

Mathematics Level 7

Chapter 3 — Skills: geographical inquiry

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Building questions for a geographical inquiry

Geography 4 · Level 4 · Chapter 3 — Skills: geographical inquiry · Section 3A. Teaching order: 10th of 15, after 2E and before 3B (TOC §3, D5).

Owens: VC2HG4S01 (Victorian Curriculum 2.0, Geography, Levels 3–4, Geographical Skills strand).

Elaborations drawn on: VC2HG4S01 .E01, .E02, .E04, .E05. .E03 is excluded — see the Teacher note.

Linked bank: 6 MCQs keyed to VC2HG4S01 — a digital-layer asset, not printed in this book (TOC D8).

Student-facing text runs from “What we are learning” to “Fully-worked answers”. The front matter above and the Teacher note at the end are for the teacher.

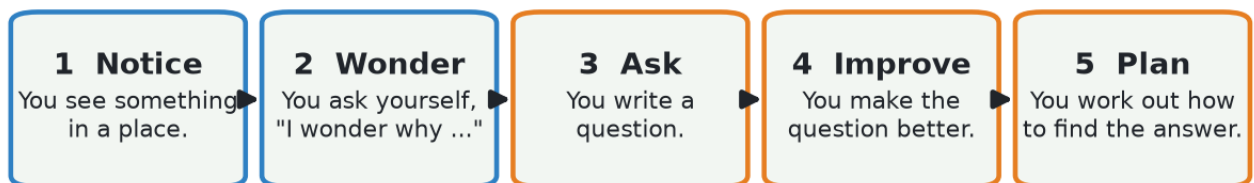
What we are learning

People who study places ask questions. Then they find the answers. This section teaches the asking.

An **inquiry** is a search to find something out. A **geographical question** is a question about places, people and the environment.

The inquiry path

From noticing something to a question that guides you



Geographers follow this path when they start an inquiry.

Steps 3 and 4 are what you learn in this section. Steps 1 and 2 come from looking at places. Step 5 leads into Section 3B.

The inquiry path: five steps joined by arrows, 1 Notice, 2 Wonder, 3 Ask, 4 Improve, 5 Plan.

The good-question checks.

Is it a good geographical question?

Run your question through all four checks

1

It is about places, people and the environment.

2

It starts with Where, Why, How or What.

3

You cannot answer it with only yes or no.

4

You can find the answer — by looking at a map or a photo, going to look, counting, asking people or reading.

If your question passes all four checks, it can guide an inquiry.

Four checks for a good geographical question, each in a box with a number in a green circle.

Open and closed questions. A **closed** question can be answered with only yes or no, and it stops the inquiry. An **open** question cannot, and it keeps the inquiry going.

Step up to a better question

One wonder, and the questions it grew into

The wonder

"I wonder why the bins near the canteen are always full at lunch time."

A closed question

"Is there a lot of rubbish at our school?"

X You can answer it with only yes or no.

An open, geographical question

"Which bins at our school fill up the most, and why are they in those places?"

✓ You can find the answer by going to look and counting.

The open question passes the good-question checks. It can guide an inquiry at your school.

Three steps from a wonder about full bins, to a closed question, to an open geographical question about which bins fill up most and why.

Where do geographical questions come from? Four good places to look:

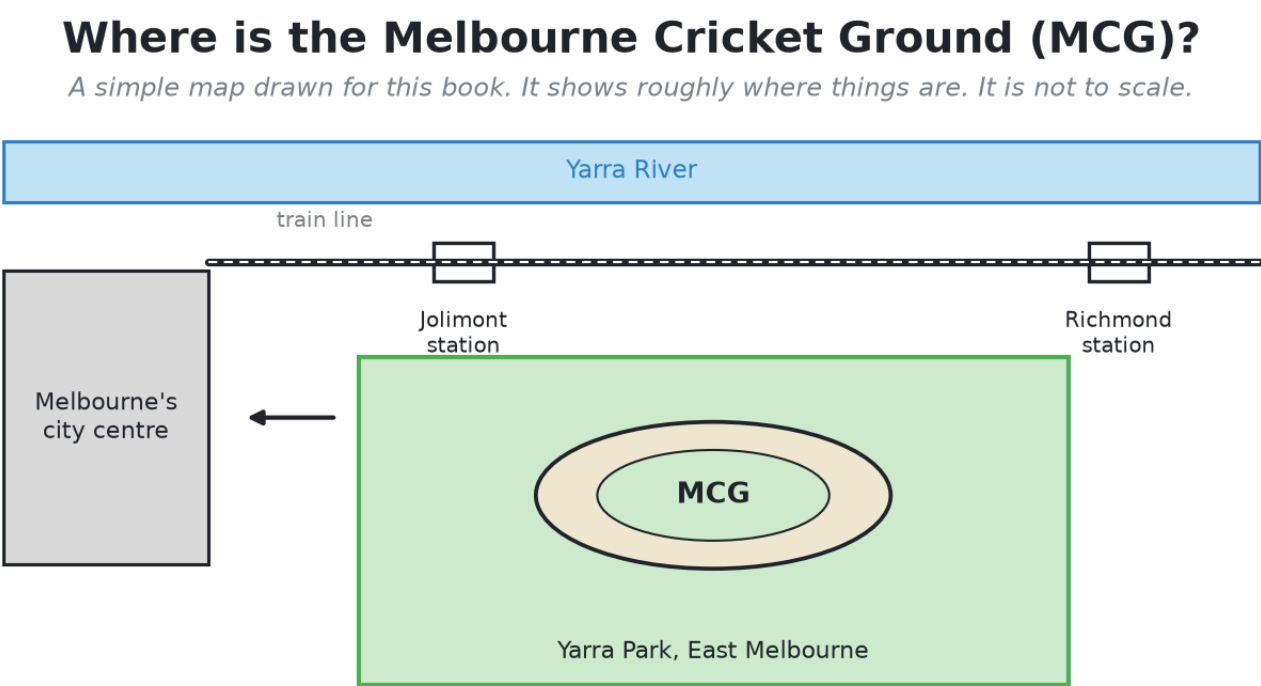
1. **Your local environment** — the parks, creeks, trees and weather of your place.
2. **How people depend on the environment.** To **depend on** something means to need it and get it from there. People depend on water, trees, soil and sunshine.
3. **Why things are where they are.** Why the shops sit on the main road. Why the school is near the homes.
4. **How places are the same and different.** A **continent** is one of the great areas of land on Earth, such as Australia, Africa or South America.

Before you finish, plan. A good question comes with a plan for finding the answer: look at a map, look at photos, go and look, count things, ask people, or read. Doing those is the work of Sections 3B and 3C.

Worked examples

Example 1 — why is a big sports ground where it is?

Look at the simple map.



The MCG is a very big sports ground. It sits in a park near the city centre, with two train stations close by.

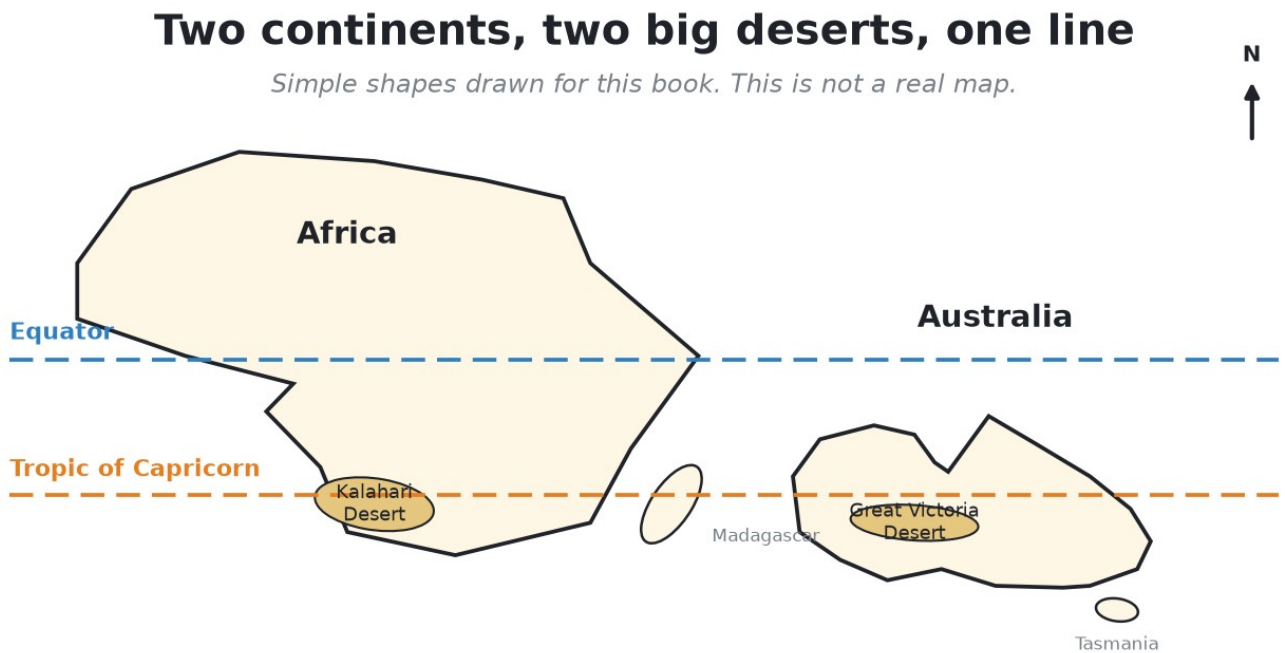
A simple map: the MCG oval inside Yarra Park, East Melbourne, with the Yarra River, a train line, and Jolimont and Richmond stations near the city centre.

Facts, real and checkable: the Melbourne Cricket Ground (the MCG) is in Yarra Park, East Melbourne. The train stations close by are Jolimont and Richmond. (Source: Wikipedia, “Melbourne Cricket Ground”, retrieved 25 August 2026.)

Step	What we did
1. Notice and wonder	We looked at the map and thought, “I wonder why this huge sports ground is right here.”
2. First question	“Is the MCG big?” Check 3 fails — yes or no closes it.
3. Better question	“Why is the MCG in Yarra Park, close to two train stations and near the city centre?”
4. The checks	About a place ✓ · starts with Why ✓ · not yes-or-no ✓ · we can find the answer ✓
5. Plan	Look at a map of Melbourne’s train lines. Go and look. Count the people walking in from Jolimont on a match day. Ask people.

Example 2 — a question about two continents

Look at the simple shapes and the table of facts.



The Equator crosses Africa but not Australia. The Tropic of Capricorn crosses both continents — and both have big deserts near it.

Simple shapes of Africa and Australia on one map, with the Equator and the Tropic of Capricorn as dashed lines, and the Kalahari Desert and the Great Victoria Desert marked on the Tropic of Capricorn.

Australia and Africa — what do we know?

