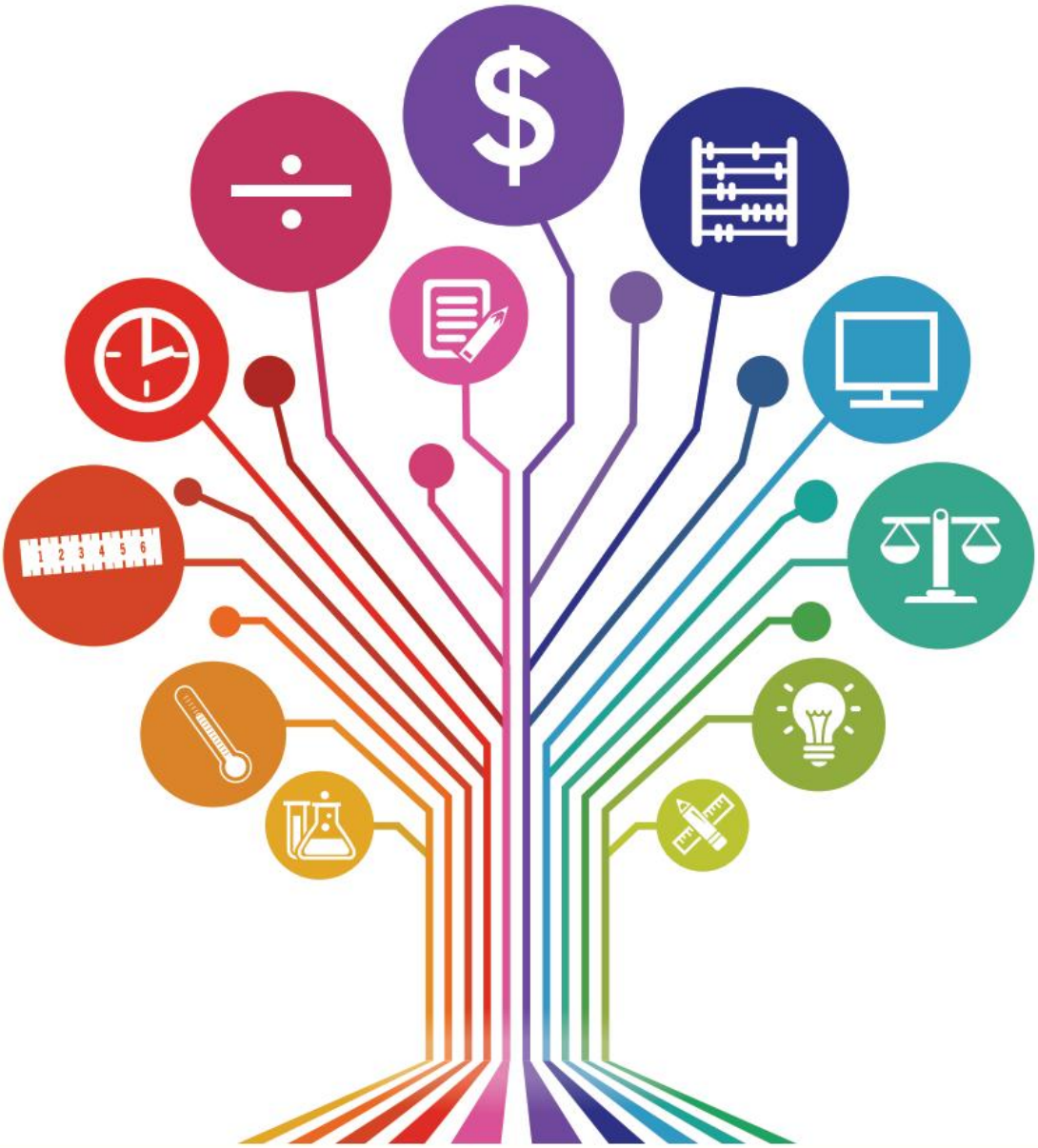
Using maps



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Version 1.1

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Using maps

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Contents

North, south, east and west

When you look at a map or globe of the world, the North Pole is at the top and the South Pole at the bottom. Australia is in the bottom, or southern, half of the world.

In Australia, we talk about the north, south, east and west states of Australia. Some states are named according to their position. For example, Western Australia is in the west of Australia and South Australia is in the south.

In a city there are northern, southern, eastern and western suburbs. These are named according to where they are in relation to the capital city; for example, Adelaide or Sydney.

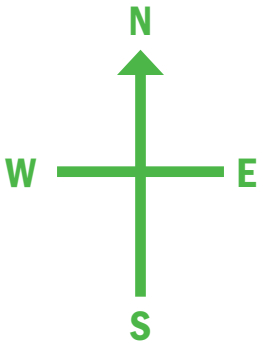
Your house has a north, south, east and west side. Each of these sides have different amounts of sun shining on them at different times of the day, and at different times of the year; for example, winter and summer.

Story

Tony has moved to a new house and has many things to arrange. He talks to his friend at work about how to shade the house from the sun in summer and how to warm the house in winter. Tony has heard that you should plant different types of trees and shrubs near the house, and that the living rooms should face the north, but he doesn't know why.

Points of the compass

The four main points of the compass are north (N), south (S), east (E) and west (W). North is always at the top. South is the opposite direction to north. East and west are also opposite to each other, with west on the left as you face north.



The pointer of a compass always points to north.

North is shown on a map by an arrow with the word north (or N) written above it.

