

Mathematics Level 2

Chapter 4 — Space

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Comparing and classifying shapes: number of sides, and opposite, parallel, curved and straight

recognise, compare and classify shapes, referencing the number of sides and using spatial terms such as 'opposite', 'parallel', 'curved' and 'straight' — VC2M2SP01

Shapes are all around us — at the park, at the football ground, on this page. Let us look at their sides and corners and sort them out.

Things you need: paper shape cards: triangle, square, rectangle, pentagon, hexagon, circle and oval cards (a pentagon has 5 sides; a hexagon has 6 sides); straws, sticky dots, scissors, glue, a ruler, pencils, and (if your teacher has one) a computer with GeoGebra Geometry.

Before we start — what you know from Level 1

This is a quick look back at work you have already done. It is not new work, and it is not for marks.

- You can make and sort shapes, and you know their names, like triangle and circle (VC2M1SP01).
- You can compare shapes: how they are the same and how they are different (VC2M1SP01).
- You can follow directions to move people and things around a space (VC2M1SP02).

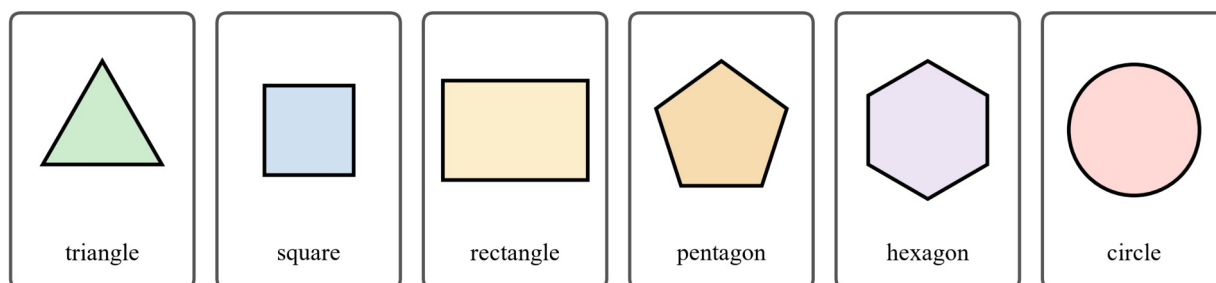
What we learn

Shapes are flat

All the shapes here are flat. They sit flat on the page, like a drawing. A box is not flat, but the faces of a box are flat — each face can be a square or a rectangle. Here we look at flat shapes only.

Names of shapes

Here are six shape cards, with their names.



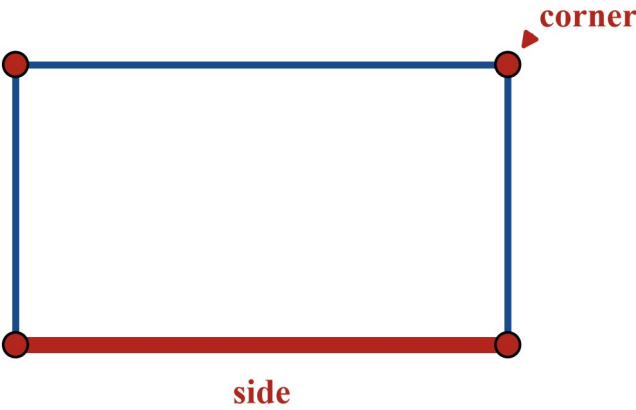
Six shape cards in a row, each with a shape and its name under it: triangle, square, rectangle, pentagon, hexagon and circle.

- A **triangle** has 3 straight sides.
- A **square** has 4 straight sides. All the sides are equal.
- A **rectangle** has 4 straight sides.
- A **pentagon** has 5 straight sides.
- A **hexagon** has 6 straight sides.
- A **circle** has 1 curved side.

Sides and corners

In this book, a **side** is an edge of a shape. A side can be straight or curved. A **corner** is where two sides meet.

A rectangle has 4 sides and 4 corners.