Real facts, to help you ask comparing questions

Look at ...	Australia	Africa
How big is it?	about 7.7 million km ²	about 30.4 million km ² (about 4 times as big)
Its biggest desert	the Great Victoria Desert, in Western Australia and South Australia	the Kalahari Desert, about 900,000 km ² , in Botswana, Namibia and South Africa
Which lines cross it on a world map?	the Tropic of Capricorn	the Equator and the Tropic of Capricorn
Oceans around it	Pacific and Indian Oceans	Atlantic and Indian Oceans

Sources: Wikipedia — “Australia”, “Africa”, “Great Victoria Desert”, “Kalahari Desert”,
“Tropic of Capricorn” (all retrieved 25 August 2026).

Pick one row. What question could you ask about how Australia and Africa are the same, or different?

A table comparing Australia and Africa: how big each is, its biggest desert, the lines that cross it on a world map, and the oceans around it.

Facts, real and checkable: Africa is about 4 times as big as Australia (see the table in the figure). The Kalahari Desert, about 900,000 square kilometres, covers much of Botswana and parts of Namibia and South Africa. The Great Victoria Desert, the biggest in Australia, lies in Western Australia and South Australia. The **Equator** is an imaginary line drawn around the middle of the Earth. The **Tropic of Capricorn** is an imaginary line like it, south of the Equator. The Tropic of Capricorn crosses both continents. The Equator crosses Africa, but not Australia. (Sources: Wikipedia, “Australia”, “Africa”, “Kalahari Desert”, “Great Victoria Desert” and “Tropic of Capricorn”, all retrieved 25 August 2026.)

- **Wonder:** “Both continents have a big desert on the same line. That is odd!”
- **Question:** “Why do Australia and Africa both have big deserts near the Tropic of Capricorn?”
- **The checks:** about places and the environment ✓ · starts with Why ✓ · not yes-or-no ✓ · we can find the answer — put world maps side by side, read, and ask ✓
- **Plan:** finding the answer is the job of Sections 3B and 3C. Here we only ask well.

Practice questions

Practice with help

Q1. Sort the questions. Put a tick next to each question that passes all four checks. Put a cross next to each one that fails, and say which check it fails.

- Where does our town’s drinking water come from?
- Is maths fun?
- Why do the shops near the train station have a big car park?
- What did you have for lunch today?
- How does the park near the river change from winter to summer?
- Can I borrow your pencil?

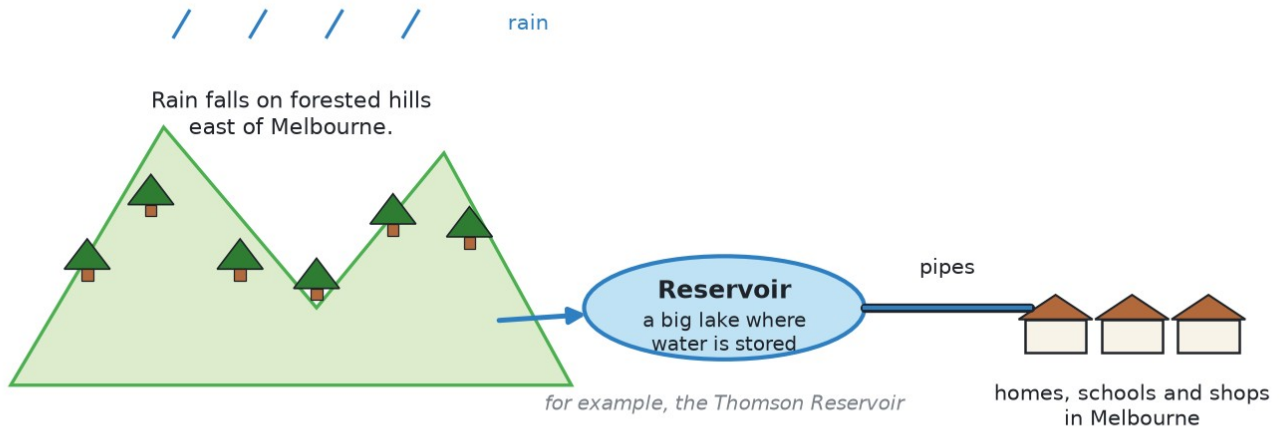
Q2. Open up a closed question. “Is the MCG close to a train station?” is closed. Rewrite it as an open question that starts with Why or How.

Q3. Your local environment. Think of the streets, parks and buildings near your school. Write one question starting with Where and one starting with Why.

Q4. Depending on the environment. Look at the model diagram. (A **reservoir** is a big lake where water is stored.)

Where does Melbourne's drinking water come from?

A model diagram of the journey of water



People in Melbourne depend on this water for drinking, cooking and washing. The Thomson Reservoir is about 130 km east of Melbourne.

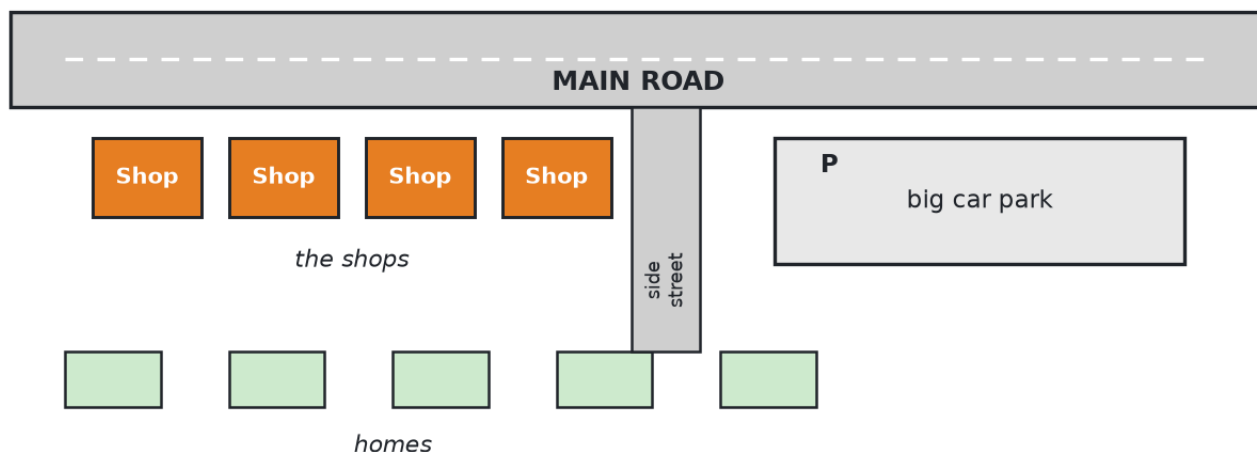
A model diagram: rain falls on forested hills east of Melbourne, runs into a reservoir such as the Thomson Reservoir, and pipes carry the water to homes, schools and shops.

- Finish this question in your own words: “How do the people of Melbourne depend on the forested hills for ...?”
- Write one question about how people in your place depend on water, trees, soil or sunshine.

Q5. Why is it there? Look at the model street. Write two questions about why the shops are where they are. One must start with Why and one with Where.

A model place — not a real town

A plan view: you are looking down from above



Drawn for this book. Think of a real shopping centre you know. Why is it on a main road, with a big car park next to it?

A plan view of a model street, not a real town: shops along a main road, a big car park, a side street, and homes.

Q6. Same and different. Use the Australia-and-Africa table from Example 2. Write one question about how the two continents are the same, and one about how they are different.

Practice on your own

Q7. Think of your school grounds. Write three geographical questions about them: one starting with Where, one with Why and one with How.

Q8. “Is Africa hot?” fails at least one check. Say which one, then write a better question about Africa.

Q9. Pick a real place you know — a sports ground, a park, a shop or a school. Write a question about why it is where it is, and plan two ways to find the answer.

Q10. Here is a fact about another continent: the Amazon rainforest is in South America; it covers about 5,500,000 square kilometres near the Equator (Source: Wikipedia, “Amazon rainforest”, retrieved 25 August 2026). Australia has no rainforest nearly that big. Write one question about this difference, and say what you would look at to answer it.

Inquiry task — notice, wonder, ask at your school

Fieldwork means going to a real place to look carefully and find out. This task is your first piece of fieldwork for this chapter.

1. With your teacher, walk around your school grounds. Stay in the area your teacher says is safe.
2. Notice three things about the place. Draw or write each one.
3. Turn each thing you noticed into a question.
4. Run your three questions through the four checks. Pick the best one.

5. Fill in the planner.

My inquiry planner

My geographical question: *Fill it in for the question you chose*

The place my question is about:

Good-question checks:

- | | |
|---|--|
| ☐ about places, people and the environment | ☐ starts with Where, Why, How or What |
| ☐ not a yes-or-no question | ☐ I can find the answer |

How will I find out? Tick what you will do:

- | | | |
|--|---|---|
| ☐ look at a map | ☐ look at photos | ☐ go and look carefully |
| ☐ count things | ☐ ask people | ☐ read a book or watch a video |

What will I do first?

Who will help me?

Work with your teacher and your class. Stay in the area your teacher says is safe.

A blank inquiry planner with spaces for my question, the place it is about, tick boxes for the four checks and the ways I will find out, and lines for what I will do first and who will help me.

Answers

Q1. (a) tick. (b) cross — fails check 1. (c) tick. (d) cross — fails check 1. (e) tick. (f) cross — fails check 1 and check 3.

Q2. One answer: “Why is the MCG close to two train stations?”

Q3. Answers will not all be the same. Check: about places, people and the environment; starts with Where or Why; open; we can find the answer.

Q4. (a) One answer: “How do the people of Melbourne depend on the forested hills for clean water?” (b) One answer: “How do the people of my town depend on the river?”

Q5. One answer: “Why are the shops on the main road?” and “Where is the big car park?” (Next to the shops, off the main road.)

Q6. One answer: same — “How are the Great Victoria Desert and the Kalahari Desert the same?”; different — “Why does the Equator cross Africa but not Australia?”

Q7. Answers will not all be the same. Check the four checks.

Q8. It fails check 3 — yes or no closes it. One better question: “How is the weather in the north of Africa different from the weather in the south of Africa?” (north compared with south, coast compared with desert).

Q9. Answers will not all be the same. Check the question passes the checks, and the plan names two ways such as a map, photos, going to look, counting, asking or reading.

Q10. One answer: “Why does South America have a huge rainforest near the Equator when Australia does not?” Plan: look at a world map with the Equator drawn on it, look at a map of the world’s rainforests and deserts, and read.

Inquiry task. Answers will not all be the same. Check: three things noticed, three questions, the best one passes all four checks, and the planner is filled in with at least one way to find out.

Fully-worked answers

Q1. (a) About a place ✓, Where ✓, open ✓, we can find the answer ✓ → tick. (b) About a feeling, not a place → fails check 1. (c) About a place ✓, Why ✓, open ✓, we can find the answer by going to look ✓ → tick. (d) About your lunch, not a place → fails check 1. (e) About a place ✓, How ✓, open ✓, we can find the answer by watching across the seasons ✓ → tick. (f) Not about a place, and yes-or-no → fails checks 1 and 3.

Q2. Start with Why or How and keep it open: “Why is the MCG close to two train stations?” Now the answer is not one word — it is a search.