Activity 1

1. Here is a map of Australia. Label the names of the states and territories. Your trainer can help you.

2. Name the state or territory that is:

   a. north of South Australia_____

   b. south of Victoria _____

   c. west of Queensland _____

   d. east of Western Australia_____

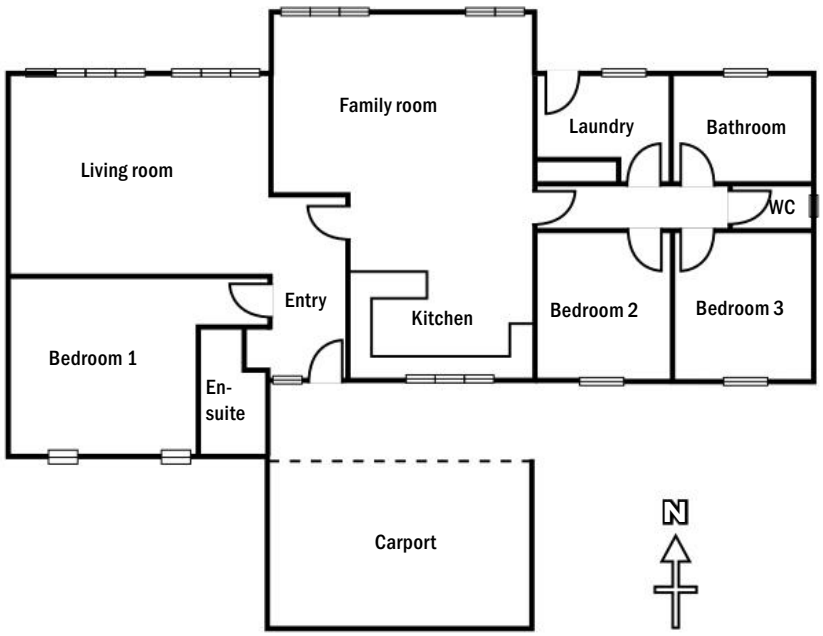
Click to complete Activity 1

The movement of the sun

The sun rises in the east in the morning, moves across the north section of the sky during the day, and sets in the west. In summer, the hottest part of the day is between 10 am and 3 pm, or during the middle of the day. At this time the sun is in the north and west. So, if you have a house, it will be cooler in summer if the north and west sides are shaded by blinds, trees or bushes.

Activity 2

Look at the diagram of a house below. Then answer the questions that follow.



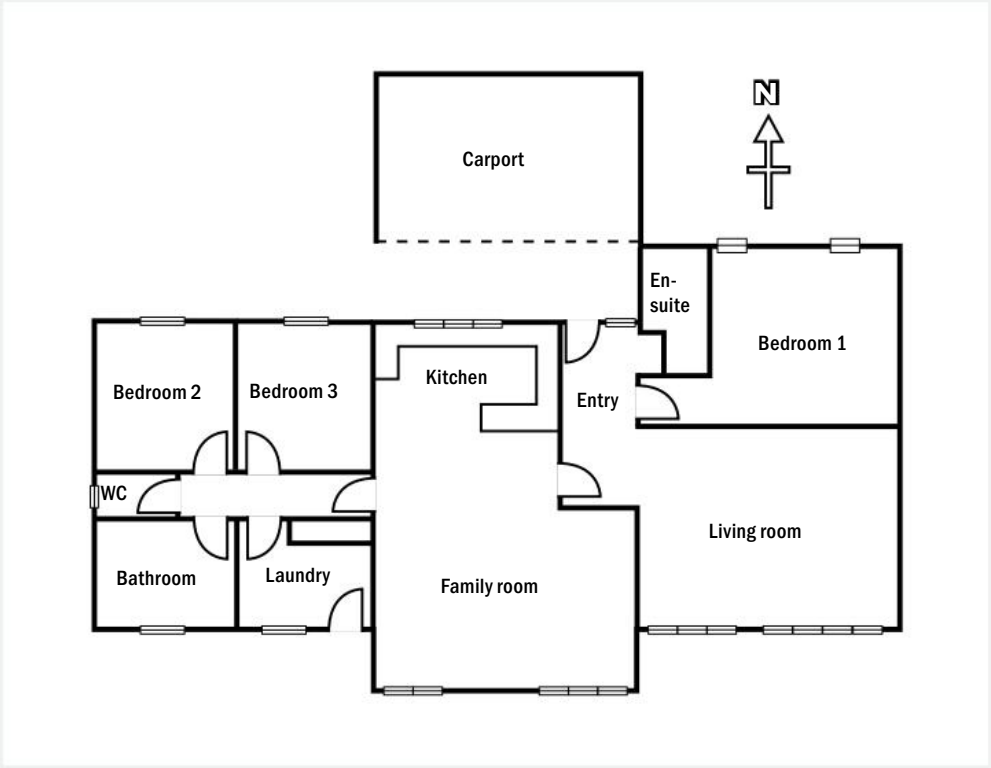
1. Draw in the position of sunrise and sunset and where the sun would be at midday for this house.
2. Which room or rooms has the hot afternoon sun in summer?

   _____

3. Which room or rooms would be warmed by sun in the middle of the day?

   _____

Now, look at the house if it is in a different position.



4. Draw in the position of sunrise and sunset and where the sun would be at midday for the house.

5. Which room or rooms has the hot afternoon sun in summer, now?

_____

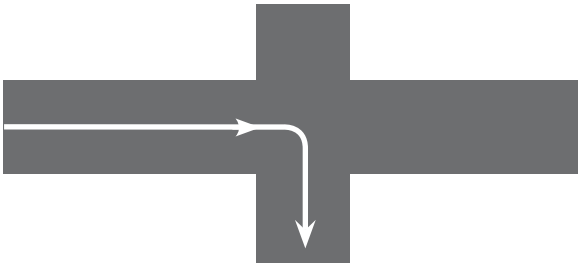
6. Which room or rooms would be warmed by sun in the middle of the day, now?

_____

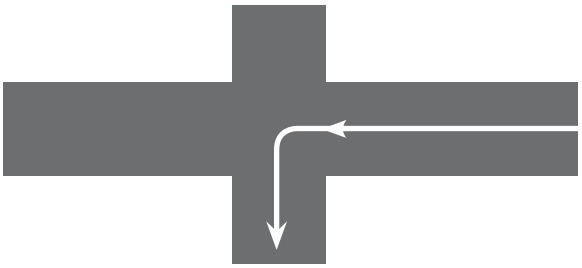
Click to complete Activity 2

Why north, south, east and west?

When you ask someone for directions to a place, people may tell you to go along the road and turn right at the first intersection.



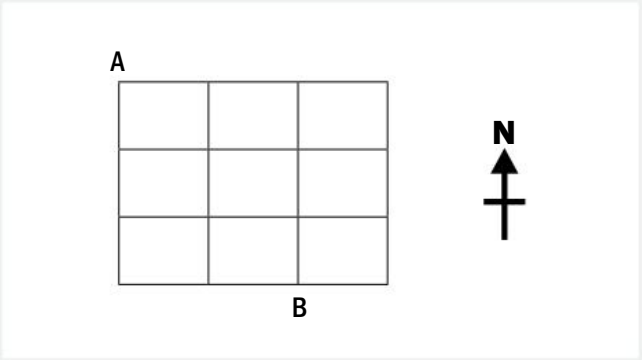
If you come from the opposite direction you would turn left into the street. Right and left depend on the way you are facing.