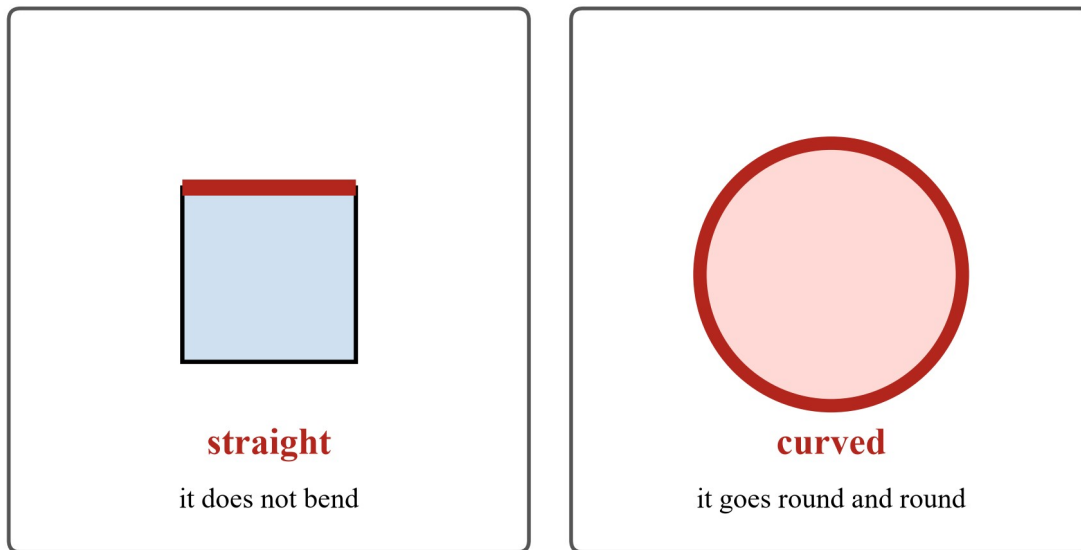
A rectangle with red dots at its 4 corners. The bottom side is thick red with the word side under it, and an arrow points at one corner with the word corner. The words at the top say: A rectangle has 4 sides and 4 corners.

Shape	Sides	Corners
triangle	3	3
square	4	4
rectangle	4	4
pentagon	5	5
hexagon	6	6
circle	1 curved side	0

Look at the circle: its one side is curved, and it has no corners. An oval is like that too.

Straight and curved sides

The side of a shape can be straight or curved.



Two cards. The left card shows a square with its top side thick red, and the words: straight, it does not bend. The right card shows a circle with its curved side thick red, and the words: curved, it goes round and round. The words at the top say: The side of a shape can be straight or curved.

A **straight** side does not bend. A **curved** side goes round and round.

Opposite sides

the top and bottom sides are opposite



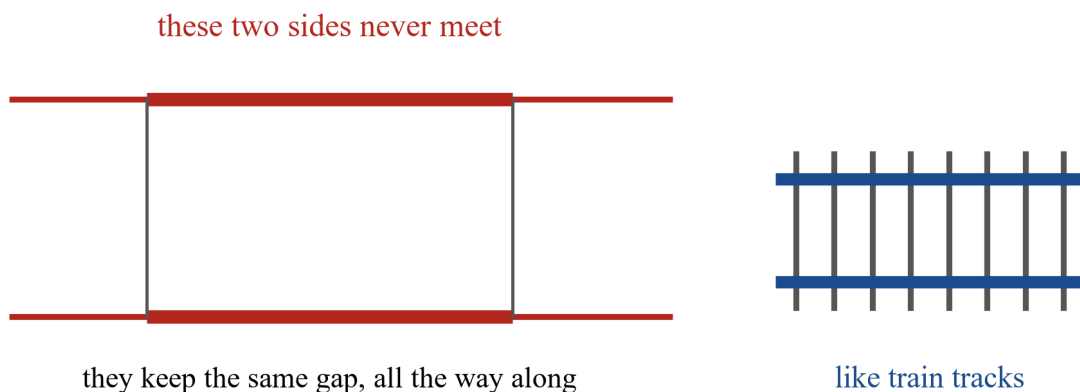
the left and right sides are opposite

Opposite sides face each other. They do not touch.