Q3. Build your two questions from things you can point at near your school: a creek, a park, a shop, a crossing. Then run each through the four checks.

Q4. (a) The open end is what the hills give: clean water, stored water, shade, wood. (b) Name the thing your place depends on first — water, trees, soil or sunshine — then ask How.

Q5. A Why question asks for a reason: “Why are the shops on the main road?” (so many people can reach them). A Where question asks for a spot: “Where is the big car park?” (next to the shops, off the main road).

Q6. For same, pick one row of the table both continents share: both have a big desert on the Tropic of Capricorn. For different, pick a row where they differ: size, or the Equator crossing only Africa.

Q7. One of each starter. If a question can be answered with yes or no, change the starter to Why or How.

Q8. “Is Africa hot?” is closed, so it fails check 3. Open it and point it at places: the north and the south, the coast and the desert.

Q9. First name the place. Then ask Why it is there. Then plan: two of look at a map, look at photos, go and look, count, ask people, read.

Q10. The difference is the rainforest's size and its home near the Equator. A good question links the two: "Why does South America have a huge rainforest near the Equator when Australia does not?" To answer it you would look at a world map with the Equator, a map of rainforests and deserts, and read.

Inquiry task. Notice → wonder → ask → improve → plan. The checks pick your best question, and the planner is your plan for 3B.

Teacher note

Curriculum map. This section owns VC2HG4S01 in full (TOC §3): the CD is delivered through the question-building sequence, not through a walk of the elaborations (D7). The verb step "ask → identify and develop" is the band's step up from the F-2 achievement standard (TOC §4), and it is scored in every task: identifying is scored in Q1 (sorting), Q3, Q7 (choosing starters) and the inquiry task; developing — taking a first question and making it better — is scored in Q2, Q8 and the ladder work of both examples, and is the explicit job of the inquiry task's step 4. E01 (inquiry questions about the local environment) → Example 1's map reading, Q3, Q7, inquiry task; E02 (questions about how people depend on the environment) → Q4 and the water model; E04 (why local activities and venues sit where they do — sports grounds, schools, childcare centres, shops) → Example 1 (the MCG as a sports ground), Q5, Q9; E05 (comparing Australia with South America or Africa — what is alike, what differs, why, and how we would find out) → Example 2, Q6, Q10. The section seeds 3B and 3C (every plan step names their work) and draws its content examples from 1A/1B (local environment, located activities) and 2A/2D (continents, comparing places), per the Chapter 3 notes.

E03 exclusion. VC2HG4S01 . E03 (questions prompted by the AIATSIS Map of Indigenous Australia) is not covered, per CONTENT_POLICY Rule 1: Aboriginal and Torres Strait Islander content is deliberately excluded from ClassBasics books because accuracy cannot be guaranteed. This is the §2A ACCEPTED exclusion recorded in TOC §2 D3 — a named decision, not a coverage gap: the CD is delivered in full through E01, E02, E04 and E05 in neutral contexts (D7 — elaborations are illustrations, not a syllabus).

Sources and data. Every real-world datum carries a source line with retrieval date (D9): the MCG's location and nearby stations (Wikipedia, "Melbourne Cricket Ground"); Thomson Reservoir as Melbourne's largest storage, about 130 km east of Melbourne, stated only in the figure caption (Wikipedia, "Thomson Dam (Victoria)"); continent areas, the two deserts, the Tropic of Capricorn's crossings and the Amazon rainforest's extent (Wikipedia, "Australia", "Africa", "Great Victoria Desert", "Kalahari Desert", "Tropic of Capricorn", "Amazon rainforest") — all retrieved 25 August 2026. All maps and scenes are original teaching sketches drawn from primitives and labelled as models or "not a real map" (SOURCE_USE Rule 3, D4); the model street and water model are model places, never presented as real survey results (D9).

Register. Sentences are short and concrete at the Yr4 ceiling (D2). There is no prior-knowledge box (D1); where the section leans on an idea from earlier in this book — continent (2A), equator (2A), desert and vegetation types (1D/2C), dependence on the environment (1A) — it re-states the idea in one sentence at first use rather than assuming it.

Materials and safety. Clipboard and pencils for the inquiry task; the walk stays inside the area the teacher sets as safe.

Gathering and recording information and data for an inquiry

Geography 4 · Chapter 3 · 3B

Owens: VC2HG4S02 (Geographical Skills — Geographical inquiry) **Draws on:** VC2HG4S02.E01 · VC2HG4S02.E02 · VC2HG4S02.E03 · VC2HG4S02.E04 · VC2HG4S02.E05 · VC2HG4S02.E07 (VC2HG4S02.E06 is not here — TOC §2A)

3A asked the questions. 3B goes and finds the answers. We **locate** information (find where it is), we **collect** it (gather it up), and we **record** it (write it down so we do not lose it). The finding-out uses places we met in Chapters 1 and 2: our own local area (→ 1B), natural, managed and constructed features (→ 2D), and climates and neighbouring countries (→ 2B and 2D). Then 3C shows what we collected in new ways and looks for patterns.

Teacher note. Read the pages together first. Every task can be started aloud: children say what they notice before they write. “Answers will be different” is often true here; the possible answers at the end show the shape of a good response, not the only one. The model sheets and the model map are made-up examples that show *how* to record — the fieldwork task at the end is done at your own real school and locality. Real data in this section carries a source line that says when we saw it.

What we are learning

Information, data and sources. Geographers find things out. A **geographer** is a person who studies places and environments. What we find out is **information**. When the information is facts and numbers we can write down, we call it **data**. And information and data always come from somewhere — the place they come from is called the **source**.

Where can we get information and data?

Family 1: GO and collect

This is fieldwork — we go to the place.

look and listen

count things (a tally)

take photos

ask people (a survey)

talk with one person
(an interview)

Family 2: FIND and use

These are sources someone made or took.

maps

photographs

satellite images

graphs and tables

books and safe websites

One question — many ways to answer it. Pick the source that fits.

A poster with two families of sources. Family 1, GO and collect, is fieldwork: look and listen, count things in a tally, take photos, ask people in a survey, and talk with one person in an interview. Family 2, FIND and use: maps, photographs, satellite images, graphs and tables, and books and safe websites. The caption says: one question, many ways to answer it — pick the source that fits.

Two families of sources. With the first family we go to the place ourselves: we walk, look, count, ask and take photos. Going to a place to look, count, ask and record for ourselves is called **fieldwork**. With the second family, someone made or took the source before us: a map, a photograph, a satellite image, a graph, a table, a book.

Three good ways to collect. When we brainstorm, we think of as many ways as we can, fast, and write them all down. Here are three ways a class brainstormed for collecting information (VC2HG4S02 .E01):

Three good ways to collect information

SURVEY

Ask the SAME question to MANY people.

Example

"Which park do you visit most?"

INTERVIEW

Ask ONE person questions, and listen.

Example

"Why do people come to this shop?"

TALLY

COUNT things as you see them. Each one gets a mark.

Example

 = 5 bins

Say your question first. Then pick the way that fits it best.

Three cards. A survey asks the same question to many people, example: which park do you visit most? An interview asks one person questions and listens, example: why do people come to this shop? A tally counts things as you see them — each one gets a mark, and a crossed group of five marks means five bins.

- A **survey** asks the *same* question to *many* people.
- An **interview** asks *one* person questions, and listens to the answers.
- A **tally** counts things as we see them — one mark for each thing, and a cross over the fifth mark makes a group of five.

A survey sheet keeps the questions the same for everyone. This is a model sheet — use it to make your own (VC2HG4S02 .E03):

Our park — a survey sheet (model)

MODEL — use it to make your own

We want to know how people use the park near our school.

Ask each person the same three questions.

1. Do you visit this park?

- ☒ Yes
☐ No

2. What do you do here?

- ☒ Play
☒ Walk
☐ Sport
☐ Sit and talk

3. What do you like best about it?

- ☐ The trees
☐ The seats
☒ The open grass
☐ Something else: _____

Tick one box for each answer as you listen.

A model survey sheet about the park near our school, with three questions and tick boxes: Do you visit this park? What do you do here? What do you like best about it? The header says MODEL — use it to make your own, and the caption says: tick one box for each answer as you listen.

Recording — write it down the way geographers do. Collected information is no use if we lose it, so we record it: in a tally table, on a survey sheet, on a fieldwork sheet, or on a sketch map.

Recording a count with a tally table

Class example — this shows how to record, not a real count.

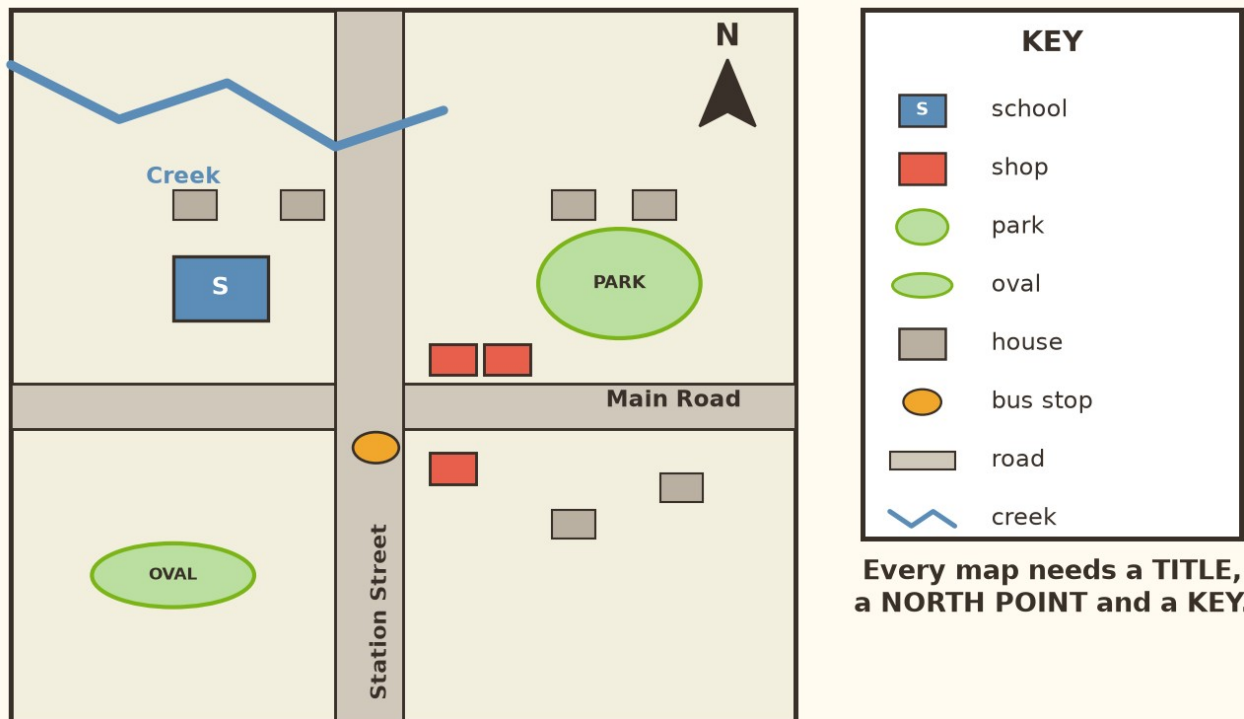
What we counted	Tally marks	Total
tree		6
seat		3
tap		2
bin		4
garden bed		5

One mark for each thing you see. Cross the fifth mark to make a group.