Better directions would be to say to go along the road and go south at the intersection. This avoids any confusion, as south is the same from both directions.

Activity 3

Look at this diagram. You need to travel from point A to point B. Write the directions, using north, south, east and west. The first two are given for you. (Note: there are many ways to travel this route.)



1. Start at point A.
2. Travel one block east, then one block south.
3. _____
4. _____

Click to complete Activity 3

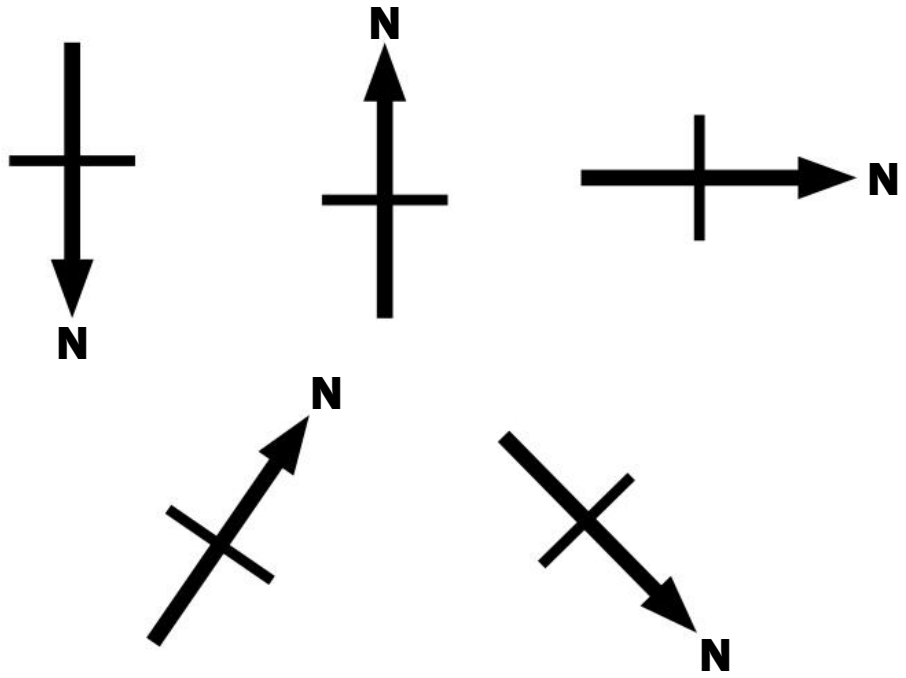
Filling in the four compass points

Most maps are drawn with north at the top. You should look for north when you are reading a map. If north is not at the top, turn the map so the north arrow faces the top. Once you know north, then you can fill in south, east and west.

Activity 4

Fill in the compass points south, east and west for each of these.

Hint: Turn the page around so north is at the top.



Click to complete Activity 4

Addresses

Your address is where you live. It also tells the postal workers where to deliver your letters. It has a street number and the street name. Your address also has the name of the suburb you live in and its postcode, so you mail comes to the right area and state.

Here is an example of an address:

7 Harold Street

Ormond

Victoria 3204

When someone is looking for your address, they need to know which part of the city or country you live in. Large-scale maps, showing major cities and towns, and detailed maps can be used show where you live.

Story

Tony's friend at work, Karl, wants to come and see Tony's new place. Tony gives Karl his address. Karl doesn't know the area, so Tony goes online to Google maps. He first shows Karl a map of Ormond and the surrounding suburbs. Tony then zooms in to show the streets close to his home. (There is more information about Google Maps later in this learner guide.)

Detailed and big-picture maps

A map is an aerial picture, which means it is drawn from a view in the air and looking down. Think about if you are travelling in a plane. If you are close to the ground, you can see a lot of details like streets, houses and roundabouts. These are the things in detailed maps. However, if you are higher in the air, you can only see a bigger picture without as many details. This is what a big-picture map shows, so you can compare where one place is in relation to another.

Activity 5

1. Access Google Maps at: www.google.com.au/maps
2. Type your address into the search box, and press search. You can zoom out for a less-detailed map, by clicking on the '–' button at the bottom right side of the screen.
3. Now, look at the map and where you live and write what is to the:

   a. North of your house

   _____

   b. South of your house

   _____

   c. East of your house

   _____

   d. West of your house

   _____

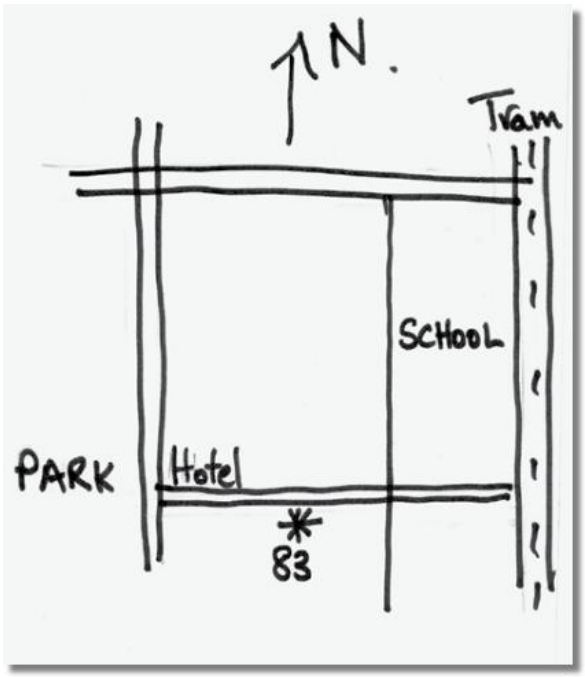
Click to complete Activity 5

A sketch map

A sketch map is a rough drawing that shows some important features (landmarks) such as streets, intersections (where streets cross each other), shopping centres, parks or hospitals that are nearby.

A sketch map should also have a north arrow or some way to allow the user to know the map is facing the right way.

