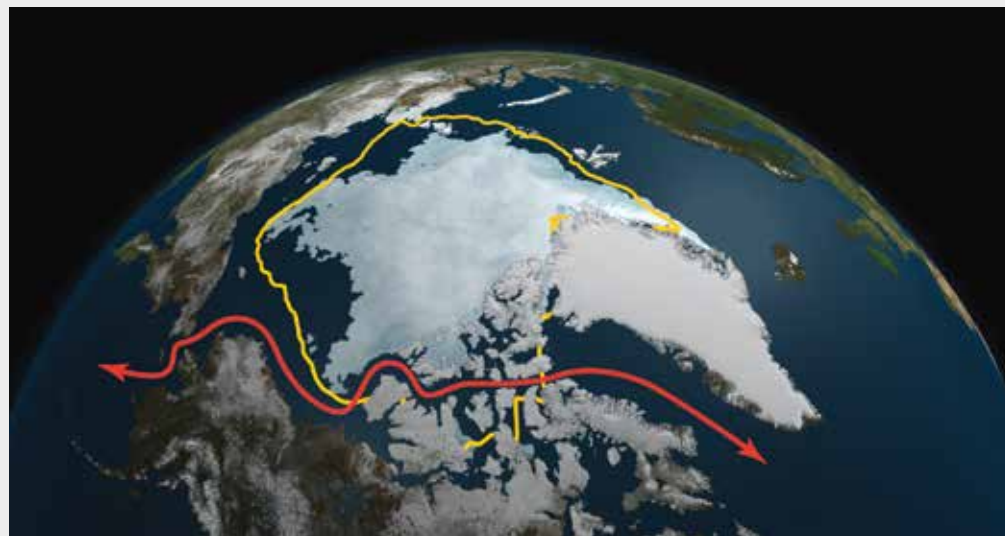
As the economies of the world become more closely linked due to globalisation, shipping companies are looking for ways to reduce the relative distance between trading countries. The Americas have always been a physical barrier between Western Europe and East Asia, two of the major trading areas of the world.

Before the completion of the Panama Canal in 1914, ships were forced to brave the dangerous waters around Cape Horn on the southern tip of South America. Today, around 40 ships a day pass through the Panama Canal but some large ships now exceed the size limits of the canal.

The preferred route for ships would be the Northwest Passage around the north of North America. However, the Arctic sea ice is unpredictable and hazardous, even in summer when much of the ice covering the Arctic Ocean melts.

Climate change, however, is now opening up the Northwest Passage. Each year the sea ice shrinks by about 70 000 square kilometres, and many researchers now believe that the passage could be completely ice-free all year within decades. Many shipping companies around the world won't wait that long, however, and have begun building ships that can withstand the reduced Arctic sea ice.

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



Source 3 NASA satellite data in 2011 showed that Arctic sea ice had retreated to a level far smaller than the 30-year average (marked in yellow), opening up the Northwest Passage shipping lanes (in red).

Check your learning 4.4

Remember and understand

- 1 Where is the Khyber Pass and why is it important?
- 2 What are the similarities between the Khyber Pass and the Northwest Passage?

Apply and analyse

- 3 Describe the relationship between sea ice and shipping shown in Source 3. Use the correct names of seas and countries in your description.

Evaluate and create

- 4 Use an atlas to examine the area between Tokyo, Japan and London, United Kingdom.

- a Estimate the distance a ship would sail between Tokyo and London if passing through the Northwest Passage compared to the Panama Canal.
 - b Container ships travel at about 40 kilometres per hour and use about 200 tonnes of fuel a day. Estimate the savings in time and fuel for a Tokyo–London ship using the Northwest Passage.
- 5 Research other natural barriers and corridors to trade such as deserts, rainforests and rivers. Make a list of these and locate them on a world map. How have new technologies helped to overcome natural barriers?

4.5 How people influence interconnections

Geographical features, including both natural and man-made structures, can pose many challenges for humans and their activities. Trade in particular, has been affected for centuries by physical geographical barriers. Among these are rivers, mountains, forests and deserts. Exploration and building efforts have often been directed at building bridges, tunnels, canals and other structures to close the gap between places and increase the level of interconnection between places.

Some geographers believe that the greatest barriers to connections between people and places are not caused by physical features such as oceans and mountain ranges but by human activities and decisions.

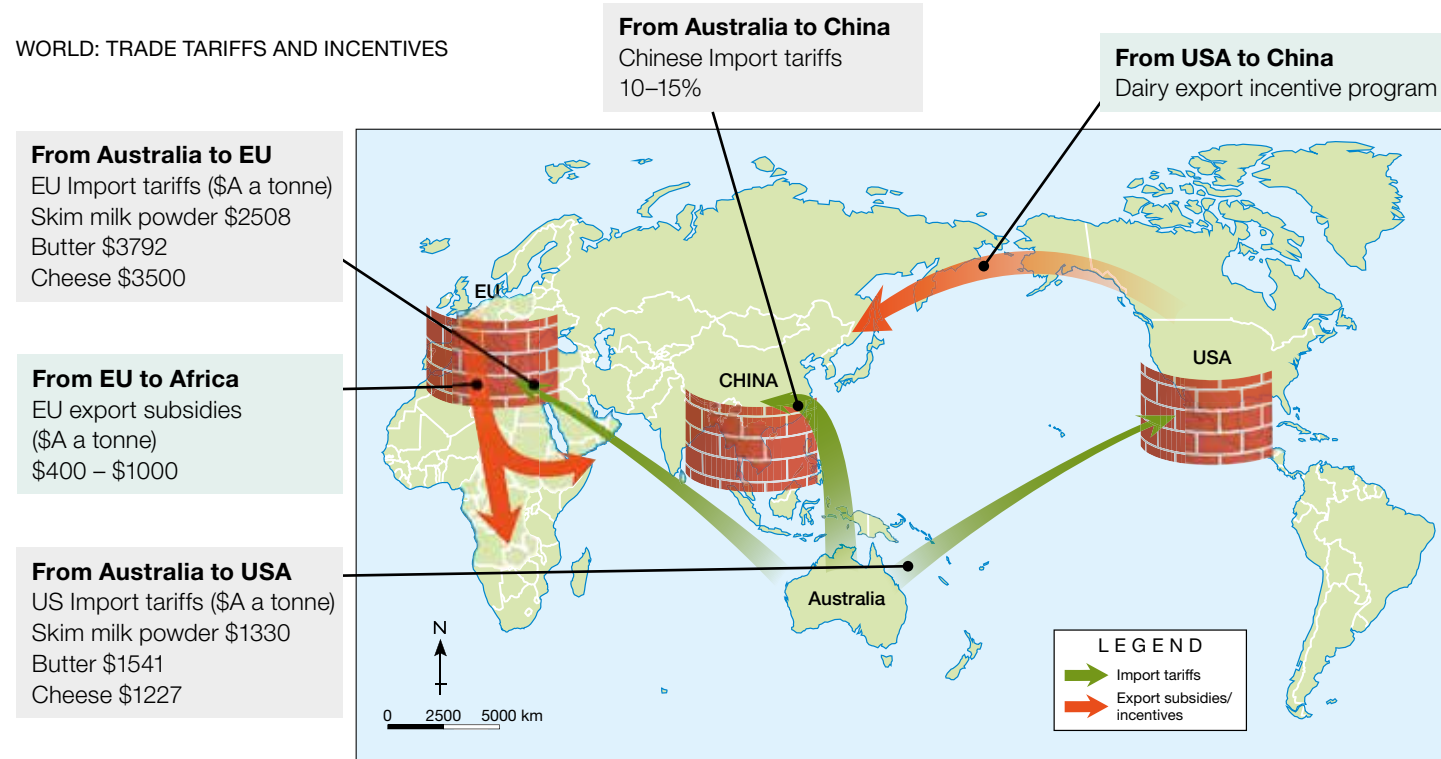
For example, there are many barriers put in place to limit and control the movement of people and goods across international borders (e.g in the way of taxes and **tariffs**). These exist to protect the interests of individual countries but the end result is often a restriction to trade and communications.

Economists have estimated that removing trade barriers would add about \$168 billion to the world economy every year. The biggest winners in the removal of these barriers would be people in developing countries as the price of food would fall and they would find it easier to export goods they produce.

Tariffs and non-tariff barriers

To protect local industries, governments in many countries impose a tax, known as a tariff, on imported goods. They also restrict trade by imposing import limits on some goods, and negotiate complicated trade agreements with other countries. Australian farmers often face trade barriers when trying to export their goods (see Source 1). Many countries apply tariffs to imported goods, while also providing incentives such as lower taxes to their own farmers to help them export their goods.