A filled-in tally table, labelled as a class example that shows how to record, not a real count. It counts, on a walk around a school ground: tree 6, seat 3, tap 2, bin 4, garden bed 5, with tally marks and a total for each.

A sketch map records *where* things are. It uses a small picture called a **symbol** for each kind of thing, a **key** that says what each symbol means, a **title** that says what the map is about, and a **north point** — a mark that shows which way is north.

MODEL MAP — Activities near a school (not a real place)



A model map of activities near a school, clearly labelled not a real place. It has a title box, a north point, a creek, two roads called Main Road and Station Street, a school, three shops near the road corner, a park, an oval, a bus stop and some houses. The key shows a symbol for each: school, shop, park, oval, house, bus stop, road, creek. The caption says: every map needs a title, a north point and a key.

We can also record on a photograph or a sketch by adding little labels that say what we see. Adding labels like that is called **annotating**.

My fieldwork record sheet

Date: _____ Place: _____					
My question: _____					
How I collected: tally survey interview photos					
What I saw:	What I counted:				
_____	<table border="1"><tr><td>what</td><td>tally</td></tr><tr><td>_____</td><td>_____</td></tr></table>	what	tally	_____	_____
what	tally				
_____	_____				

Who I asked, and what they said:					

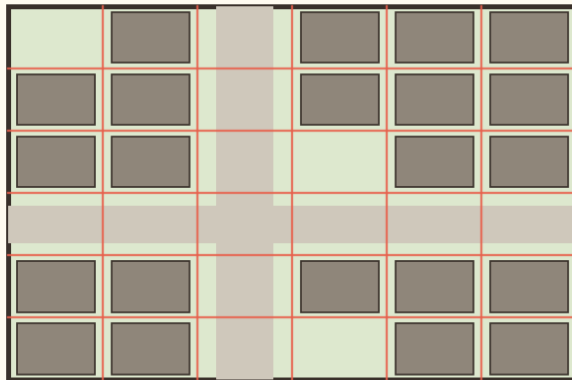
My sketch (add a north point!):	N ▲				

A blank fieldwork record sheet to copy: date, place, my question, how I collected (tally, survey, interview, photos), lines for what I saw, a small what-and-tally table for what I counted, lines for who I asked and what they said, and a sketch box with a north point to draw.

From up high. A **satellite image** is a picture of the ground taken from a satellite, far above the Earth. An **aerial photograph** is a photo taken from high in the air, like from a plane. Both let us see a whole place at once. One thing they show really well is **density** — how packed together things are. In this drawing (not a real photo), count the grid squares with building in them (VC2HG4S02.E05):

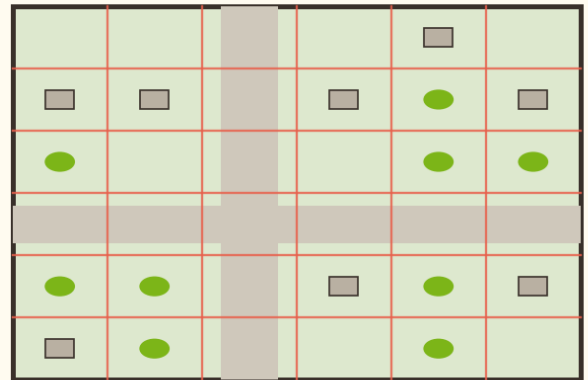
How packed is a city? Count the grid squares

These are DRAWINGS that show what a satellite view is like. They are not real photos.



Inner city

buildings packed close together



Outer suburb

houses spread out, more green space

Count the squares with building in them. More squares = more DENSE.

Two drawings that stand in for satellite views, labelled as drawings and not real photos. Each has a 6-by-6 grid. The inner city has big buildings packed close together in almost every square; the outer suburb has small houses spread out with more green space and trees. The caption says: count the squares with building in them — more squares means more dense.

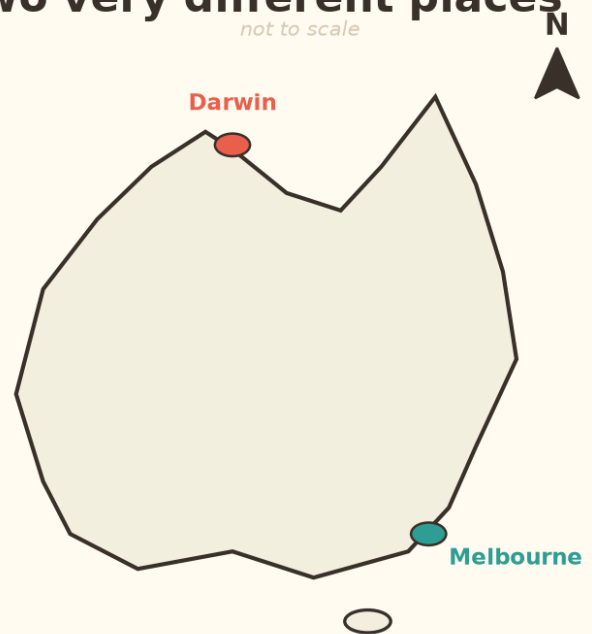
A real fact about density: about 5,200,000 people live in Greater Melbourne, spread across a very big area — in the middle the buildings are packed close, and at the edges they spread out (Australian Bureau of Statistics, seen 25 August 2026).

Two schools, two places. We can also collect information from people in other places. A class in Victoria can link with a class in a very different part of Australia — like Darwin, up in the tropical north — or in a neighbouring country, like Indonesia or Fiji. Each class fills in the same card and swaps, and then each class builds a map of the other place, with symbols, a title and a north point (VC2HG4S02.E07):

Class links: two schools, two very different places

not to scale

YOUR CLASS	PARTNER CLASS
Victoria, near Melbourne	Darwin, Northern Territory
Our place:	Our place:
This month's weather:	This month's weather:
Features we can see:	Features we can see:
What we do for fun:	What we do for fun:
Our sketch map: (draw it!)	Our sketch map: (draw it!)



Each class fills in the same card and swaps.

Your partner could also be a school in a neighbouring country — like Indonesia or Fiji.

Then you build a map of each place, with symbols, a title and a north point.

Two model class-link cards, one for your class in Victoria near Melbourne and one for a partner class in Darwin, Northern Territory. Each card has lines for: our place, this month's weather, features we can see, what we do for fun, and a box for our sketch map. Beside them is a small not-to-scale map of Australia with Darwin and Melbourne marked and a north point. The caption notes your partner could also be a school in a neighbouring country, like Indonesia or Fiji.

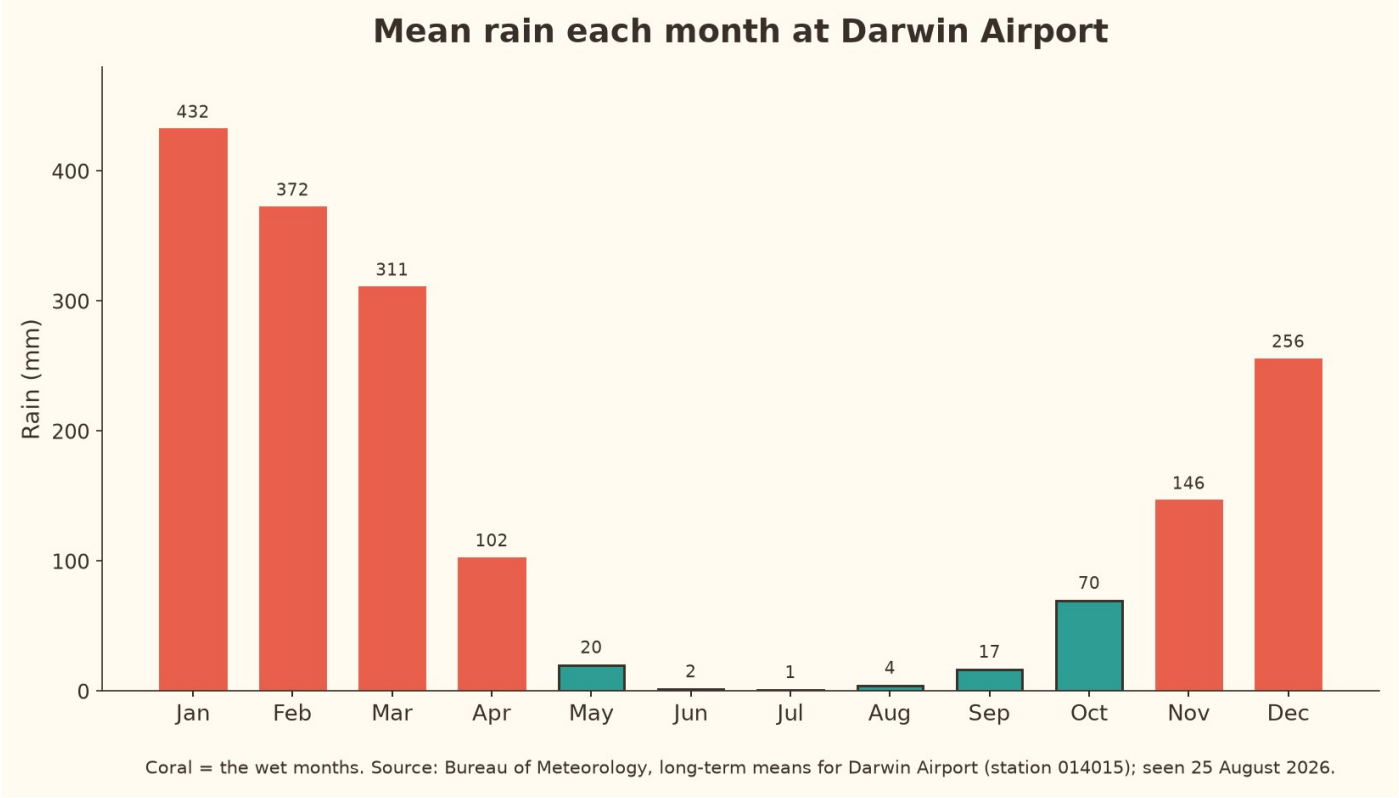
Pick the source that fits. One question can be answered by many sources, but some fit better than others. *How many bins are on our school ground?* — count them: a tally. *What do people like about the park?* — ask them: a survey. *Why is the shop on the corner?* — ask one person who knows: an interview. *Which way is the creek from our school?* — walk and look, or use a map. Say the question first; then pick the source that fits it best.

Worked examples

Example 1 — reading a graph and recording it in a table

(VC2HG4S02.E02)

A graph is a source too. This one shows real rain data for Darwin, in the tropical north of Australia. Watch the class collect from it and record it in a table.