Here is an example of a sketch map.



Activity 6

Draw a sketch map of your house and the nearby streets. You may like to look at a street map to help you, but remember, a sketch map is a not exact.

Click to complete Activity 6

Landmarks near your address

A landmark is an obvious feature that marks the area (or land). For example, a landmark could be a railway station, lake or park. It could also be a main road, a big roundabout or a building like a church or post office.

When describing a location using landmarks, some useful words are:

- next to
- opposite
- near
- parallel
- behind
- in front of.

For example, someone may describe where they live by saying they live off the main road opposite the river, two blocks after the supermarket.

Activity 7

Use your sketch map and the landmarks you have included to practise describing where you live in relation to the landmarks near your house.

Click to complete Activity 7

Your address backwards – big-picture to detail

Each part of your address (the street, suburb and state) has a map to show it. For example, imagine you are in a plane coming to Australia from overseas. The pilot first comes in the right direction (north, south, east or west) from another country to find Australia. The plane then finds the right part of Australia (northern, southern, etc.) and then the state and the city. The plane then finds the airport in the city.

Activity 8

Fill in the following information about your home address, going from the big-picture to detail.

Place in the world (north/south): _____

Country: _____

Part of Australia (north/south/east/west): _____

State or territory of Australia: _____

Suburb or town (including postcode):_____

Street number and name:_____

Click to complete Activity 8

Map reference

A street directory or an atlas (book of maps) has an index at the back. This is like the index in any book and gives you the page number for what you are looking up. However, a map index also gives a map reference, which is the position on the page to find the street or whatever you are trying to locate. A map reference is usually a letter and a number, which tells you the column and the row. Where the letter and the number cross is the location you are looking for.

For example, Ford Street may be on page 16 and at E4. This is marked on the grid below.

	A	B	C	D	E	F
1						
2						
3						
4					**Ford St**	
5						
6						

Activity 9

Mark these locations on the grid:

- In A1 write X
- In D6 write Y
- In C4 write Z
- Write N in one of the squares next to E4

	A	B	C	D	E	F
1						
2						
3						
4					Ford St	
5						
6						

Click to complete Activity 9

Using a map

There are many types of maps that show a lot of information. A street directory or online map has many detailed maps. These maps show streets, parks, mountains, train stations, traffic lights and other information. Other maps show the bigger picture.

The best maps are clear, easy to read and show the right amount of information. Using different colours for different landmarks or features makes maps easier to read.

Story

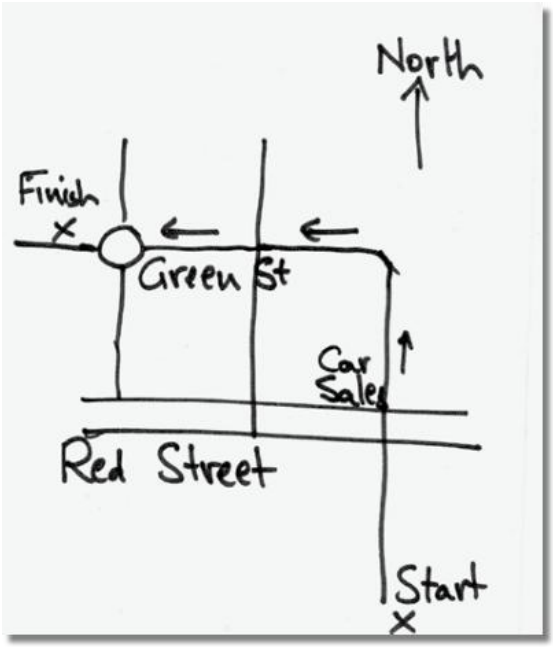
Karl is going to see Tony for the first time. He uses Google Maps to find a map showing Tony's house and now has to work out the route to travel from his house to Tony's. Tony shows Karl how to use the 'Directions' function in Google Maps. This shows the best way to get to Tony's house. It also tells Karl how long it is likely to take him to get there.

Studying a map before you travel

When travelling to a destination, you need the direction, distances and places to look out for. It is best to be prepared and pend some time looking at a map before you start driving in the car. If you are travelling on foot, it is easier to stop and look at a map while you are walking.

First, start with a big-picture map showing both the start and finish to give you a general picture of the trip. For a car trip, locate the main roads to get an idea of the direction you need to travel in. Then, use a more-detailed map to show the specific parts of your trip.

You may like to draw yourself a sketch map of your trip marking in the places where you need to turn. Here is an example of a sketch map for the route you will travel.



You can then describe your trip in words; for example, go north to the lights at Red Street. Cross Red Street and go past the car sales on the left. Go round the corner into Green Street. Cross one street and a roundabout. Finish just past the roundabout at house number 65 on the right.

Today, many cars also have built-in map and GPS functions. These allow you to enter an address and be provided with directions to your destination. You can find more information about GPS devices by doing an internet search.

Distances on a map

A map usually has a scale, which is a line divided into sections, where every section is equal to a distance; for example, 10 km. Here is an example of a scale. The line is divided into centimetres. Every centimetre on the map is equal to 10 km in real distance.

You can use the scale to work out how far you have to travel. The easiest way is to use a ruler. Use the ruler to measure your journey on the map in centimetres. Say you measure 3.5 cm on the map. If the scale for your map is 1 cm is equal to 10 km, multiply 3.5 cm by 10 km to get your distance in km.

So 3.5 × 10 = 35 km.

You have 35 km to travel.

Activity 10

Access Google Maps at: www.google.com.au/maps

Type in your home address and press 'Search'.

Look at the scale in the bottom right-hand corner.

Now, zoom out a few times, by using the '–' button.

What happens to the scale?