WORLD: TRADE TARIFFS AND INCENTIVES

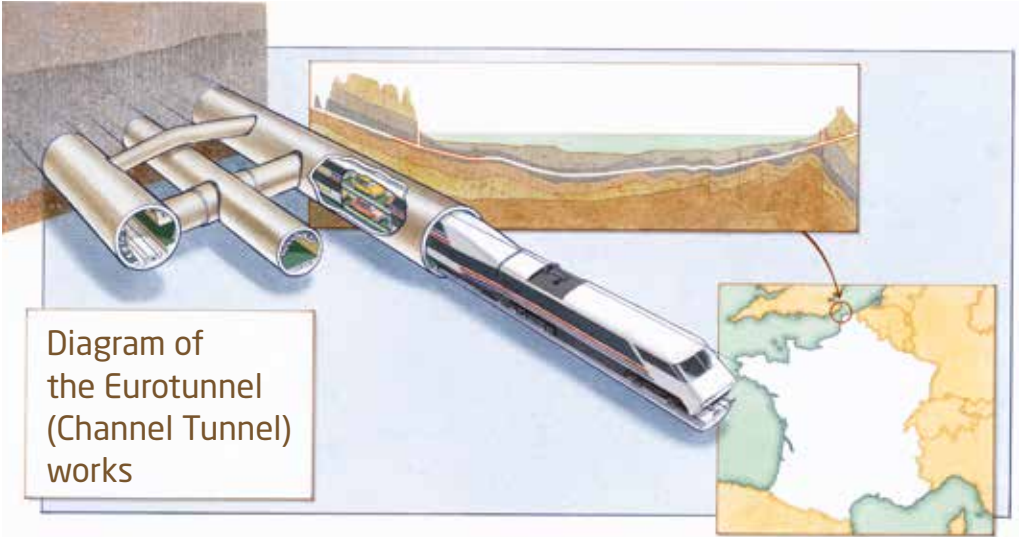


Source 1

Source: Oxford University Press

While these official procedures can be a barrier to free trade between countries so, too, can unofficial practices such as bribery and corruption. Imagine, for example, ordering the same product to be delivered to your home in Australia from two different places: one from the United States and one from Sub-Saharan Africa. Both suppliers pack the goods into a shipping container and contact the shipping company on the same day. Six days later, your

container leaves the port in the United States and starts on its journey to you. The African container takes six times longer to pass through the port and reach a ship and you will pay twice as much to the port officials. Though labour costs are much lower in Africa, your extra money has been used to pay bribes to the shipping agent, customs officials, security agents, drivers and crane operators to keep your container moving through the system.



Source 2 The construction of the Channel Tunnel was a massive undertaking to bridge the physical barrier of water between France and England (known as the English Channel). The works took a total of seven years.



Source 3 The port of Maputo, Mozambique. Corruption, in the form of bribery, added 14 per cent to shipping costs and increased the salary of some port officials at Maputo by 600 per cent.

Case study: The tunnels of Gaza

The city of Rafah in the Middle East lies across an international border. The southern part of the city lies in Egypt while the north is in the Gaza Strip, a Palestinian territory. The neighbouring country of Israel, concerned that guns and ammunition are passing from Egypt into Gaza, maintain tight control of the border in Rafah.

The people of the city have responded by digging an extensive network of tunnels beneath the border to connect the two sides of the city. Up to 15 000 people

were involved in digging the tunnels which are used to smuggle virtually everything that people and the government need. Machinery, livestock, fuel and steel pass through the tunnels daily. The political party that controls the Gaza Strip even taxes the goods that pass through the tunnels and are rumoured to raise as much as \$750 million a year in this way. Some people living in Gaza even boast that they can order fast food from Egypt and have it home delivered!



Source 4 A flock of sheep is driven through a tunnel beneath the streets of Rafah.

Check your learning 4.5

Remember and understand

- 1 In what ways can trade and communications be restricted between countries?
- 2 Why do countries restrict connections in this way?

Apply and analyse

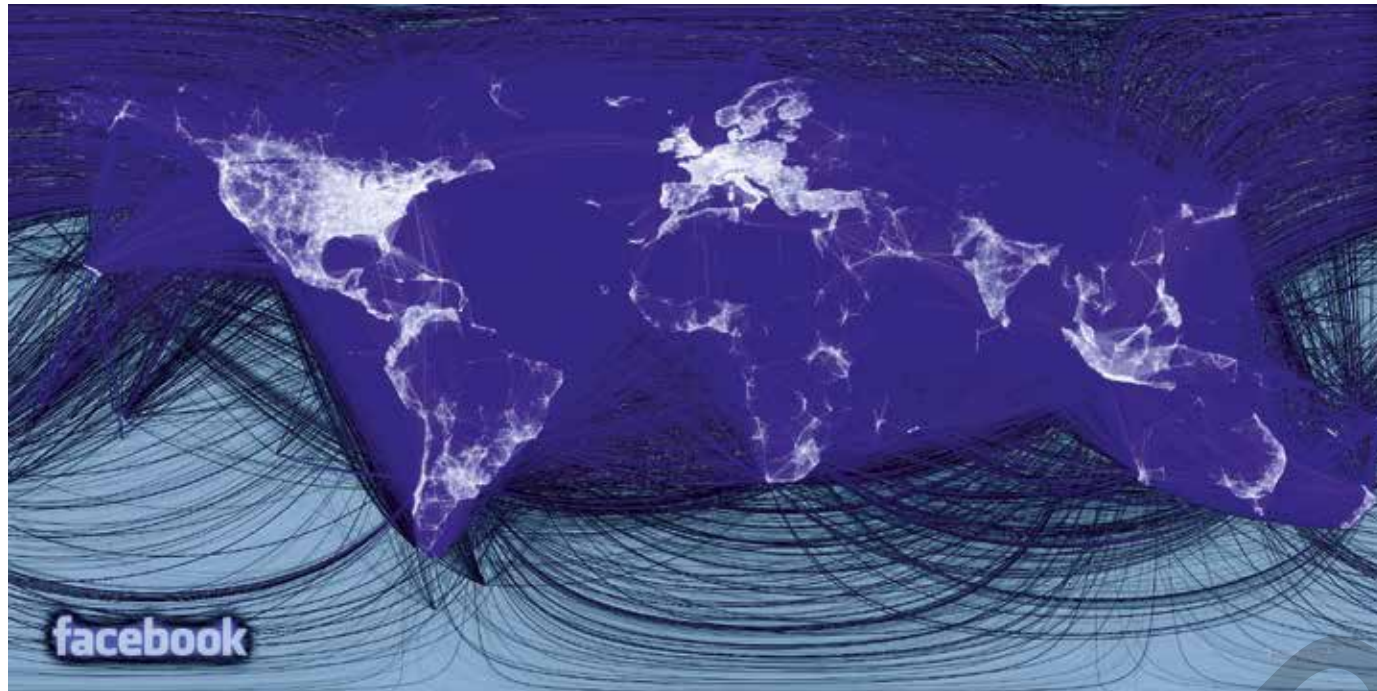
- 3 Imagine that you have ordered goods from Africa and the United States and they were delivered as described above.
 - a How would your experience change the way in which you make purchasing decisions in the future?
 - b Who suffers and who benefits from your decision?
 - c Imagine that Maputo is the only place from which you can buy the goods you need. Brainstorm some ways in which you could receive your goods more cheaply and quickly.

- 4 Examine Source 1. What are some of the restrictions placed on Australian farmers exporting their produce? Use the names of specific products and places in your answer.
- 5 Why do the people of Rafah dig tunnels? What would be some of the risks in digging and using tunnels such as these?

Evaluate and create

- 6 Use Google Earth to explore the city of Rafah. Describe the border region and any differences you can identify between the two parts of the city.
- 7 Examine Source 2. Do some extra reading on the Internet and then write two to three paragraphs outlining the reasons for building the tunnel and the challenges that were encountered.

4.6 How technology influences interconnections



The Internet allows people to connect with other people in different places more quickly and conveniently than ever before. Today, we use the Internet for a range of activities and purposes that link us to many places all over the world. Your after-school activities are probably connecting you to places all over the world without you even realising it. In the space of half an hour sitting at the computer, you might have logged into Facebook, connecting with friends who live in the same area, others who live interstate or some who live in another country. You might listen to some British or American songs on YouTube while you do your homework, or stream an international sports game. The Internet allows you to make all these connections to different places without physically leaving your desk.