A column graph of the mean rain each month at Darwin Airport, with the wet months from November to April in coral and the dry months in teal. The labels read, in millimetres: Jan 432, Feb 372, Mar 311, Apr 102, May 20, Jun 2, Jul 1, Aug 4, Sep 17, Oct 70, Nov 146, Dec 256. The source line reads: Bureau of Meteorology, long-term means for Darwin Airport, station 014015; seen 25 August 2026.

What we do	Why it works
We read the title: <i>Mean rain each month at Darwin Airport</i> .	The title tells us what the data is about.
We read the side: rain in millimetres. We read the bottom: the months.	The sides tell us what each number means.
We read each column and say its number aloud: Jan 432, Feb 372 ...	Reading aloud helps us check each number.
We record the numbers in a table of our own, month by month.	A table keeps the data safe and neat.
We write one thing we notice: <i>nearly all the rain falls from November to April; June, July and August are almost dry.</i>	Noticing is the first step towards 3C, where we look for patterns.

The class’s table:

Month	Jan	Feb	Mar	Apr	May	Jun
Rain (mm)	432	372	311	102	20	2

Month	Jul	Aug	Sep	Oct	Nov	Dec
Rain (mm)	1	4	17	70	146	256

(The numbers on the graph are the Bureau of Meteorology’s long-term rain means for Darwin Airport; seen 25 August 2026. Darwin’s wet-and-dry year is the tropical climate we met in 2B.)

Example 2 — collecting features at a real place (VC2HG4S02.E04)

A class looked at photographs and a map of St Kilda Beach, in Melbourne. They collected the **features** of the place — the things we can see there — and sorted them into three kinds: **natural** (made by nature, no people needed), **managed** (natural things people look after) and **constructed** (made by people).

Recording features at St Kilda Beach, Melbourne

One class looked at photos and a map of the beach, then sorted what they saw.

NATURAL made by nature, no people needed	MANAGED natural things people look after	CONSTRUCTED made by people
the sea (Port Phillip Bay) the sandy beach the sky and weather	the grass by the path the planted trees the beach plants	the walking path the seats and the pier the shops near the beach

One place can have all three kinds of feature at once.

Fact: a small group of little penguins lives on the rocks near the pier. People look after them.

(Parks Victoria, St Kilda breakwater little penguins; seen 25 August 2026.)

A three-column record table for St Kilda Beach, Melbourne. Natural: the sea (Port Phillip Bay), the sandy beach, the sky and weather. Managed: the grass by the path, the planted trees, the beach plants. Constructed: the walking path, the seats and the pier, the shops near the beach. A fact line adds: a small group of little penguins lives on the rocks near the pier, and people look after them (Parks Victoria, St Kilda breakwater little penguins; seen 25 August 2026).

What we do	Why it works
We look at the photo and the map and say everything we can see.	Collecting starts with noticing.
We sort what we see into natural, managed and constructed.	Sorting turns a pile of noticing into data.
We record each feature in the right column of the table.	A table records it so we can use it later.
We annotate the photo: a little label on the pier, the beach, the grass.	Labels say what each thing is, so we remember.
We pick one thing to check on a walk of our own.	Fieldwork checks what other sources told us.
One true extra: a small group of little penguins lives on the rocks near the pier at St Kilda, and people look after them (Parks Victoria; seen 25 August 2026). The penguins are natural; the rocks they nest on are managed.	

Practice tasks

With help

Q1. Match the question to the way (VC2HG4S02 .E01). Draw a line from each question to the best way to collect.

Question	Way to collect
a. How many seats are in the park?	1. A survey of many people.
b. What do people like best about the park?	2. An interview with the shopkeeper.
c. Why is the bakery on the corner?	3. A tally as we walk.
d. What is north of our school gate?	4. Walk, look, and use a map.

Q2. Sort the sources (VC2HG4S02 .E01). Put these eight sources into the two families from our poster: *go and collect* or *find and use*.

1. counting the trees on a walk
2. a map of your suburb
3. asking ten people the same question
4. a photo of the beach
5. a satellite image of your town
6. listening to one old resident talk
7. a graph of monthly rain
8. taking your own photos of the creek

Q3. Read the model map (VC2HG4S02 .E03 · VC2HG4S02 .E07). Use the model map in our sketch-map picture above. Remember it is a made-up place.

1. What is the title of the map?
2. What does the north point show?
3. How many shops does the map show?
4. What road runs just south of the school?
5. What is north of the school?
6. Where is the bus stop?

Q4. Sort the features (VC2HG4S02 .E04). Put each feature into natural, managed or constructed, like the class did at St Kilda.

the sea · the walking path · the planted trees · the sandy beach · the seats · the grass · the pier · the sky

Q5. Count the squares (VC2HG4S02 .E05). Use the two satellite-view drawings.

1. Count the squares with building in them in the inner city.
2. Count them in the outer suburb.
3. Which view is more dense? How can you tell from your counts?

Q6. Record from the graph. Use the Darwin rain graph from Example 1.

1. Record the four wettest months and their numbers in a table.
2. Which month is the driest?
3. Name the months that are almost dry (under 20 millimetres).

On your own

Q7. Your question, your way (VC2HG4S02 .E01 · VC2HG4S02 .E03). Think of one place near YOUR school. Write one question about it. Then choose: will you tally, survey, interview or take photos? Say how you will record what you collect.

Q8. Annotate a place (VC2HG4S02 .E03 · VC2HG4S02 .E04). Draw (or take) a picture of one place near your school. Annotate it: add one label for a natural feature, one for a managed feature and one for a constructed feature.

Q9. Class links (VC2HG4S02 .E07). Fill in the “your class” card in the class-links picture for YOUR place. Then draw a small map of your place with at least three symbols, a key, a title and a north point.

Q10. Show the vote (VC2HG4S02 .E02). Your class votes on one thing to do for your local area: plant a garden, run a clean-up day, or plant trees. Brainstorm two ways to record the vote. Pick the better one and say why it fits.

Fieldwork task — our local area

This is the doing part of 3B. The fieldwork itself is the task.

1. With your class, pick one question about the area around your school. (Example: *what activities are near our school?* — shops, sport, parks, bus stops.)
 2. Choose how you will collect: tally, survey, interview, photos.
 3. Go on the walk. Record everything on a record sheet like the one above.
 4. Take photos (or draw pictures) and annotate them.
 5. Back in class, draw a sketch map of your walk. Add symbols, a key, a title and a north point.
 6. Keep your record sheet and your map safe. In 3C you will show what you collected in new ways and look for patterns.
-

Possible answers

Answers will be different in every class. These show the shape of a good response.

Q1. a–3, b–1, c–2, d–4.

Q2. Go and collect: 1, 3, 6, 8. Find and use: 2, 4, 5, 7.

Q3. (1) *Activities near a school* (a model map). (2) Which way is north. (3) Three shops. (4) Main Road. (5) The creek (and some houses). (6) On Station Street, just south of Main Road.

Q4. Natural: the sea, the sandy beach, the sky. Managed: the planted trees, the grass. Constructed: the walking path, the seats, the pier.

Q5. Inner city: 22 squares with building (you may count 20–24). Outer suburb: 8. The inner city is more dense — more of its squares are packed with building.

Q6. (1) Jan 432, Feb 372, Mar 311, Dec 256 (mm). (2) July. (3) June, July, August (and May and September are close to dry).

Q7–Q10. Answers will be different. A good response names one clear question about a real place near the school (Q7), picks a way to collect that fits it, and records with a neat tally table, survey sheet or sketch. Q8 has three correct labels, one of each kind. Q9 has a filled card and a map with symbols, a key, a title and a north point. Q10 names two ways to show the vote (a column graph, a picture graph, a table) and picks one with a reason, like *a column graph shows the biggest number straight away*.

Fieldwork task. Look for: a clear question; a fitting way to collect; a record sheet filled in on the walk; annotated photos or drawings; and a sketch map with symbols, a key, a title and a north point, ready for 3C.

Next in Chapter 3: 3C takes everything we collected and shows it in new ways — maps, tables and graphs — and looks for patterns.

Showing and making sense of information and data

Curriculum link: VC2HG4S03 (Victorian Curriculum 2.0, Geography, Levels 3–4). *This section draws on codes VC2HG4S03.E01–VC2HG4S03.E05.*

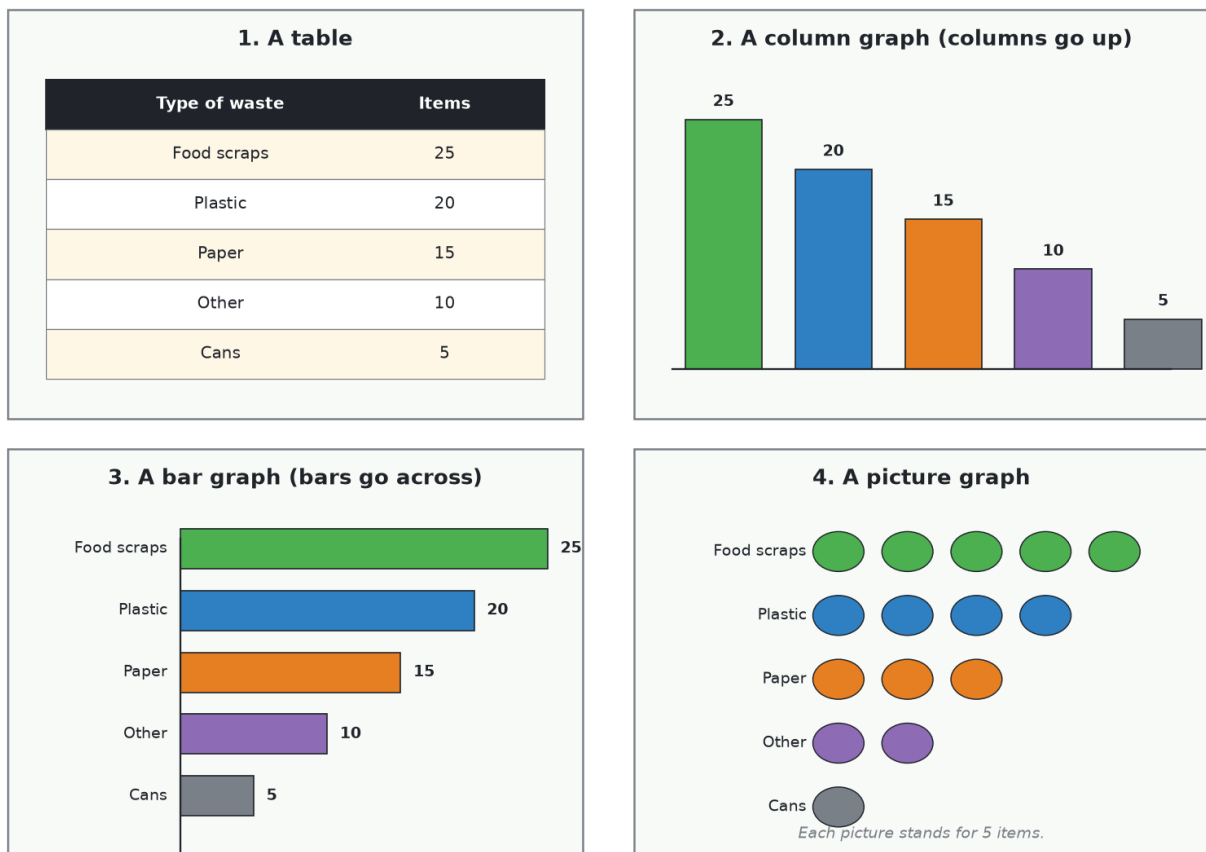
Theory

Geographers collect **data** — facts and numbers about places. Then they **represent** the data: they show it in a table, a map, a graph or a picture. Then they **analyse** it: they study it to find patterns and what it means.