_____

_____

_____

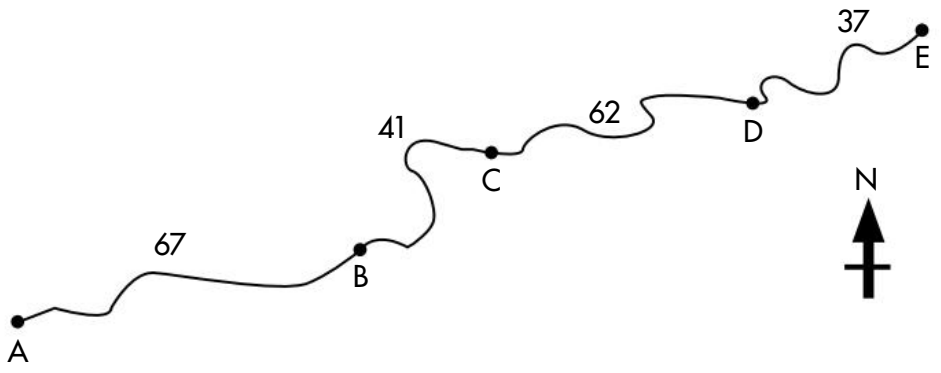
Click to complete Activity 10

Road distances in the country

Maps that show road distance in the country often have marks on the road at certain places. Between these marks is a number. This number is the number of kilometres between the two marks shown on the road. This helps you work out the distances you need to travel, especially when the roads are not straight and easy to measure with a ruler. If you are travelling a long distance, you need to add the distances between marks together to find the total number of kilometres between the start and finish of your trip.

Activity 11

Look at this map. It has the kilometres marked between different points. Answer the following questions using the map.



1. How far is it from A to C? _____
2. How far is it from C to E? _____
3. How far is if from A to E? _____

Click to complete Activity 11

Travelling time in a car

When you are travelling on a highway or road in the country, you are allowed to drive fast, but always check and follow the speed signs. In most states and territories, the speed limit in these areas is 110 km per hour.

However, sometimes you need to slow down or turn. So you probably travel closer to 100 km each hour. You can work out how long your travel time is by dividing the total distance of your trip by your speed. For example, if you travel from Sydney to Melbourne, that is a distance of about 876 km. Your speed will be close to 100 km per hour. So divide 876 km by 100 km:

876 km ÷ 100 km = 8.76 hours travel time

Activity 12

Calculate how long your travel time is if you do the following trips.

1. Adelaide to Perth = 2690 km at a speed of 100 km per hour

2. Alice Springs to Darwin = 1497 km at a speed of 90 km per hour

3. Brisbane to Cairns = 1718 km at a speed of 85 km per hour

Click to complete Activity 12

Often there is a lot of traffic in the city, so you may not be able to do a trip in the shortest time. You may need to add on some extra time depending on how busy the roads are. For example, peak hour is the busiest time on the roads. This is between 7 and 9 am, and 4 and 7 pm.

So, if you plan to travel during these times, you should leave earlier to allow yourself more time. You can also use Google Maps to help you plan your trip.

1. Go to this website: www.google.com/maps
2. Click on the arrow, next to the search function at the top of the page.
3. Type the address of where you start and end your journey into the 'Starting point' and 'Destination' boxes.
4. You should now see a map with your journey marked in blue. On the left-hand side of the screen you are given the distance, travel time and directions to take.

Practise using this website to help you plan your trips.

Measuring distance on foot

Travelling on foot takes the longest time. Most people walk about 1 km in 15 minutes. If a city block is about 200 m, you could walk about five city blocks in 15 minutes, as five city blocks is close to 1000 m or 1 km.

To find how long it takes to travel, you multiply the total distance you are travelling (for example, 5 km) by 15 minutes.

5 km × 15 minutes = 75 minutes (or one hour and 15 minutes)

Activity 13

1. How many minutes or hours will it take to walk 3 km?

   _____

2. How many minutes or hours will it take to walk 0.5 km?

   _____

3. Can you work out how many kilometres you would walk if you walk for one hour (60 minutes)? Note: Divide the minutes by how long it takes to walk each km.

   _____

4. How many kilometres would you walk if you walk for two hours?

   _____

Click to complete Activity 13

Are you lost?

At some stage on your journey, you may get the feeling that you are not going the right way. First ask yourself – am I really lost or am I just feeling a bit unsure? You can feel confident that you are on the right route if you see what you expect to see, such as landmarks, along the way.

Story

Tony gets a call from Karl as he is coming to see him. 'I'm lost!' says Karl. Tony asks him the name of the road he is on and a nearby intersection. He also asks Karl what landmarks he can see, to make sure he is travelling in the right direction. Tony tells Karl he is on the right road and describes the last part of the trip to him. Karl arrives soon after.

Map symbols

Symbols and other information on a map can help during your journey. The map shows landmarks such as schools, shopping centres, parks and roundabouts. However, some maps have other special symbols on them or use different colours for different features.

A symbol is a picture or letter that means something.

The meaning of symbols is shown in the key (or legend) of a map.

The key is explained at the start of a street directory or atlas, or on the side of a map.

Activity 14

Look at the symbols below and find the grid reference for the following symbols.

1. Hotel (H) _____
2. Hospital _____
3. Airport _____
4. Toilets _____
5. Parking _____
6. Post office _____
7. Petrol station _____

Click to complete Activity 14

Coloured maps often show more information than black and white maps. For example, part of a map that is blue is usually water – lakes, the ocean, the sea or a river. Large main roads are also a different colour to smaller roads.

Where am I now?

A good way to work out where you are is to look for street names. Try to find the street names at an intersection, as these should be on your map. Then, make sure your map is turned in the same direction as the roads at the intersection. If your map and the roads are the same, you know where you are. Try getting used to turning your map around to the direction you are travelling in.

Ask someone for directions

If you really can't work out where you are, then ask someone else to tell you where you are, or ask them for directions. Show them your map or explain where your destination is. Remember, not everyone can read maps, so you may need to explain how you were planning to get there. Also, not everyone is good at giving directions, so if something doesn't make sense you may need to ask someone else.

Activity 15

Ask a friend, family member or classmate to give you directions to a place you are not familiar with; for example, a school or park. Ask them to give you directions without telling you your destination. Draw yourself a sketch map and follow the directions to see if you arrive at the right place. Remember to include the direction you are travelling and all the turning points and landmarks they say you should see.

What you have learnt

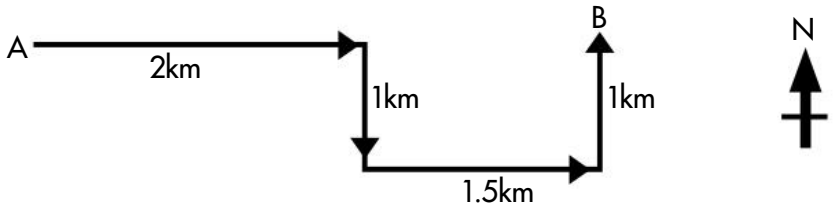
Put a ✓ in the box when you have learnt these things.