Communicating with people in different places

We use the Internet to play games, to shop, plan activities, find directions, read, research, complete homework and more than ever before, to communicate with each other.

Source 1 This map of the world was created not by drawing borders, but by marking the connections between 10 million Facebook friends.

Using the Internet for emails remains the most popular activity with 98 per cent of people online having sent an email in the last 12 months. The Internet has, in many ways, become the most dominant form of social interaction on the planet.

- There are 2.1 billion Internet users in the world and 3.1 billion email accounts.
- About 250 billion emails are sent every day.
- There are about 100 million active Twitter users sending 250 million tweets a day.
- There are more than 1 billion Facebook accounts. This is greater than the total world population 200 years ago.
- Every minute a further 48 hours of video content is added to YouTube.
- There are more than 500 million Google searches made every day. This rate has doubled in the last three years.

Access to news and information

Developments in information and communications technologies (ICT) have meant that people can now access a wide range of global news and information services quickly and easily. You can get American basketball scores in real-time, for example, or you can see photos from a collection at Paris fashion week on the same day it is shown. This information might be trivial, such as finding out what everyone was wearing at last night's music awards, or it might be something that could potentially save a life.

During the Black Saturday bushfires which swept through Victoria in 2009 many people were alerted to the threat via social media, not by traditional news forms. Following Twitter allowed people to get real-time updates from others who were tweeting from areas nearby the flames, information which traditional news services did not have access to. You may be able to think of other examples where Twitter or other social media have broken stories before traditional news providers.

Access to services in other places

Do you watch your favourite programs on free-to-air TV or do you prefer to live-stream or download? Do you prefer to shop for clothes online or do you go and try things on in store before you buy?

Entertainment and shopping are two areas of your life where information technology connects you to other places on a regular basis. You probably take it for granted that you can download new music the same day it is released in the United States. In the past, you would have had to wait for CDs to arrive in shops here. You can also shop online, and often purchase things more cheaply than if you were buying them in a physical store. Almost \$8 trillion a year changes hands through e-commerce, and half of all Australians have shopped online in the last three months. Access to services and goods in other places is an aspect of globalisation that many of us now enjoy as a matter of course.

Case study: Offshore call centres

When people call up to complain about mobile phone service, book an airline ticket, or pay a bill, chances are they speak to someone in the Philippines or India rather than in Australia. Many Australian companies have moved their call centres to these other countries to take advantage of the lower wages. The call centre industry, which currently employs around 400 000 Filipinos and 350 000 Indians, is expected to grow quickly as Internet speeds increase and new companies take advantage of the cost savings.



Source 2 Developments in technology and increased Internet speeds mean that it is possible for overseas companies to use call centres in India or the Philippines.

Check your learning 4.6

Remember and understand

- 1 In what ways do you think an online news service might be more useful than a traditional television or print-based news service?
- 2 Name three ways that the Internet facilitates interconnections between people in different places.
- 3 How are offshore call centres an example of interconnection?

Apply and analyse

- 4 Compare the Facebook map shown in Source 1 to an atlas map of the world.
 - a Name six countries that are very active Facebook users.
 - b Name four countries where there appears to be relatively little Facebook usage. Suggest some reasons for this.
 - c Describe the pattern of Facebook usage in Australia.
- 5 Do you use online shopping for any purchases? If so, which items do you tend to buy online? Do you know where the items you purchase are coming from?
- 6 In what ways does online shopping affect:
 - a the consumer?
 - b the environment?
 - c local shop owners?
 - d postal and delivery service providers?

4.7 Digital access around the world

The digital divide

During your lifetime, the Internet and other digital technologies have become the most powerful tools of connection the world has ever known. As a result, many experts argue that we are currently experiencing a digital revolution. In many places it now seems easier to be connected to other people and places than not to be. However, this high level of connection is not experienced equally by everyone. In some places there are more computers and mobile phones than there are people, while in other places these devices are still uncommon. These differences are known as the **digital divide**.

Using indicators such as the number of mobile subscribers, the price of Internet access, adult literacy, bandwidth and the number of Internet users, organisations such as the International Telecommunications Union (part of the United Nations) award each country a score based on its level of digital access (see Source 3). The lighter the shade of green, the greater the digital access enjoyed by that country. The darker the shade of green, the more limited the digital access.



Source 1
This amazing image uses the digital traffic created by the social network site Twitter and the photo-sharing site Flickr to map the use of digital technologies in Europe and North Africa. The red dots show places where Flickr pictures are uploaded and the blue dots where tweets were sent. White dots are locations that produced posts to both websites.

Digital access in developing nations

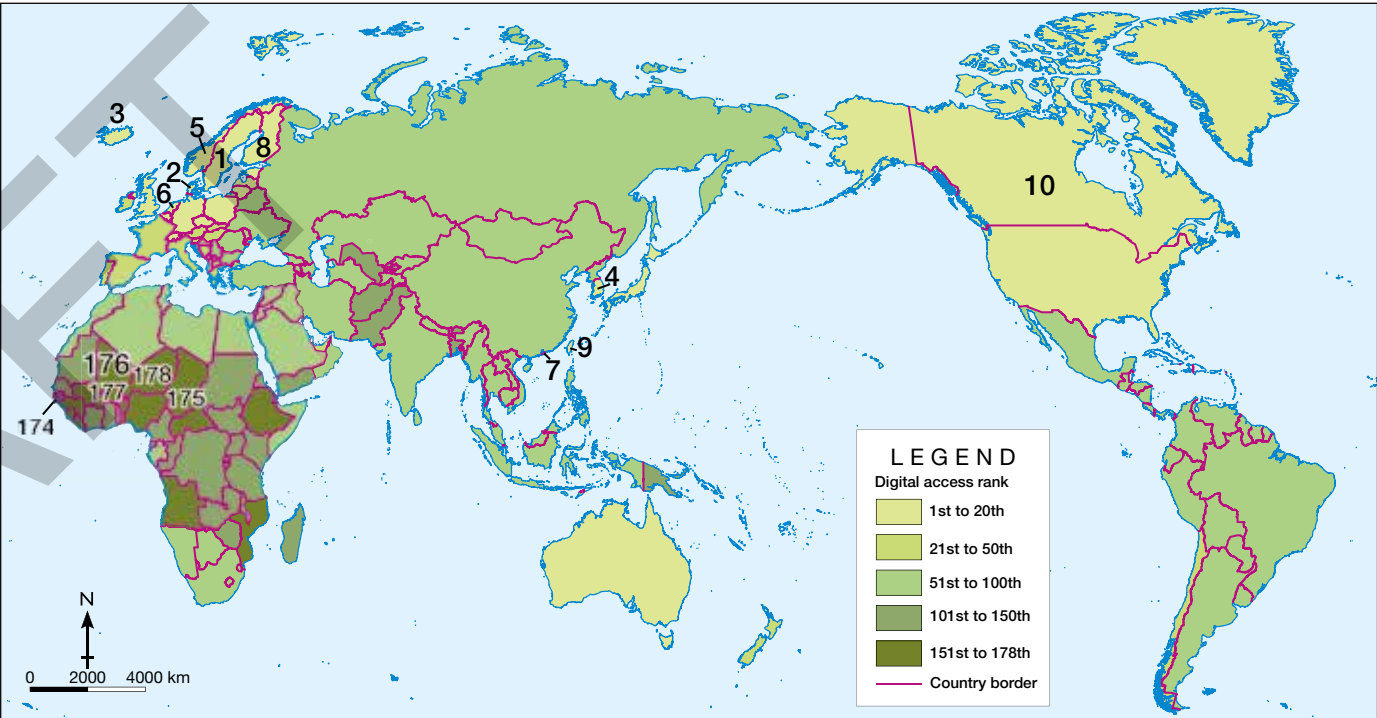
While access to communication technologies is greatest in developed nations the rest of the world is beginning to catch up. The people in the Sub-Saharan African nation of Niger, for example, are identified in Source 3 as having the least access to ICT. In 2000, only one resident of Niger in every 5000 had a mobile phone subscription. By 2013, this had become one in every three.

For many people in developing countries, the Internet and mobile phone have become a way to access the promise of a better future for themselves and their children. This promise grew following large scale protests against governments in many Middle Eastern and North African countries that began in 2010 and resulted in the overthrow of several governments. Known as the Arab Spring, it showed the power of social media, as people used sites such as Facebook and Twitter to organise protests and broadcast acts of violence by the police and armed forces.

Source 2 This data is from the International Telecommunications Union, a specialised branch of the United Nations, and shows the developing rates of mobile and Internet use in developed and developing nations as a percentage of the population.