The same data can be shown in many **formats**. Here is one set of data — a class tally of waste — shown four ways:

One set of data — four different formats

A class counted the waste in their bins. Here is the same tally shown four ways.

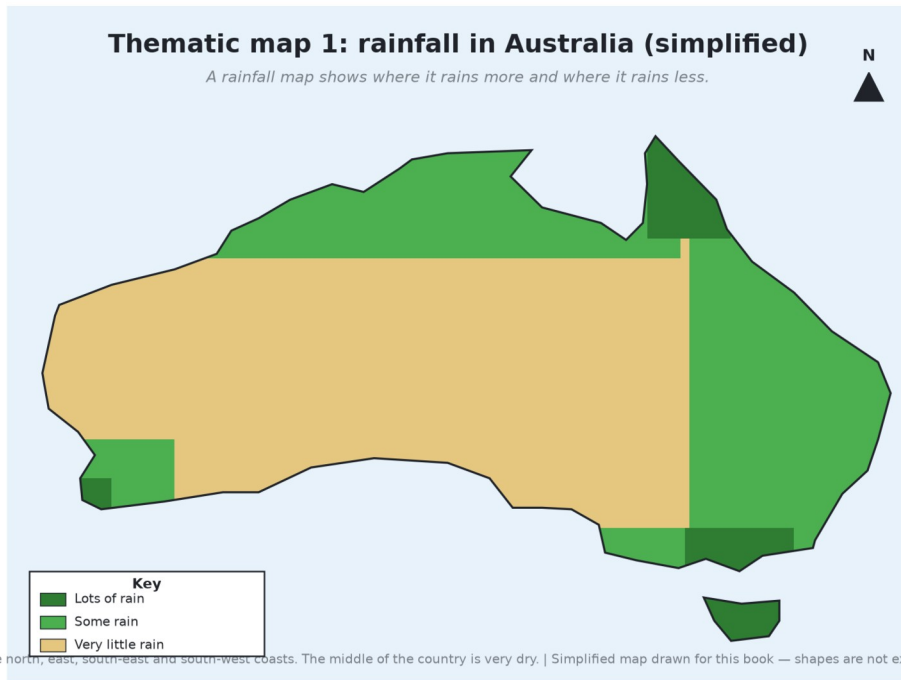


Example data — a made-up class tally for practising. Each format shows the same information: food scraps were the biggest part (25 items), cans the smallest (5 items).

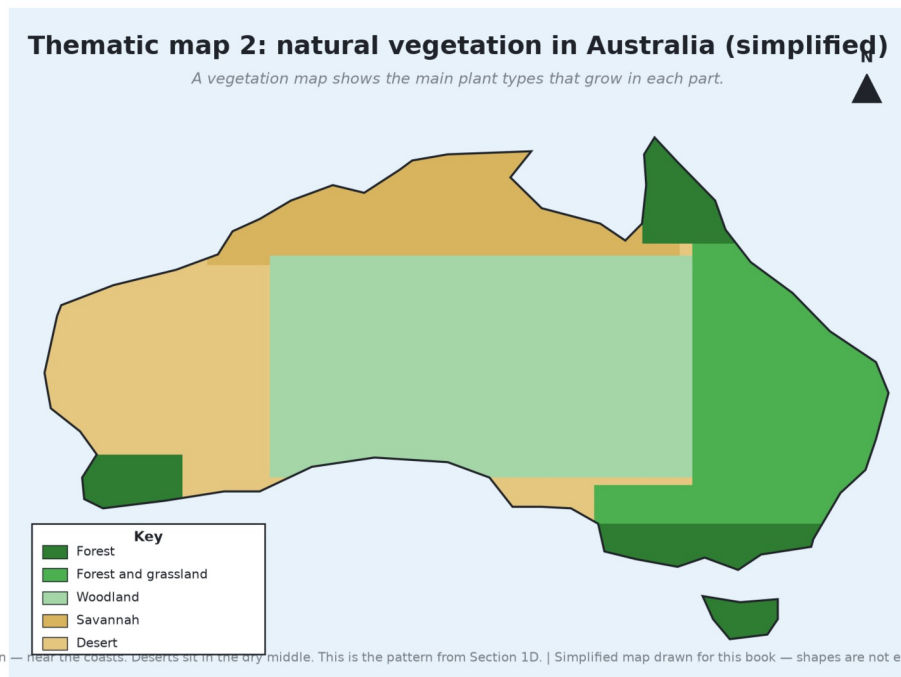
One waste tally shown four ways: a table, a column graph, a bar graph and a picture graph.

- The **table** keeps the exact numbers tidy.
- The **column graph** (columns go up) and the **bar graph** (bars go across) make it easy to see the biggest and smallest parts.
- The **picture graph** uses symbols. Each symbol stands for 5 items.
- A **line graph** is best when something changes over time, like week by week.

Thematic maps. A **thematic map** is a map about one topic. The key tells you what each colour means. Here are three thematic maps of Australia:



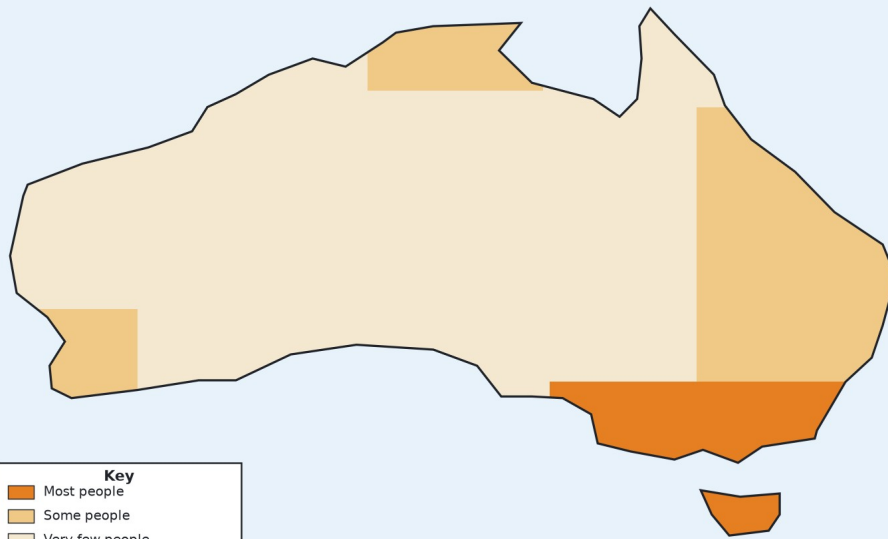
Simplified thematic map of Australia showing where there is lots of rain, some rain and very little rain.



Simplified thematic map of Australia showing forest, forest and grassland, woodland, savannah and desert.

Thematic map 3: where people live in Australia (simplified)

A population map shows where many people live and where few people live.



Most Australians live near the south-east coast and along the east coast. Very few people live in the dry middle. | Simplified map drawn for this book — shapes are not exact and the map is not for navigation.

Simplified thematic map of Australia showing where most people, some people and very few people live.

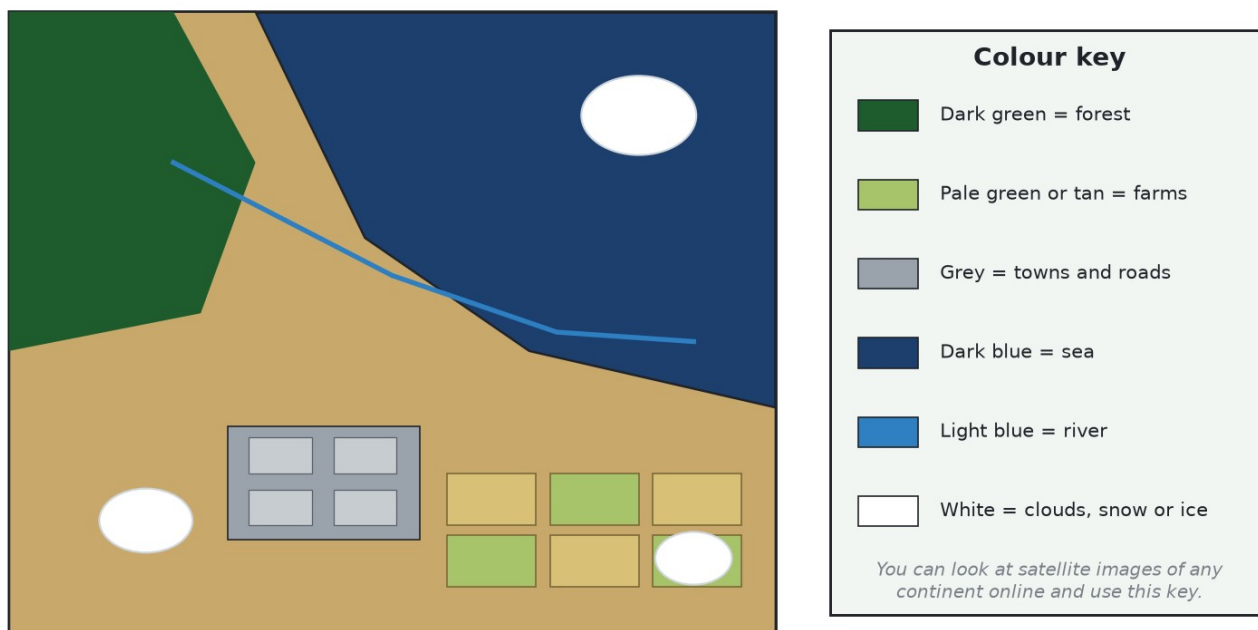
To read a thematic map: (1) read the key; (2) look for the pattern — where is the colour most and where is it least?

Climate graphs. A **climate graph** shows the weather of a place over a whole year. The columns show the rain each month in millimetres (mm). The two lines show the temperature in degrees Celsius (°C): the top line is the usual hottest temperature for each month, and the bottom line is the usual coldest temperature. You will read two climate graphs in Example 1.

Satellite images. A **satellite image** is a photo of the Earth taken from a satellite in space. Geographers use online satellite images to see what a continent looks like — forests, farms, cities and deserts — without travelling there. The colours are clues:

How to read a satellite image

Satellites take photos of Earth from space. In a true-colour image, each colour is a clue to what is on the ground.



A drawing of what a satellite image looks like (not a real photograph)

Geographers use online satellite images to see what the surface of a continent is like — forests, farms, cities and deserts — without travelling there.

A drawn example of a true-colour satellite image with a colour key for forest, farms, towns, sea, river and clouds.