- ☐ There are four main points of the compass: north, south, east and west.
- ☐ The pointer of a compass always points to the north.
- ☐ When giving directions, use north, south, east and west instead of left and right, to avoid confusion.
- ☐ A map is an aerial picture, which is either detailed (close-up) or big picture and shows less detail; for example, major cities and towns.
- ☐ A sketch map is a rough drawing, which shows your travel route and some important landmarks (obvious features) on your journey.
- ☐ A map reference helps you find a particular street or location and is usually a letter and a number; for example, J12.
- ☐ A map has a scale, which gives you the distances on the map.
- ☐ To work out travel distance, multiply the distance on the map (for example, 4 cm) by what the scale says 1 cm is equal to (for example, 2 km). So 4 × 2 = 8 km.
- ☐ To work out travelling time, divide the travel distance by the speed you travel to find the time in hours; for example, 900 km ÷ 95 km (per hour) = 9.47 hours.
- ☐ To measure travelling time by foot, multiply the total distance (in km) by 15 minutes (the average speed a person walks); for example, 4 × 15 minutes = 60 minutes (or one hour).
- ☐ Symbols and different colours are often used instead of words on a map and are explained in the key (or legend).
- ☐ If you get lost, try to locate the names of streets to help you find your way, or ask someone for directions.

Check your learning

Answer the following questions.

1. Give instructions for this trip from point A to point B. Use north, south, east and west directions as needed.



_____

_____

_____

_____

2. Look at a map of Australia and find Alice Springs in the middle. Which capital city would a plane reach if it:

   a. flies east from Alice Springs? _____

   b. flies north from Alice Springs?_____

3. Fill in north, south, east or west to say where these are, or occur in the world.

   a. The bottom of the world _____

   b. Sunset _____

   c. Sun in the middle of the day _____

   d. Sunrise _____

4. Go to www.google.com.au/maps

   In the 'Search' box, type 'Adelaide South Australia' and press 'search'.

   Zoom in on the Adelaide CBD (central business district, or city centre), until the scale says 200, and you can see the names of the streets.

   Answer these questions using the map.

   a. What is the name of the Gardens that are south of South Terrace, and between Sir Lewis Cohen Ave and Peacock Road?

   _____

   b. What is the name of the square two blocks north of Veale Gardens, on Morphett Street?

   _____

   c. What is the name of the university that is north of North Terrace, and at the east end?

   _____

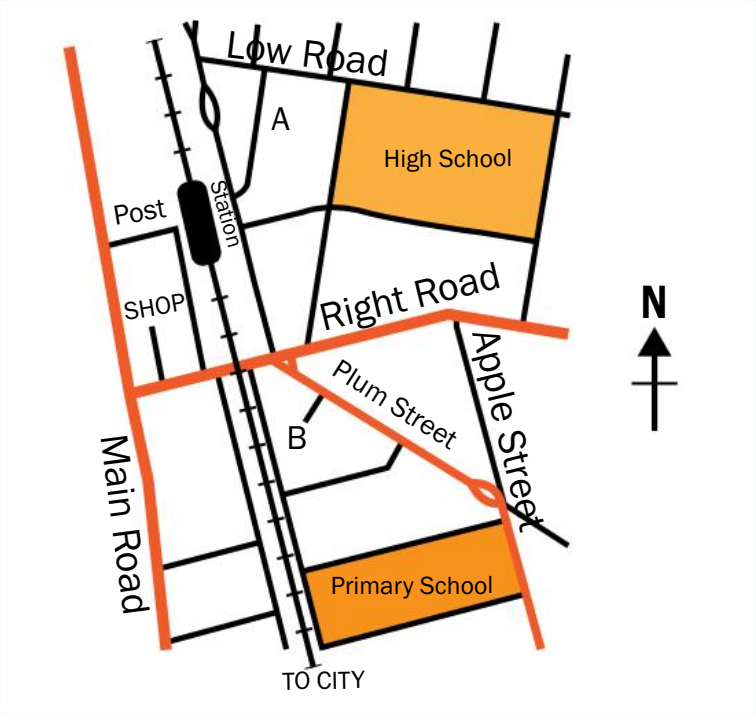
   d. What is the name of the river that runs to the north east of the CBD?

   _____

   e. Now, zoom out, until the scale says 1 km. Look to the west of the city. What would you find south of the A6 and between Tapleys Hill Road and the A14?

   _____

5. Use the following map to do the activities below.



a. Draw the position of the bus stops onto the map (with an X), if you follow these directions:
   - I am at A and travel north to Low Road. I turn right and walk to the bus stop just past the third street on the left.
   - I start at B and walk east to Plum Street. I turn right and then right again into Apple Street. The bus stop is opposite the primary school.

b. Use the map given and follow these directions to find your destination.
   - Peter arrives at the station from the city. He walks down past the shop to Right Road and turns left. He crosses the railway line and takes the first road right. He turns left at the third street and arrives at _____.
   - Mary is travelling east along Right Road. She has passed Plum Street on her right and is at the next intersection, which is the intersection of _____ and _____.