		2005	2006	2007	2008	2009	2010	2011	2012	2013
Mobile phone subscriptions	Developed	82.1	92.9	102.0	108.3	112.5	115.0	119.0	123.6	128.2
	Developing	22.9	30.1	39.1	49.1	58.3	69.0	78.3	84.3	89.4
Homes with Internet	Developed	44.7	48.2	53.4	57.7	62.6	66.3	70.2	74.0	77.7
	Developing	8.1	9.6	11.2	12.5	14.1	16.4	20.2	24.0	28.0
People using the Internet	Developed	50.9	53.5	59.0	61.3	62.9	67.3	70.5	73.4	76.8
	Developing	7.8	9.4	11.9	14.7	17.5	21.2	24.5	27.5	30.7

WORLD: LEVELS OF DIGITAL ACCESS



Source 3

Source: Oxford University Press

Check your learning 4.7

Remember and understand

- 1 What is meant by the 'digital divide'?
- 2 What are some of the likely consequences of this divide?

Apply and analyse

- 3 Examine Source 3.
 - a Describe the distribution of those countries with very high digital access.
 - b Describe the distribution of those countries with very low digital access.
 - c Account for the differences in digital access as shown on this map.
- 4 Examine Source 2 and describe the general pattern of changes in digital access in developing countries.
- 5 Examine Source 1 and compare this to a political map of the same region.
 - a Which countries send the most photos and tweets?
 - b Which countries send the least?
 - c Account for the spots of white in areas of darkness.
 - d How does this map reflect physical features such as oceans, mountains and deserts?
 - e How does this map reflect human features such as cities, wealth and population density?

4.8 Connecting with remote areas

While many of us live or spend most of our time in towns or cities, there are significant numbers of people who live in, or travel to, more remote areas. In the past, the physical distance that separated places posed significant issues, even risks. Alerting someone located in a remote area of an incoming violent storm, for example, may have been difficult, even impossible. Even now, restricted mobile phone coverage and slow Internet access can still make connecting with some places decidedly challenging.

People travel to remote places for many reasons. There are scientists who go out into the field to research and explore, religious missionaries or educators who might visit or do short stays in an area to help or teach a language, and those who simply want to tackle the frontiers of places that are still relatively uncharted. Here, we will look at how people who travel to remote areas as well as how those who live in such places interconnect with the world.

Changing the ways explorers interconnect

Antarctica is the most remote place on Earth. Explorers in the 1900s such as Robert Falcon Scott and Ernest Shackleton effectively disappeared once they sailed away from their last port in New Zealand or Argentina. Their families and supporters knew that it would be years before they would see them again.

Communication with the 'outside world' was simply not possible. This was the case throughout many remote places on Earth, including vast areas of inland Australia, until only recently.

Explorers still travel to Antarctica and although this extreme environment is as challenging as ever, they are no longer as isolated. In 2012, British adventurer Felicity Aston skied alone for 1477 kilometres across Antarctica, becoming the first woman to do so (see Source 1). Among the equipment she carried in the two sleds she dragged behind her were a satellite phone that gave her coverage for the complete 59-day journey and a solar panel to recharge it. Connecting to a series of satellites orbiting the Earth 780 kilometres above her allowed Felicity to chat to family and friends, make a daily safety call, take part in live radio interviews, maintain



Source 1 Alone but connected: Felicity Aston sets off across Antarctica.



Source 2 This picture shows the positions of the 6000 artificial objects currently orbiting the Earth. Note: that they are shown as much larger than their actual sizes.

a blog and Facebook page and tweet to hundreds of thousands of followers daily.

The technologies that allow people in remote places to connect to other places all rely on a system of satellites that orbit the Earth. These receive signals from devices such as satellite phones and bounce them back to Earth or to another satellite. There are about 6000 of these satellites currently in orbit and this number increases by about 200 a year. These are used to relay messages to devices you probably have in your home, such as televisions and GPS receivers.

Connections in the Outback

Australia is one of the world's largest countries and some people live vast distances from the goods and services they need. This has resulted in unique problems that require unique solutions. The Royal Flying Doctor Service and School of the Air, for example, have helped to bring medical services and schooling to some of the world's most remote communities.

The Northern Territory Aboriginal community of Mungalawurru lies 90 kilometres north-west of Tennant Creek. In 2011, there was little contact between the community and people in other places. There were no home phones or mobile phone coverage and the pay phone was usually out of order. This situation is typical of many remote communities but an experiment in Mungalawurru may be about to change connections in the outback forever. Since 2011, a partnership between several technology providers and social researchers has



Source 3 The Internet is providing connections in remote places where there was previously little contact with other communities.

seen computers with Wi-Fi and satellite connections installed in most homes, and education given to the local community about their use. Within months they became widely used, particularly for music downloads, online banking and emails.

Check your learning 4.8

Remember and understand

- 1 Why do some people travel to remote areas?
- 2 How are explorers in Antarctica able to connect to people in other places? How does this differ from explorers in the past?

Apply and analyse

- 3 Research shows that the percentage of people in Australia who are connected to the Internet declines the further away people are from the centres of Australia's largest cities. Use a key geographic concept to explain why this is the case.
- 4 How do you think the new technology in Mungalawurru will change this community?
- 5 Have you ever lost your phone or had the Internet drop out at home? How did you feel, or how do you think you would feel if you lost your usual access? Discuss how your life would change if all systems

- of digital communication such as mobile phones and the Internet were cut. Consider how you would overcome any problems this might create for you.
- 6 What factors might you need to consider if you were to travel to an area that had limited mobile network coverage? What things might you need to pack or prepare that you would not normally have to consider?

Evaluate and create

- 7 Examine Source 2 in light of the issue of waste management. Research the amount of space junk that is currently in the atmosphere.
 - a What problems could having so much space junk floating unregulated in the atmosphere cause in the future?
 - b Are there any ways you think this should be addressed or strategies that you think should be implemented to tackle this potential problem?

4B rich task

How the Internet connects you to the world every day

Over a short period of time, we have come to rely on the Internet to connect us to the world in many ways throughout our day. We use it to play games, shop, research, find directions, work, read books, plan activities, complete homework and more than ever before, to communicate with each other.

Some of the ways in which we use the Internet every day include:

- online banking
- downloading podcasts and apps
- finding out sports results
- playing online games
- sending or reading email
- streaming music, movies and TV programs
- getting news updates
- checking weather reports
- buying clothes, groceries and presents
- completing and submitting homework.



Source 1 Many people today would feel lost without the Internet.

skilldrill: Data and information

Conducting a survey and presenting the results

Geographers use surveys to explore people’s opinions, ideas and activities. By analysing the results they can gain valuable insights into personal and social behaviour. The key to finding useful information from a survey is asking the right questions. Try to ask closed questions (yes/no questions or questions that provide a limited selection of options to choose from) as much as possible. Closed questions in surveys are commonly multiple-choice and ask people to choose their reply from a set of answers that you provide. Open questions (a question that doesn’t give options to select from but encourages an individual’s own thoughts to be expressed) are sometimes important too, but because you may receive a huge range of replies you may not be able to use the data so easily. Follow these steps to design a survey and present the results.

- Step 1** Decide on the focus of your study.
- Step 2** When you have decided what your study will be about, work out what information you are interested in finding out. For example, your study might be about the Internet, and you may want information on how often people use it.
- Step 3** Decide what people you will survey. You will need to talk to at least 10 people to get data you can report on. Make sure that you have enough forms for all of the people you intend to survey. The more people you survey, the more useful and reliable your results will be.
- Step 4** Write a series of closed questions about your study. A closed question might look like this:
How often do you use the Internet at home?

- At least once a day ☐
- At least once a week ☐
- At least once a month ☐
- No Internet at home ☐

Step 5 Once you have your questions written, go over them to ensure that they are all focused on the subject of your study and are geared to find out the information you want. Make sure they are clearly worded and cannot be misinterpreted by people completing the survey. Ask a friend to read over your questions if you are unsure.

- Step 6** Conduct your survey. Ask the questions and fill in the forms yourself, or you can get your participants to fill them in. Make sure the responses have been entered correctly and that you have accurate records.
- Step 7** Once you have completed your surveys it is time to put the results together into a form you can use – this is called data analysis. This is often best done in a table like the one shown here.

Source 2 Data can be presented in a visual format like a table so the researcher can access information quickly and easily.