Deserts on different continents. A desert is a place that gets very little rain or snow. Deserts can be sandy, stony or icy. Places with the same climate and the same kind of plants can be found on different continents:

Three kinds of desert — on different continents

A desert is a place that gets very little rain or snow. Deserts can be sandy, stony or icy.



Sources: Simpson Desert facts (retrieved 25 August 2026); Atacama Desert facts (retrieved 25 August 2026); Antarctic desert facts (retrieved 25 August 2026). Deserts with these surface types also occur in Africa — for example, the Namib Desert in Namibia has sand dunes more than 300 m high.

Three labelled sketches comparing a sandy desert in Australia, a stony desert in South America and an icy desert in Antarctica.

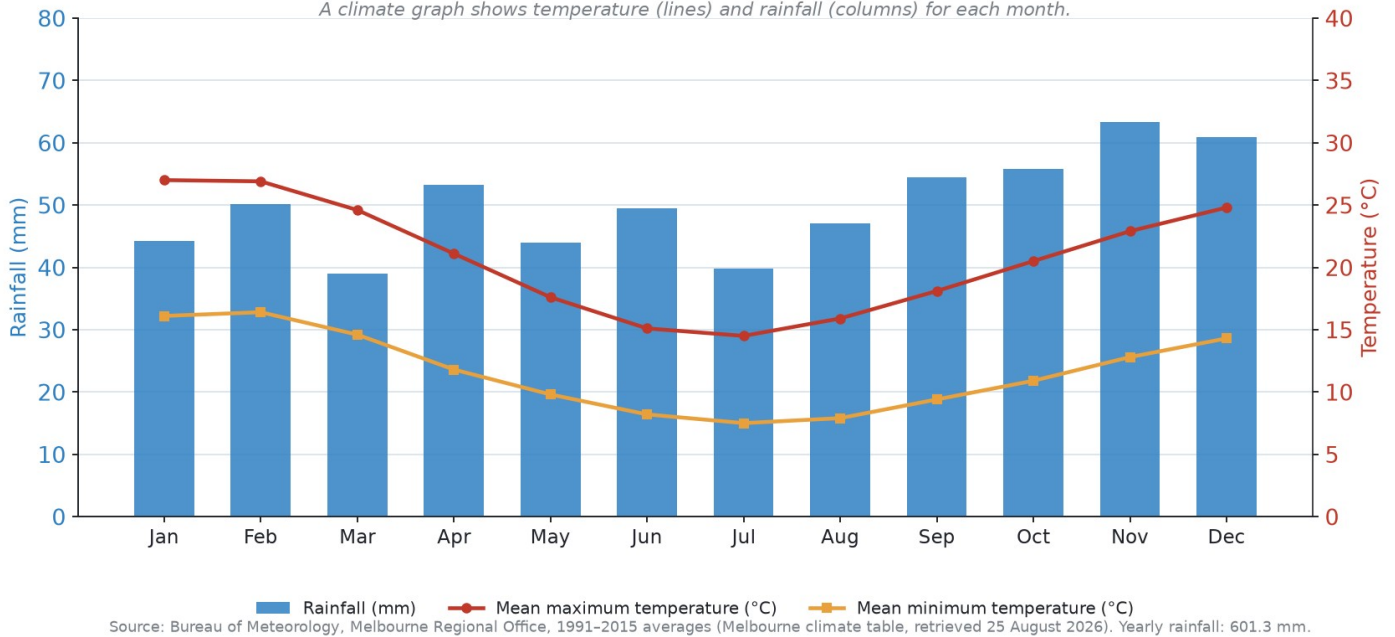
Worked examples

Example 1 — with help (links to VC2HG4S03.E01)

Read the climate graphs for Melbourne (Australia) and Denpasar (Indonesia, on the island of Bali). Denpasar is in a neighbouring country of Australia.

Climate graph: Melbourne, Victoria

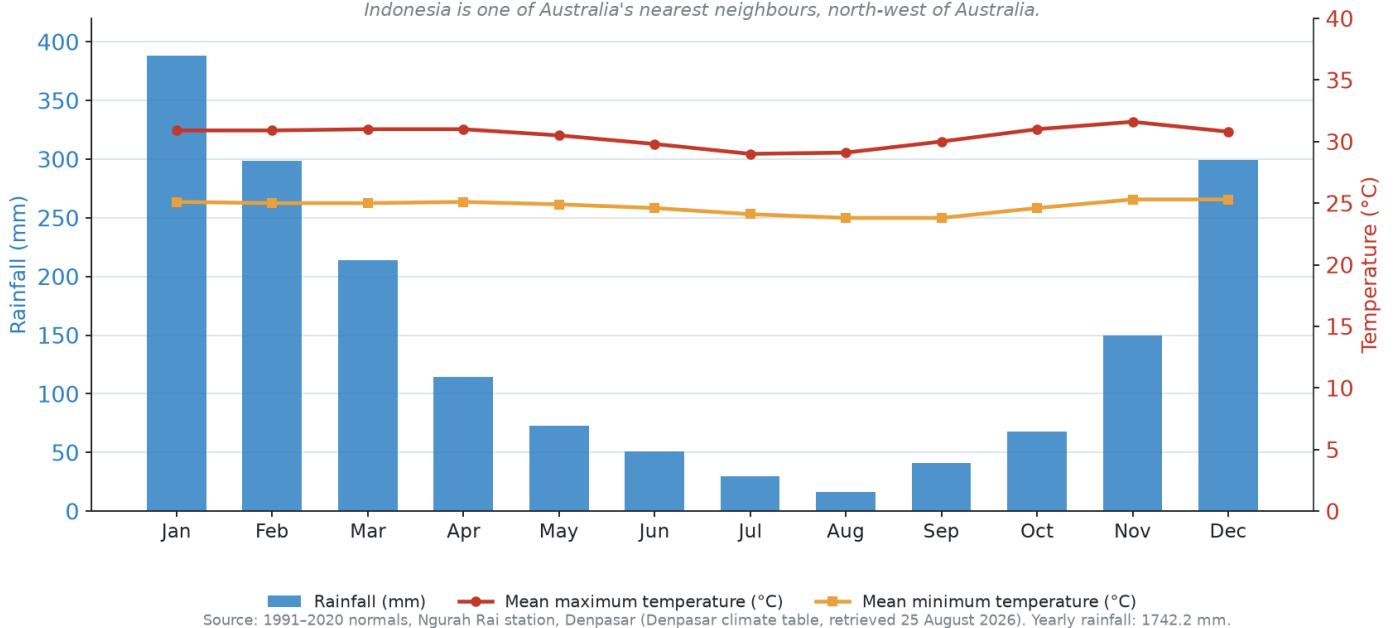
A climate graph shows temperature (lines) and rainfall (columns) for each month.



Climate graph for Melbourne: columns show monthly rainfall in millimetres and two lines show the usual hottest and coldest temperatures in degrees Celsius.

Climate graph: Denpasar, Bali, Indonesia

Indonesia is one of Australia's nearest neighbours, north-west of Australia.



Climate graph for Denpasar: columns show monthly rainfall in millimetres and two lines show the usual hottest and coldest temperatures in degrees Celsius.

Step	What we do	What we see
1	Read the rain columns for Melbourne.	Melbourne gets some rain every month. The wettest month is December (about 63 mm) and the driest is March (about 39 mm).
2	Read the temperature lines for Melbourne.	The hottest month is January (about 27 °C). The coldest month is July (about 14 °C at the hottest part of the day, and about 7 °C at the coldest).
3	Read the rain columns for Denpasar.	Denpasar has a wet time and a dry time. January is very wet (about 388

Step	What we do	What we see
4	Read the temperature lines for Denpasar.	mm). August is dry (about 16 mm). Denpasar is hot all year. Every month is about 29–32 °C at the hottest part of the day.
5	Compare the two places.	Denpasar is hotter than Melbourne and gets much more rain: about 1742 mm in a year, while Melbourne gets about 601 mm.

Findings: Melbourne has a hot summer and a cool, mild winter, with a little rain every month. Denpasar is hot all year and has a very wet time (December to March) and a dry time (June to September).

Example 2 — with help (links to VC2HG4S03.E02)

Put the rainfall map and the vegetation map of Australia side by side. Describe the pattern and suggest one explanation for it.

Step	What we do	What we see
1	Read the key of the rainfall map.	Lots of rain near the north, east, south-east and south-west coasts. Very little rain in the middle.
2	Read the key of the vegetation map.	Forest near those same coasts. Desert in the middle. Grassland means grass country; woodland is open country with scattered trees; savannah is tropical grassland with some trees.
3	Match the two maps.	The forest sits where there is lots of rain. The desert sits where there is very little rain.
4	Suggest an explanation.	Trees and plants need water. Where more rain falls, more plants can grow.
5	Compare with another part of the world.	The same kind of pattern is found in Africa: rainforest grows near the wet equator, and the Sahara Desert sits in a dry band to the north. So Australia and Africa are similar in this way — wet places grow forests, dry places are desert.

Practice questions

Practice with help

Q1. Use the picture graph of the class waste tally.

Picture graph: waste in our class bins (one day)

Each symbol stands for 5 items of waste.

Food scraps  = 25 items

Plastic  = 20 items

Paper  = 15 items

Other  = 10 items

Cans  = 5 items

Key:  = 5 items of waste

Example data — this is a made-up class tally for practising graph reading. Your class will collect its own data in the inquiry task. Total: 75 items.

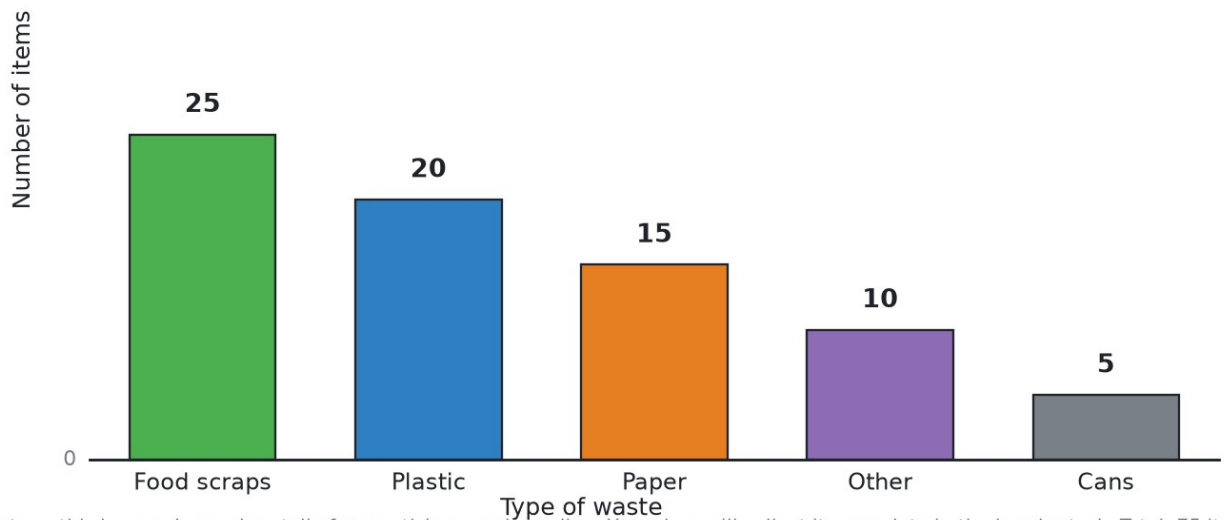
Picture graph of a class waste tally with one circle standing for five items.