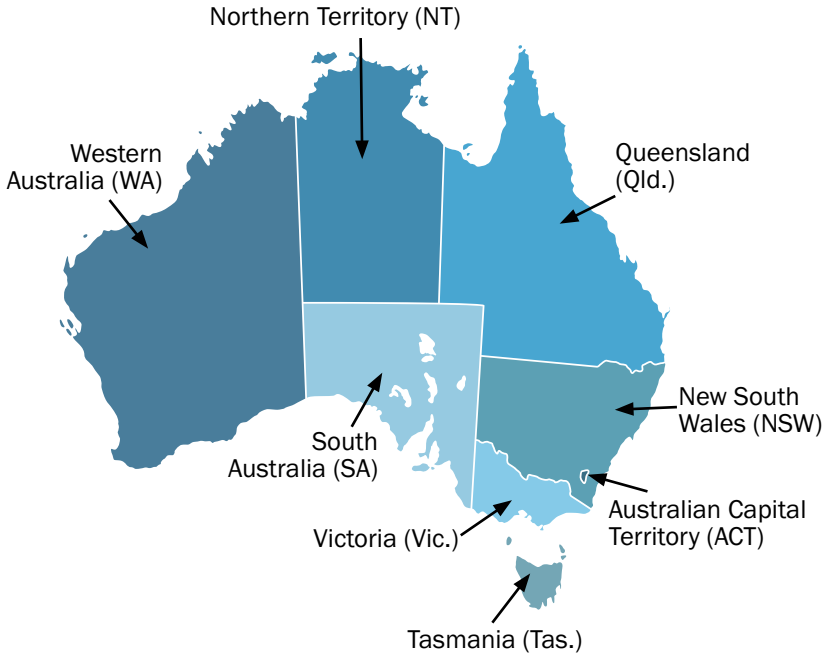
Click to complete

Answers

Answers to activities

Activity 1

Answer to Question 1



Answer to Question 2

a. Northern Territory

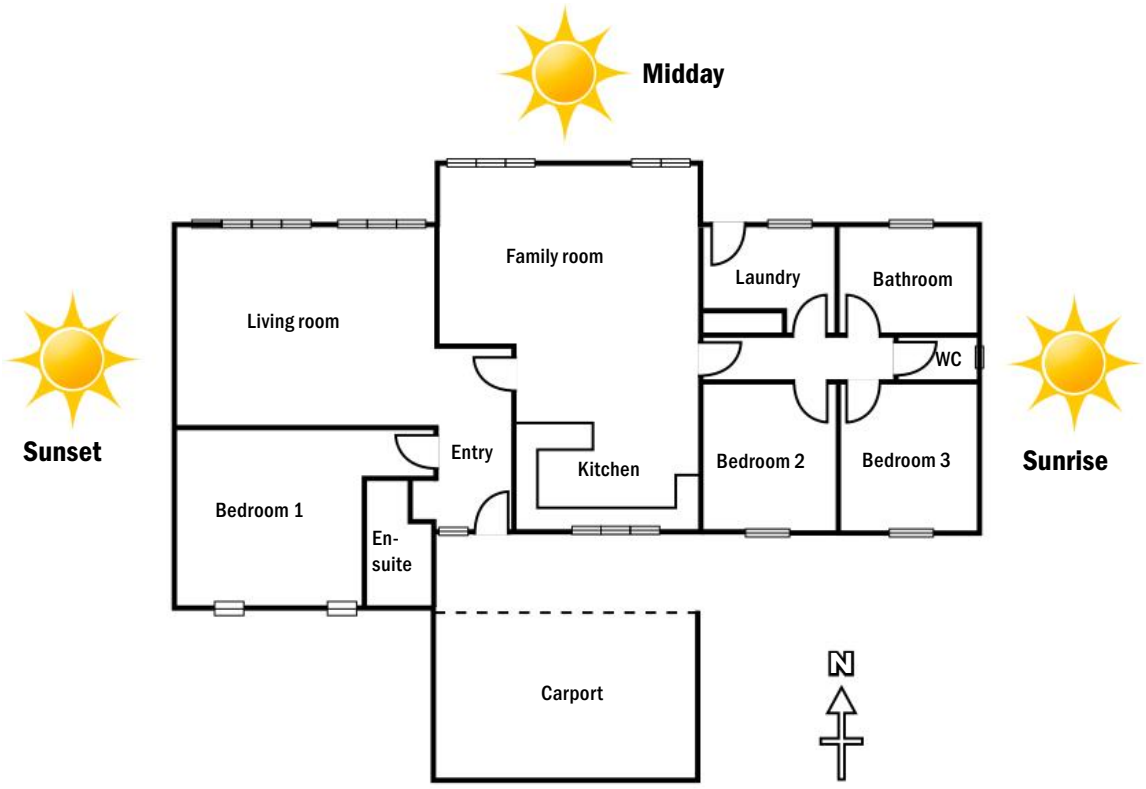
b. Tasmania

c. Northern Territory and South Australia

d. Northern Territory and South Australia

Activity 2

Answer to Question 1



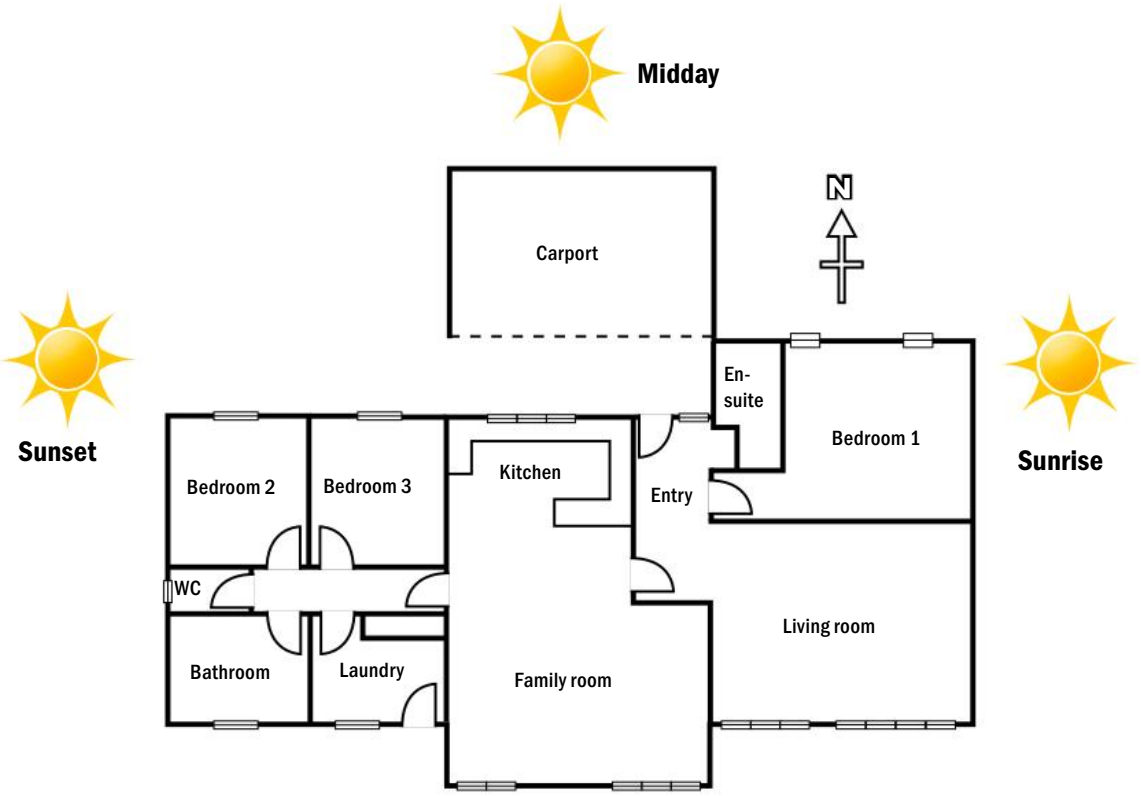
Answer to Question 2

Living room and bedroom 1

Answer to Question 3

The living room and family room

Answer to Question 4



Answer to Question 5

Bedroom 3, the WC and bathroom

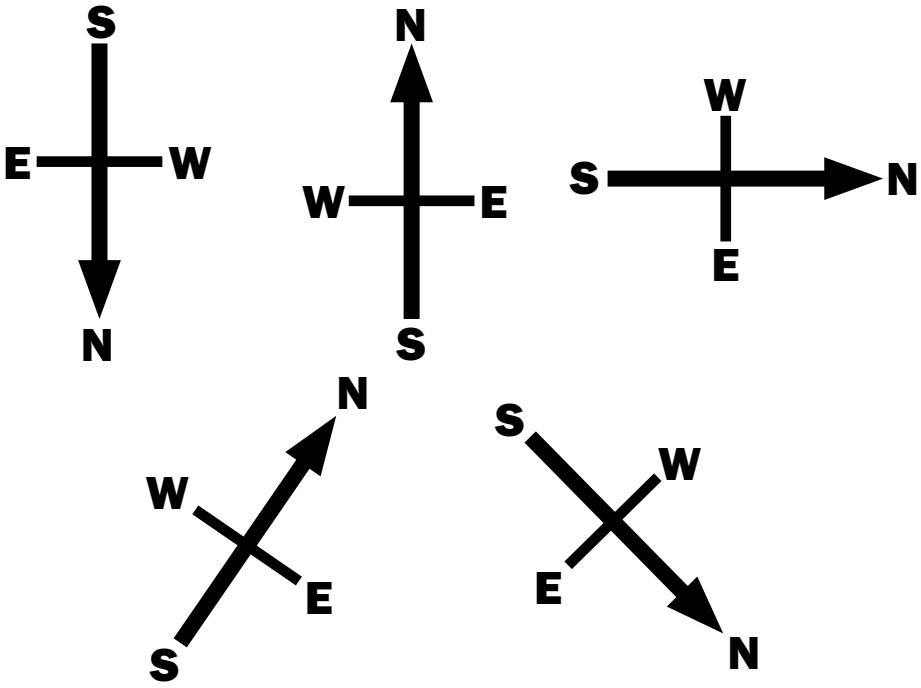
Answer to Question 6

The carport and bedroom 2

Activity 3

1. Start at point A.
2. Travel one block east, then one block south.
3. Travel one block east, then two blocks south.
4. You have reached point B.

Activity 4



Activity 5

Answers will vary greatly depending on the location.

Activity 6

Answers will vary greatly depending on individual addresses.

Activity 7

Answers will vary greatly according to individual addresses.

Activity 8

Answers will vary greatly. Here is an example answer.

Place in the world (north/south): South

Country: Australia

Part of Australia (north/south/east/west): South

State or territory of Australia: Victoria

Suburb or town (including postcode): Ormond 3204

Street number and name: 7 Harold Street

Activity 9