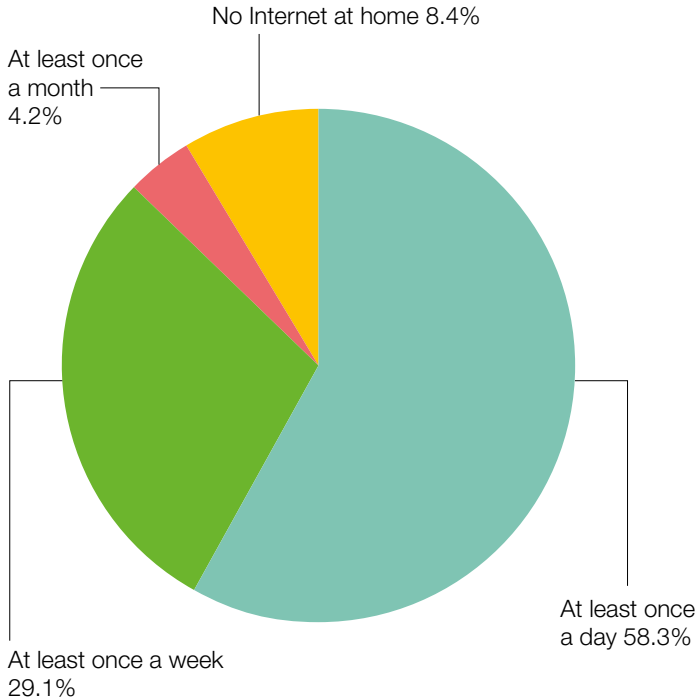
How often do you use the Internet at home?	Number	Percentage (%)
At least once a day	14	58.3
At least once a week	7	29.1
At least once a month	1	4.2
No Internet at home	2	8.4
Total	24	100

Step 8 Present your survey results in a way that make them easy to understand. Rather than a lot of numbers and writing, use graphs. Make sure you clearly label each graph with the question you asked and below each graph write a short summary of the results.

Apply the skill

- 1** Design and complete a survey about the ways in which people in your class and members of your family use the Internet. Include a minimum of 10 questions. Survey a minimum of five classmates and five family members (or other people you know outside of class). You might want to include questions like:
- Do you watch television shows online?
- Yes ☐
- No ☐
- If yes, how many hours a week would you watch on average?
- 0–2 hours ☐
 - 2–6 hours ☐
 - 6–10 hours ☐
 - 10 hours or more ☐

- 2** Once you have completed the survey analyse the results and present them in table and graph formats.



More than 90 per cent of the people in my class have access to the Internet at home. More than half the class use it at least once a day.

Source 3 How often do you use the Internet at home?

Extend your understanding

- 1** Compare your findings with those of a classmate. Write a report based on both sets of results explaining how often and in what ways you used the internet.
- 2** Present the results of your study to the class. Use your table or graph from the previous question as a visual aid, and talk through the most popular websites that people used, as well as the differences or similarities between the ways your family members and classmates used the Internet.

4.9 Global trade connections

In the last 50 years or so there has been an explosion in the amount and value of goods traded within and between nations. When your grandparents were your age they probably ate food grown and processed in their local area. Most of their clothes were probably made locally, and they most likely bought things they needed from local shops. Communication with other places in the world would have come through the letterbox.

Today, homes contain many items made in other countries and we tend to shop globally. Today, trade between nations is valued at about US\$18 trillion a year and international trade links people and places around the world. To make these connections there are:

- approximately 6000 planes in the air right now
- approximately 17 000 cargo ships crossing the world's seas and oceans
- pipelines transporting gases, oil and water a total distance of about 2 million kilometres
- more than 1 million kilometres of railway track.

The global flow of trade

Source 3 shows the amount of trade that flowed between the different economic regions worldwide in 2012. Imports and exports have a huge economic value for countries and the amount of trade taking place between countries grows bigger each year.

International trade is dominated by a few big players. The United States, Germany and Japan together account for about one-quarter of all exports and have done so for several decades. This dominance is threatened,



Source 1 This is the world's second largest cargo plane. It can carry 150 tonnes of cargo over 3000 kilometres.

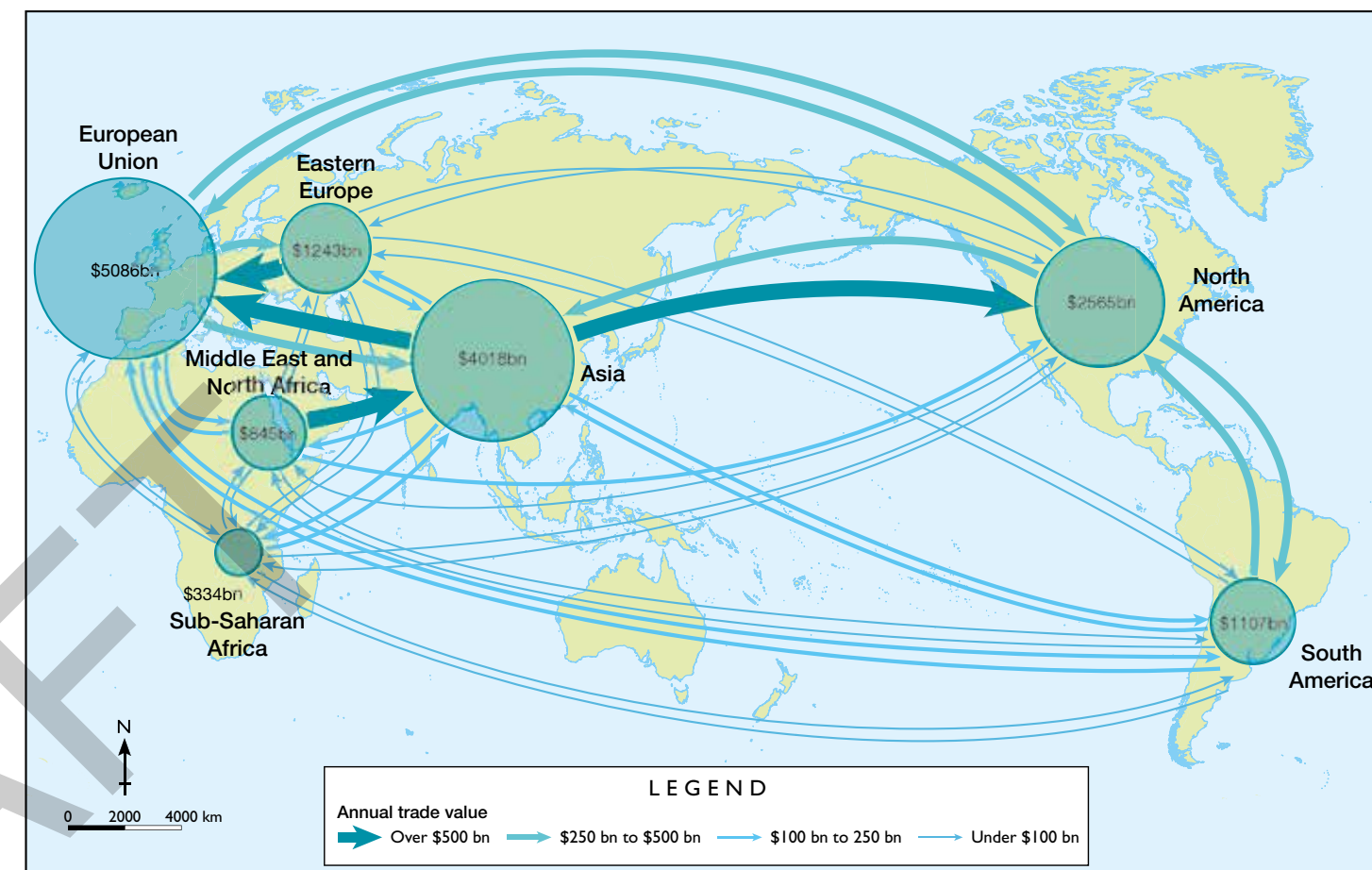


Source 2 About 90 per cent of international trade in goods is carried out by ship. Bulk shipping of goods such as oil, gas and grain accounts for most of this. These ships are waiting to load or unload in Hong Kong Harbour, one of the busiest ports in the world.

however, by the rapid growth in emerging economies, particularly China, India and Brazil. In 2011, Brazil had record trade figures, with its exports market reaching around \$US 256 billion, and trade between India and China also grew to a record level of \$US 73.9 billion in the 2011–2012 period.

Australia accounts for about 1.5 per cent of global trade and is ranked 21st in a list of the world's biggest exporters.

WORLD: GLOBAL FLOW OF TRADE IN 2012



Source 3

Source: Oxford University Press

Check your learning 4.9

Remember and understand

- 1 How are most of the world's goods transported?
- 2 Which countries have dominated global trade in the past?