- (a) How many symbols are in the Plastic row?
- (b) Each symbol stands for 5 items. How many plastic items is that?
- (c) Start your answer like this: *The biggest part of the waste was ... because ...*

Q2. Use the column graph of the same tally.

Column graph: waste in our class bins (one day)

Read up each column to find how many items of each type.



Example data — this is a made-up class tally for practising graph reading. Your class will collect its own data in the inquiry task. Total: 75 items.

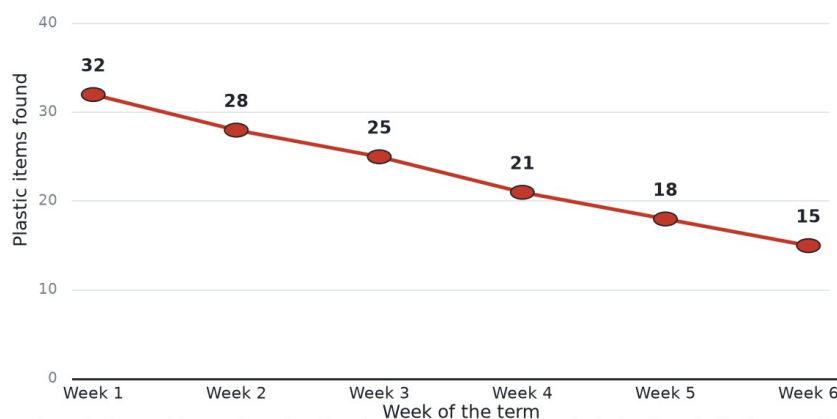
Column graph of the same class waste tally, with the number of items written above each column.

- (a) Read the number above the Paper column. How many paper items were there?
- (b) How many more food scraps than cans were there?
- (c) Put the five types in order from biggest to smallest.

Q3. Use the line graph of the school yard clean-up.

Line graph: plastic items found in our school yard clean-up

A line graph is good for showing how something changes week by week.



Example data — this is a made-up class tally for practising graph reading. Your class will collect its own data in the inquiry task. The line goes down each week — that is a downward trend.

Line graph showing plastic items found in school yard clean-ups over six weeks, with the line going down each week.

- (a) How many plastic items were found in Week 1? In Week 6?
- (b) Does the line go up or down?
- (c) Start your answer like this: *The trend is ... because the number gets ... each week.* (A **trend** is the way the data is going — up, down or about the same.)

Q4. Use the population map of Australia.

- (a) Which colour on the key means “Most people”?
- (b) Start your answer like this: *Most Australians live near the ... coast and along the ... coast.*
- (c) The middle of Australia is very dry (look back at the rainfall map). Suggest one reason why few people live there.

Q5. Use the satellite image colour key.

- (a) What does dark green mean in a true-colour satellite image?
- (b) What colour is the sea?
- (c) Your teacher will show you an online satellite image of a continent. Use the key to name two things you can find in it. Start like this: *I can see ... because the colour is ...*

Q6. Use the desert figure.

- (a) Fill in the continent for each desert: the Simpson Desert (sandy) is in ...; the Atacama Desert (stony) is in ...; the icy desert is on the continent of ...
- (b) The Namib Desert in Namibia (Africa) has sand dunes more than 300 m high. Which kind of desert is it — sandy, stony or icy?
- (c) Which of the three deserts in the figure gets snow instead of rain?

Practice on your own

Q7. Look again at the two climate graphs in Example 1. Write two findings that compare Melbourne and Denpasar: one about temperature and one about rain.

Q8. Thematic maps can show many topics — rainfall, vegetation and population, but also **language** (the main languages people speak in each part) and **religion** (the main religions of each part).

- (a) Choose one of the three thematic maps in this section. Describe its pattern in one sentence.
- (b) Suggest one explanation for the pattern you described.
- (c) In Australia’s neighbouring country Indonesia, most people are Muslim. In Australia, most people are Christian or have no religion. What is one difference a religion map of the world would show between Australia and Indonesia?

Q9. Choose two deserts from the desert figure, on two different continents. Write three or four sentences comparing their environments: what the ground is made of, how much rain or snow falls, and how hot or cold it is.

Q10. Here is another class’s tally of waste from one day (example data).

Type of waste	Items
Wrappers	25
Drink cans	15
Paper	10
Other	5

- (a) On grid paper, draw a column graph of this tally. Give it a title, label the axes and draw one column for each type.
- (b) Write one sentence about what your graph shows.

Inquiry task — fieldwork (links to VC2HG4S03.E03)

Run your own waste survey, like the example in code VC2HG4S03.E03.

1. **Collect.** With your class, sort and count the waste in your class bins for one day. Tally each type.
2. **Represent.** Show your tally two ways: a picture graph and a column graph.
3. **Analyse.** Write one trend and one finding. Which type is biggest? Would the tally look the same every day of the week?

4. **Act.** Suggest one action your class could take to cut down the biggest type of waste, and say how it would help.
-

Answers

Q1. (a) 4 symbols. (b) 20 items. (c) Food scraps, because it has the most symbols (5). **Q2.** (a) 15. (b) $25 - 5 = 20$ more food scraps. (c) Food scraps, plastic, paper, other, cans. **Q3.** (a) 32 in Week 1; 15 in Week 6. (b) Down. (c) The trend is downward because the number gets smaller each week. **Q4.** (a) The darkest orange colour. (b) South-east; east. (c) Any sensible reason, e.g. there is very little rain, so farming and towns are hard there. **Q5.** (a) Forest. (b) Dark blue. (c) Answers will vary, e.g. “I can see desert because the colour is tan.” **Q6.** (a) Australia; South America; Antarctica. (b) Sandy. (c) The icy desert (Antarctica). **Q7.** Example: Denpasar is hot all year but Melbourne has a cool winter; Denpasar gets far more rain than Melbourne and most of it falls from December to March. **Q8.** (a)–(b) Example: The rainfall map shows most rain near the coasts and very little in the middle; the explanation is that wet air from the sea drops its rain near the coast. (c) The map would show different main religions in the two countries — most people Muslim in Indonesia and most people Christian or with no religion in Australia. **Q9.** Answers will vary. Example: The Simpson Desert has sand dunes and is hot and dry; Antarctica is icy, cold and dry; both are deserts because both get very little rain or snow. **Q10.** (a) Check: a title; both axes labelled; columns of height 25, 15, 10 and 5. (b) Example: Wrappers were the biggest part of the waste. **Inquiry task.** Answers will vary with your class’s data. Check: two graphs of your own tally, one trend, one finding, one sensible action.

Fully-worked answers

Q1. (a) Count the circles in the Plastic row: 4. (b) Each symbol = 5 items, so $4 \times 5 = 20$ plastic items. (c) The Food scraps row has 5 symbols, more than any other row, so food scraps were the biggest part.

Q2. (a) The number above the Paper column is 15. (b) Food scraps = 25, cans = 5, so $25 - 5 = 20$ more food scraps. (c) Read the heights: 25, 20, 15, 10, 5 → food scraps, plastic, paper, other, cans.

Q3. (a) The point above Week 1 is 32; the point above Week 6 is 15. (b) The line goes down from left to right. (c) $32 \rightarrow 28 \rightarrow 25 \rightarrow 21 \rightarrow 18 \rightarrow 15$: the number gets smaller every week, so the trend is downward. A good explanation is that the clean-ups were working — less plastic was left behind each week.

Q4. (a) “Most people” is the darkest orange on the key. (b) The darkest orange sits near the south-east coast and along the east coast, so most Australians live there. (c) The rainfall map shows very little rain in the middle of Australia. With little water, farming is hard, so few people live there.

Q5. (a) The key says dark green = forest. (b) The key says dark blue = sea. (c) Match colours to the key: for example, a big tan area in the middle of Australia is desert, and a grey patch near the coast is a city.

Q6. (a) The figure labels say: Simpson Desert — Australia; Atacama Desert — South America; icy desert — Antarctica. (b) Dunes are made of sand, so the Namib is a sandy desert. (c) Antarctica is the icy desert; it gets snow instead of rain.

Q7. Compare the lines first: Denpasar’s lines stay near $29\text{--}32\text{ }^{\circ}\text{C}$ all year, while Melbourne’s lines drop to about $14\text{ }^{\circ}\text{C}$ in July — so Denpasar is hot all year and Melbourne has a cool winter. Then compare the columns: Denpasar’s tallest column (January, about 388 mm) is far taller than Melbourne’s tallest (December, about 63 mm) — so Denpasar gets much more rain, and most of it falls from December to March.

Q8. (a) Example: “The vegetation map shows forest near the coasts and desert in the middle.” (b) Plants need water, and the rainfall map shows more rain near the coasts — that explains the pattern. (c) A religion map uses one colour or symbol for each main religion, so Indonesia and Australia would be shown with different colours — one difference between two neighbouring places.

Q9. Example comparison of the Atacama (South America) and Antarctica: the Atacama’s ground is rock, dust and salt flats, it gets about 15 mm of rain a year, and it is hot in the day; Antarctica’s ground is ice, it gets about 50 mm of snow a year in the middle, and it is freezing. Both are deserts because both are very dry.

Q10. (a) Draw one column per type on grid paper: Wrappers 25, Drink cans 15, Paper 10, Other 5. Use a scale of 1 square = 1 item, or 1 square = 5 items (then the columns are 5, 3, 2 and 1 squares high). Title it “Waste in our class bins”, label the bottom axis “Type of waste” and the side axis “Items”. (b) Read your own graph: the tallest column is wrappers, so a good sentence is “Wrappers were the biggest part of our waste, and other was the smallest.”

Inquiry task. Model answer with example numbers: a class tally of 30 food scraps, 20 plastic and 10 paper becomes a picture graph with 6, 4 and 2 symbols (1 symbol = 5 items) and a column graph with columns 30, 20 and 10 high. Trend/finding: “Food scraps were the biggest part.” Action: “Start a compost bin for food scraps so the scraps go to soil instead of the bin.”

Curriculum codes linked in this section

Codes only. Each code’s idea is taught above in this book’s own words:

- **VC2HG4S03.E01** — comparing the climate graphs of an Australian place and a place in a nearby country (Example 1)
- **VC2HG4S03.E02** — thematic maps: describing patterns and suggesting explanations (Example 2, Q8)
- **VC2HG4S03.E03** — reading graphs of data to find trends (Q1–Q3, inquiry task)
- **VC2HG4S03.E04** — thematic maps and satellite images of continents (Q4–Q5)
- **VC2HG4S03.E05** — similar climates, different continents (Q6, Q9)