	A	B	C	D	E	F
1	X					
2						
3					N	
4			Z	N		N
5					N	
6				Y		

Activity 10

Answers will vary. Here is an example answer.

The scale went from 200 m to 500 m as it zoomed out.

Activity 11

Answer to Question 1

108 km

Answer to Question 2

99 km

Answer to Question 3

207 km

Activity 12

Answer to Question 1

26.9 hours

Answer to Question 2

16.63 hours

Answer to Question 3

20.21 hours

Activity 13

Answer to Question 1

45 minutes

Answer to Question 2

7.5 minutes

Answer to Question 3

4 km

Answer to Question 4

8 km

Activity 14

Answer to Question 1

E6

Answer to Question 2

D6

Answer to Question 3

A6

Answer to Question 4

D1

Answer to Question 5

E1

Answer to Question 6

C6

Answer to Question 7

B5

Activity 15

Answers will vary greatly depending on the location.

Answers to Check your learning

Answer to Question 1

Travel east from A for 2 km and then turn south and travel for 1 km.

Then travel east again for 1.5 km, turn north and travel for 1 km.

Answer to Question 2

a. Brisbane
b. Darwin

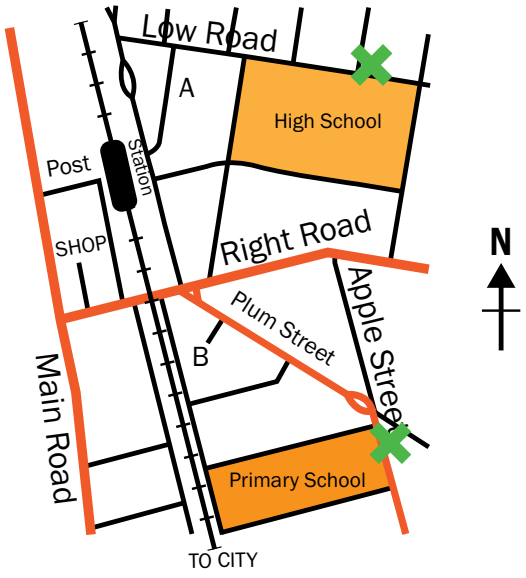
Answer to Question 3

a. South
b. West
c. North
d. East

Answer to Question 4

a. Veale Gardens
b. Whitmore Square
c. The University of Adelaide
d. River Torrens
e. Adelaide Airport

Answer to Question 5



a. X shows the bus stops.
b. The Primary School; Right Road and Apple Street