Apply and analyse

- 3 Examine Source 3.
 - a Rank the seven regions of the world shown in the map, from the largest trader to the smallest.
 - b Describe the destinations of exports from Asian countries.
 - c Which region is the smallest exporter? Why do you think this is the case?
 - d Which region exports much more than it imports? Why do you think this is the case?

Evaluate and create

- 4 Discuss with someone older than you (say, a parent or grandparent) about ways in which their links with other places have changed in their lifetime. Develop a set of questions about means of communication, travel, and buying goods and services to help in your discussion. Report back to your class about what you found out from your discussion.
- 5 Think of one product that you (or someone you know) recently bought over the Internet and one product bought from a local shop. Find out where each product came from and map the journey taken by each to reach you. To help in your task, you can look up shipping routes at <http://www.sailwx.info> and aeroplane flight information at <http://planefinder.net/>. You might want to research some local trucking or delivery companies too.

4.10 Multinational companies

As you have learnt, one of the most common factors linking us around the world to people in different places is the movement of goods and services. In the last few decades, many large businesses based in wealthy developed countries have chosen to manufacture their goods in poorer developing countries. Because these businesses operate in more than one country, they are called **multinational companies** (MNCs). Some of the largest, most profitable and most recognisable brands in the world are produced by MNCs. These include Coca-Cola, Apple, IBM, McDonalds, Louis Vuitton, Adidas and Nike.

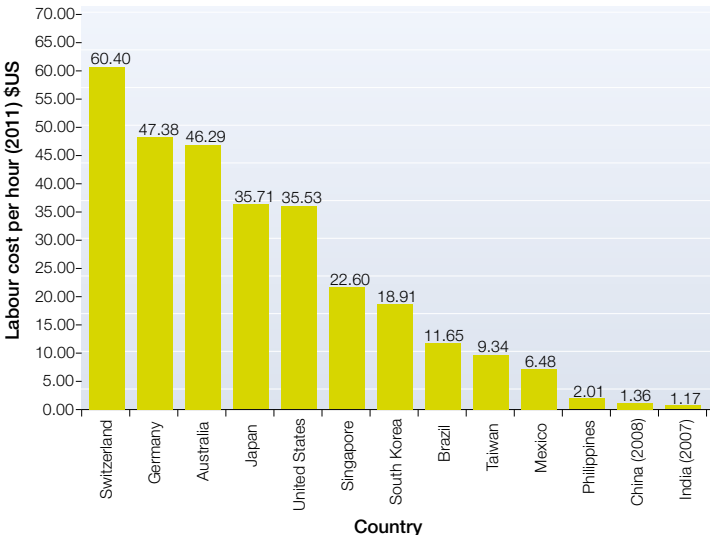
MNCs choose to base their manufacturing in developing countries for a variety of reasons, but the main one is cost. Labour costs are much lower in many of these countries (see Source 1) and this allows MNCs to spend less on manufacturing and thereby increase their profit.

Case study: Apple – a global giant

Apple is one of the world’s largest and most profitable multinational companies in the world today with annual revenues of over US\$150 billion. The company began in 1976 and at the time proudly boasted that all of its computers were made in the United States. Now virtually all of the 159 million products it sells every year are made outside the United States, mostly in China. While the cost of labour was a major factor in moving to China, other considerations were also important.

Virtually all of the components used in Apple products such as glass screens and computer chips are also made in China so it made sense to locate the assembly plant in the same place. Apple also found that Chinese plant owners and workers were much more flexible and willing to change than their American counterparts.

This is very important in a rapidly changing business such as electronics. The end result is that Apple can make an iPhone in China for about \$8 in labour costs. The same phone would have labour costs of \$73 in the U.S.



Source 1 Hourly rates of pay (including all benefits) for manufacturing workers in different countries

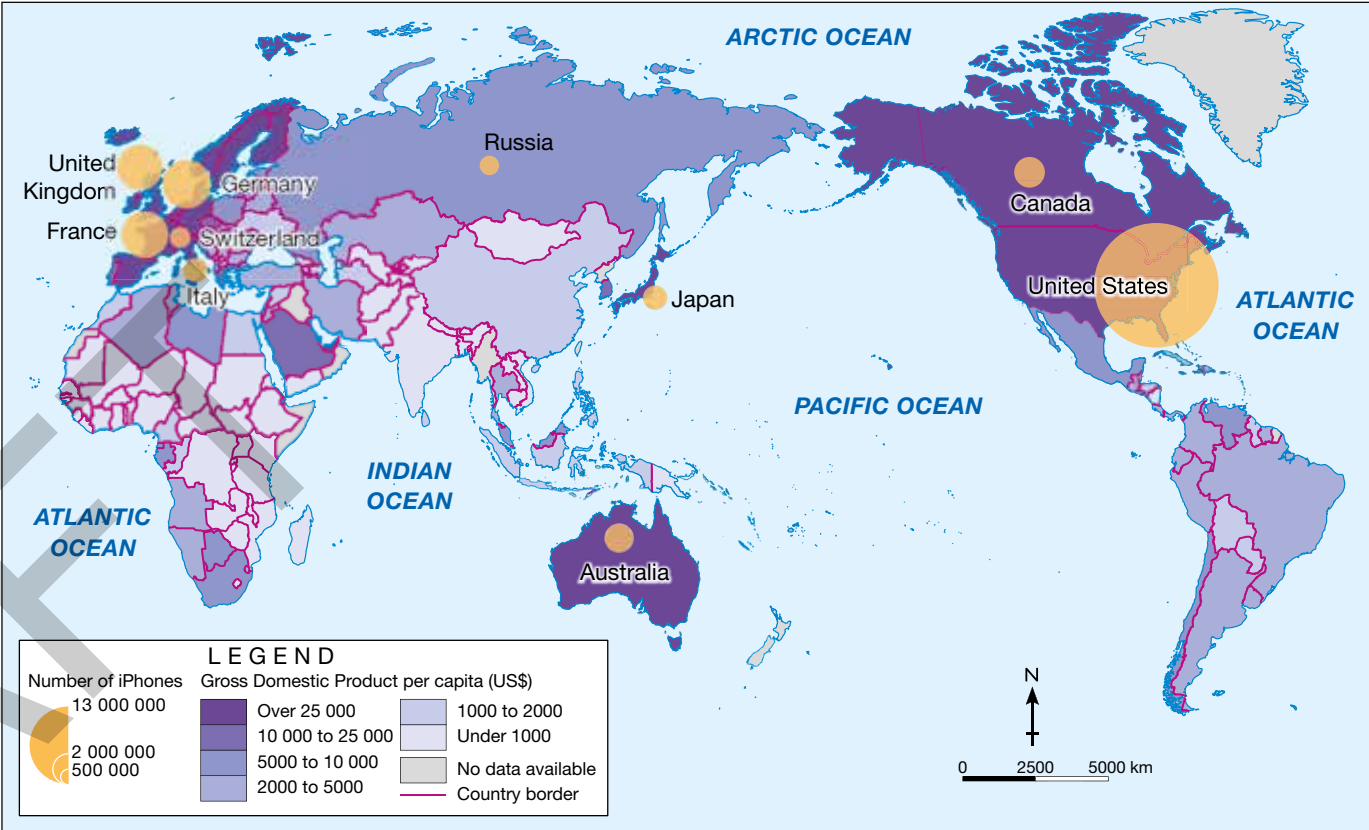
Source 2 Estimate of iPhone market share by country as at June 2009

Rank	Country	Estimated number of iPhones sold
1	United States	13 250 216
2	Germany	1 937 824
3	France	1 793 753
4	United Kingdom	1 682 491
5	Canada	805 594
6	Australia	762 161
7	Japan	525 658
8	Italy	490 451
9	Switzerland	334 649
10	Russia	326 458
	Other	4 490 745
	Total	26 400 000



Source 3 Thousands of Chinese job-seekers queue outside the Apple manufacturing plant in Shenzhen city, keen to become part of the global giant.

WORLD: GROSS DOMESTIC PRODUCT



Source 4

Source: Oxford University Press

Check your learning 4.10

Remember and understand

- 1 What is a multinational company?
- 2 Explain why Apple is described as a multinational company.

Apply and analyse

- 3 According to Source 1, which two countries pay workers the highest hourly wages? Which two countries pay the lowest? Why do you think this might be the case?
- 4 Why did Apple decide to move its manufacture of iPhones from the USA to China? Use evidence from Source 1 to support your answer.
- 5 Examine Source 2. What does this photograph tell you about the supply of labour in China?
- 6 Examine Sources 2, 3 and 4 and answer these questions.

- a In which Chinese city are iPhones made?
- b Where are iPhones sold?
- c What is the relationship between wealth (measured as Gross Domestic Product) and the purchase of iPhones?
- d Compare the **Gross Domestic Product** of the USA and China.

Evaluate and create

Complete some further research to do the following activity.

- 7 With a partner, discuss who benefits from the business activities of MNCs in different countries around the world. Consider consumers and the labour force in your discussion. Collate your ideas and report back to the class.

4.11 The global connections inside your laptop

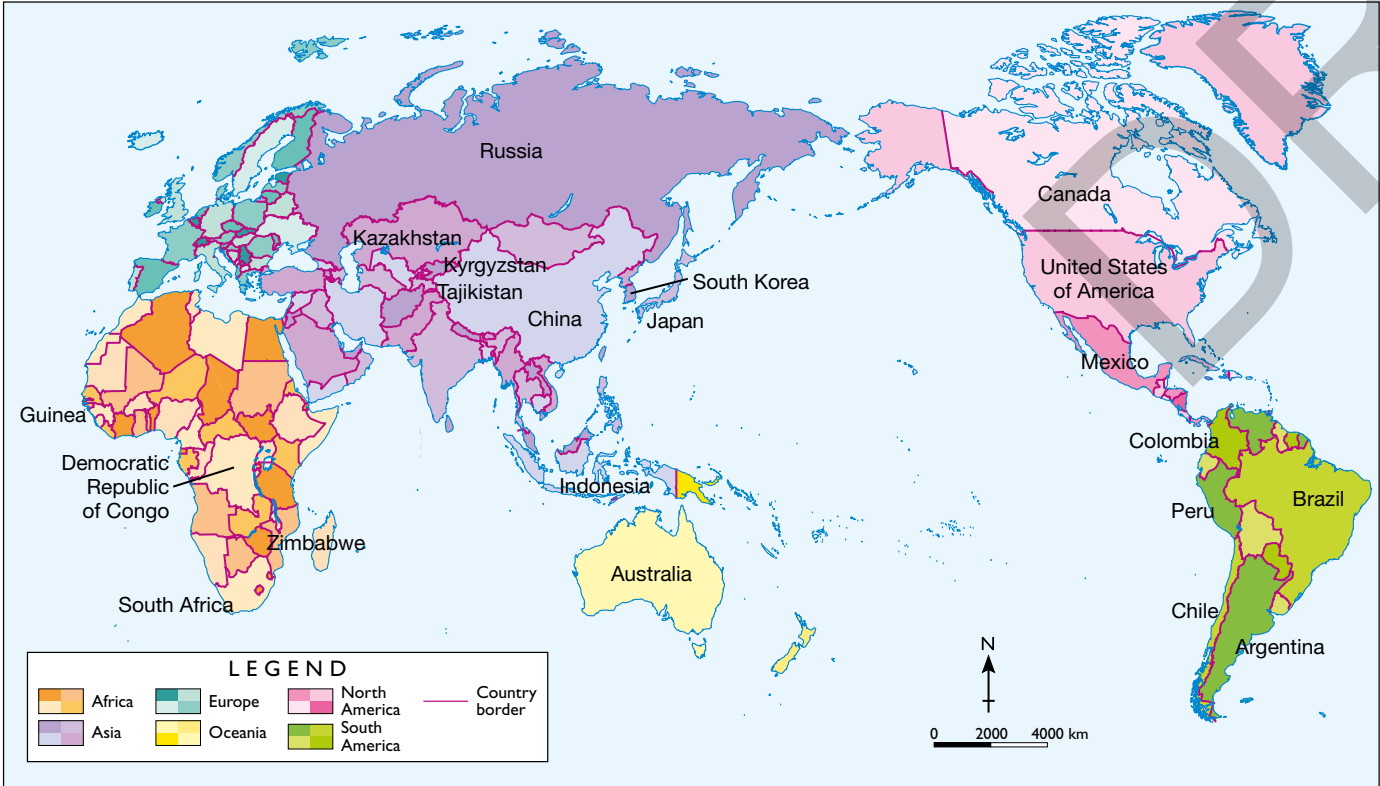
Hidden inside many of the items that you use every day are bits and pieces from all around the world. A modern laptop computer, for example, contains materials and components from at least 20 different countries located on every continent except Antarctica. A complex series of networks and supply chains produce these components, transport them, process and assemble them, then package and deliver the finished laptop to a store near you.

Sources 2 and 3 show the locations of a range of materials used inside every laptop computer. The actual origin of each piece inside a computer is difficult to determine as manufacturers constantly change the source of their raw materials. This can cause problems for communities who rely on supplying these materials to provide employment and income.



Source 1 Virtually all of the world’s laptops are assembled in Chinese factories owned by Taiwanese companies. In 2015, 286 million laptops were made in China.

WORLD: SOURCE COUNTRIES OF MATERIALS USED IN LAPTOPS



Source 2 Source: Oxford University Press

Source 3 Materials used in laptop construction and their country of origin.

Country of origin	Materials supplied for laptop construction
Canada	Europium, Aluminium
United States	Beryllium, Palladium, Phosphorus, Silicon, Copper, Europium, Boron
Mexico	Bismuth, Silver
Peru	Indium, Silver
Chile	Copper, Arsenic
Brazil	Silicon, Tantalum, Niobium, Aluminium
Argentina	Lithium
Colombia	Platinum, Guinea Gallium
Democratic Republic of the Congo	Cobalt, Tin, Tantalum, Titanium, Gold
Zimbabwe	Lithium
South Africa	Chromium, Gold, Manganese, Cadmium, Platinum
Australia	Titanium, Lead, Nickel
Russia	Ruthenium, Ferrite, Steel
Kazakhstan	Vanadium
Kyrgyzstan	Mercury
Tajikistan	Antimony
Indonesia	Tin
South Korea	Glass, Cadmium
Japan	Selenium, Steel
China	Germanium, Terbium, Magnesium, Rhodium, Yttrium, Plastics

The little pieces of Australia in every laptop

Australia is one of the most mineral-rich countries in the world. All laptop computers, for example, contain zinc, lead, gold and titanium, and Australia is amongst the world leaders in the mining of all of these minerals. The rocks near the town of Mt Isa, for example, contain some of the richest deposits of lead and zinc found on Earth. Settled in the 1920s, the town is now home to over 22000 people – virtually all of whom rely on the town’s mines for their employment and income.

Lead is mined and processed near the town. Lead ore is crushed and heated until it becomes a liquid so impurities can be removed in a process known as smelting. This process releases harmful gases and lead particles into the air. Recently some concerns have been raised that this is creating health risks for Mt Isa residents, particularly children. A study in 2008 found that 11 per cent of children tested had higher-than-normal lead levels in their blood.



Source 4 This lead mine at Mt Isa in north-west Queensland is one of the most productive in the world.

Check your learning 4.11

Remember and understand

- 1 Describe the interconnection between people in Mt Isa and the factory workers shown in Source 1.
- 2 Why are some people concerned about lead mining and smelting in Mt Isa?

Apply and analyse

- 3 Examine Source 3.
 - a What is Australia’s role in the production of laptop computers?
 - b Most laptops are assembled in China. Imagine that each material used in the computer reaches China by ship. On a world map sketch the route

taken by each material listed using the shortest sea route to Southern China. Estimate the total distance travelled by these materials.

- 4 Why do you think most laptops are assembled in China?

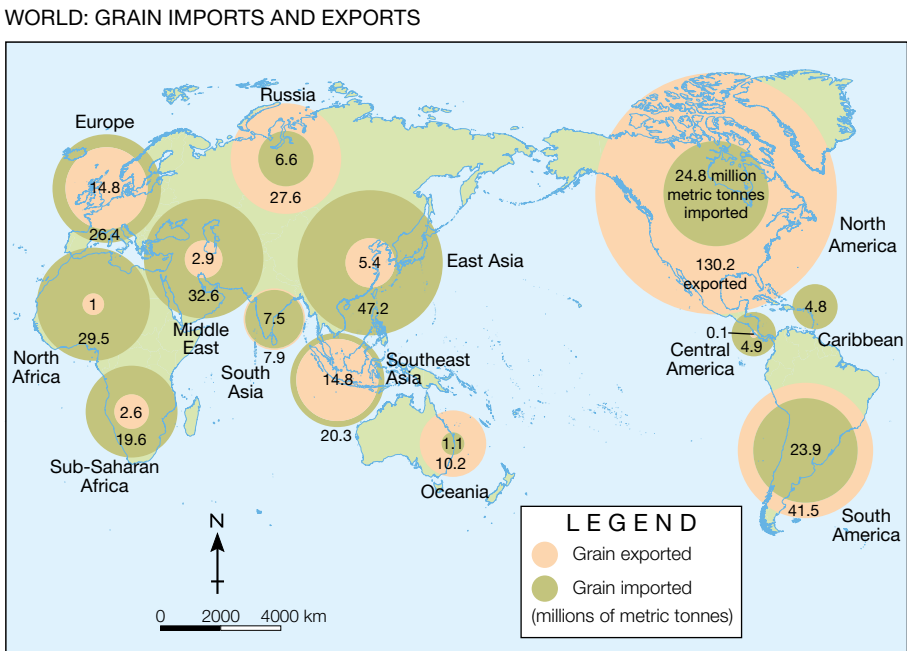
Evaluate and create

- 5 Brainstorm the impacts of the laptop production process on people and the environment. Try to think of both positive and negative impacts.
- 6 Research the mining of cobalt in the Democratic Republic of the Congo and write a short report on it including any impacts it has on people and the environment.

4.12 Connecting through food

Many countries around the world, including Australia, produce more food than they consume. As a result, some of that food is exported to other countries.

We can get an idea of the global connections made through food by looking at one type of basic food product and its movement around the world. Source 1 shows worldwide grain imports and exports over a year. Not all grain that is produced by countries is traded, in fact only a small proportion of the grain is. Only about 18 per cent of world wheat production and 10 per cent of maize production is traded globally.



Source 1

Source: Oxford University Press

Advantages and disadvantages for Australia's food producers

Over the last few decades, governments around the world have begun to reduce trade barriers between countries and this has resulted in some advantages and some disadvantages for Australia's food producers and consumers. For example, consumers now have access to a wider range of foods from around the world. This has created business opportunities for food suppliers such as grocers and restaurants, as well increased choice for consumers. On the other hand, Australian farmers now have to compete with other countries who may be able to provide produce at cheaper prices.

Australian farmers have responded to these challenges by producing food more efficiently, or by specialising in foods that are in high demand in other countries, such as organic foods. As a developed country, Australia also has the advantage of using innovations and new technologies in food production. Australia's proximity to Asia, with its large and increasingly wealthy markets, could also provide Australian farmers with new export opportunities.

keyconcept: interconnection

Live animal exports

Most Australian meat that is exported to countries overseas comes from sheep and cattle that are killed in Australian abattoirs. Before export, the meat is processed, frozen and carried in refrigerated containers to ports around the world. Some sheep and cattle, however, are transported on special ships while they are still alive and are killed and processed in other countries. This type of animal export earns about \$1 billion a year for Australia and employs about 10 000 people in rural and regional areas.

Many Australians are opposed to live animal exports as they believe it is cruel to the animals. This is because they feel the importing countries may have lower standards of animal welfare than in Australia. From 2011, the Australian Government temporarily stopped the export of live cattle to a number of countries following concerns raised about the inhumane treatment of Australian cattle there.

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

skilldrill: Data and information

Constructing a flow map

Geographers use flow maps to describe the connection between events and show how things move between different places. Source 3 on page 157 is an example of a flow map.

A flow map is a particularly useful tool for displaying information about the movement of goods and services between places. Follow these steps to construct a flow map.

- Step 1** Locate an outline map that displays all of the countries represented in your data, including the country of origin.
- Step 2** Develop a scale to be included in the legend for the arrows you will put on your map. The size or amounts of the flows between the country of origin and the destinations are shown by the different widths of the arrows. The smaller the amount shown on the scale is, the narrower the arrow is, the larger the amount, the fatter the arrow.
- Step 3** Join the country of origin with each destination using an arrow of the correct width according to the scale you have drawn. Plot these out in pencil first – you may need to try a few different designs to make all of the arrows fit neatly.
- Step 4** Shade each destination and label each with its name and the relevant data.
- Step 5** Finish your flow map with **BOLTSS**.

Apply the skill

- 1** Complete a flow line map showing the destinations of Australia's live sheep exports. Use the figures in Source 2 and an outline map of the world as your base map.

Source 2 The top 5 destinations of live Australian sheep exported in 2010.

Destination country	Live sheep exports from Australia
Kuwait	578 000
United Arab Emirates	454 233
Qatar	239 414
Jordan	154 500
Oman	79 804



Source 3 A ship is loaded with Australian sheep in Adelaide bound for the Middle East.

Check your learning 4.12

Remember and understand

- 1 Why does Australia export food to other countries?
- 2 Why do some governments make it difficult to import food into their country?

Apply and analyse

- 3 Examine Source 1.
 - a Is Oceania a net exporter or importer of grain?
 - b Which region is the largest exporter of grain and which is the largest importer?
 - c Examine your completed flow line map.
 - d Describe the distribution of the countries that import live sheep from Australia.

- e In small groups, discuss the possible reasons for the distribution you have noted. Consider a range of factors by using the SHEEPT (social, historic, economic, environmental, political and technological) method in your discussion. For more information on SHEEPT refer to page XX of 'The geography toolkit'.

Evaluate and create

- 4 Research the live animal trade further and list the arguments for and against this trade. Identify groups who support the trade and those who oppose it. What is your opinion, and what information did you base it on?

4C rich task

The geography of you

You are a global citizen, and the things you use and consume come from different places all over the world. The decisions you make about the things you buy link you to people and places both near and far. This connection means that your decisions can impact on these people and places in both positive and negative ways. This broadsheet contains a series of activities that will make you more aware of the ways in which you are connected to producers of products and services from all around the world – and how they are connected to you.

skilldrill: Data and information

Collecting, recording and representing primary data

During any geographical inquiry, geographers will ask questions, collect a range of data and information, record their findings and represent them so they can be interpreted more easily. By following a process of geographical inquiry like this, geographers can be sure that the conclusions they reach will be accurate, useful and reliable.

Geographers often collect their own data by interviewing people, carrying out research, conducting surveys, taking photographs, or drawing field sketches. This kind of information is known as primary data. They record this primary data carefully before representing it in different ways (e.g. as diagrams, tables, charts, graphs, maps or a combination of these).

Collecting, recording and representing your own primary data is a great way to practise your skills as a geographer. Follow these steps to collect, record and represent a range of primary data about the clothes you wear, the stuff you own and the ways you connect to other people – in other words, the geography of you!



Source 1 Do you know where the things you use and wear come from?

Step 1 Construct a key inquiry question to begin your investigation, for example, ‘Where do my clothes come from?’. Select 20 different clothing items from your wardrobe and record where each item was made. Try to select a range of clothing made from a variety of fabrics. The tags on your clothing will often include some information about where the item was made.

Step 2 Collect and record the information for your inquiry by creating a table or spreadsheet and entering your results into it.

Step 3 Choose the best way to represent your findings. Choose a format that clearly communicates the information. You may choose to represent this data as a table, a graph (e.g. pie chart, bar graph or line graph), an infographic or a map (e.g. a spatial distribution map or a choropleth map) – or even a combination of these things.

Apply the skill

Complete one or more of the following tasks to better understand the effects of your purchasing habits and Internet use and how your choices connect you to the rest of the world:

1 Exploring the origin of your clothing

Follow the steps outlined above to explore the origin of 20 items of your clothing. Collect the countries of origin for any of the 10 items you have researched, record the data and represent it in a suitable format of your choice.

2 Exploring the origin of your stuff

Select 10 items you use every day such as a pen, a computer and a DVD and examine them carefully to see if they contain some information about where they were made. You could also try an Internet search engine to research each item further but you may need the name of the manufacturer and a model name or number.

Collect the countries of origin for any of the 10 items you have researched, record the data and represent it in a suitable format of your choice.

3 Exploring your communication links

Monitor your Internet and smart phone use for a week, recording the names and locations of people you communicate with via email, SMS, Facebook, Twitter, Instagram and online games. Enter the results into a table or spreadsheet.



Source 2 A worker shows a label on a piece of newly made clothing at the Bantai textile factory in Dhaka, Bangladesh.

Extend your understanding

1 Conduct your own research into the Rana Plaza disaster and how it brought worldwide attention to the issue of sweatshop conditions in Bangladesh. Investigate the conditions faced by workers in the sweatshops, and find out what is being done to address the problems with safety and working conditions. Write a half-page report outlining what you find.

2 Examine your wardrobe and make a list of the brands that you usually wear. Research whether or not these brands use factories in Bangladesh. Create a table to record your results.

3 Do you think your purchasing choices have a direct impact on the people who work in factory sweatshops? List your thoughts, discuss them with a partner and report back to the class.