A rectangle with its top and bottom sides thick red and its left and right sides thick blue. The words above say: the top and bottom sides are opposite. The words below say: the left and right sides are opposite. The words at the bottom say: Opposite sides face each other. They do not touch.

Opposite sides face each other. They do not touch. In a rectangle, the top and bottom sides are opposite. The left and right sides are opposite too. A triangle has no opposite sides — every side touches the other two!

Parallel sides



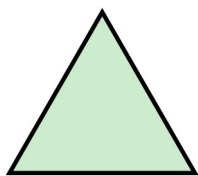
Parallel sides go the same way and never meet.

A rectangle with its top and bottom sides thick red, and the red lines going on past the shape at both ends. The words above say: these two sides never meet. The words below say: they keep the same gap, all the way along. Next to it are two blue train tracks, with the words: like train tracks. The words at the bottom say: Parallel sides go the same way and never meet.

Parallel sides go the same way and never meet. They keep the same gap all the way along, like train tracks. A rectangle has 2 pairs of parallel sides. A square has 2 pairs too. A triangle has no parallel sides.

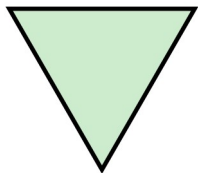
A turn does not change the shape

The same triangle, turned four ways. A turn does not change the shape.



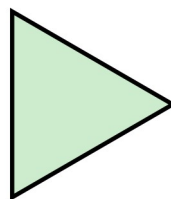
still a triangle

(pointing up)



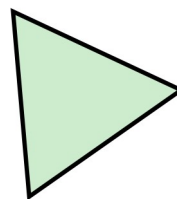
still a triangle

(upside down)



still a triangle

(on its side)



still a triangle

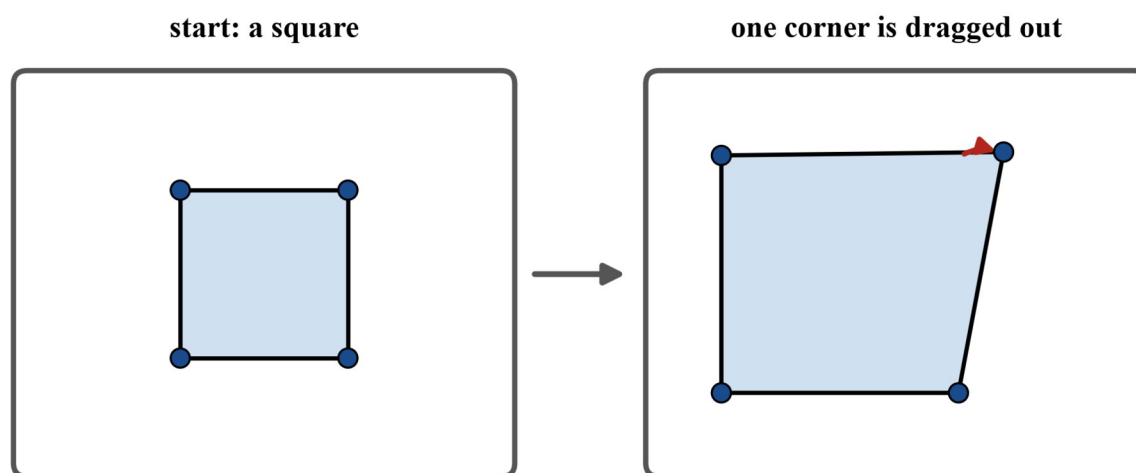
(turned a little)

The same green triangle four times: pointing up, upside down, on its side, and turned a little. Under each one the words say: still a triangle. The words at the top say: The same triangle, turned four ways. A turn does not change the shape.

Turn a triangle: point it up, turn it upside down, put it on its side. It is still a triangle! Count and check: 3 sides and 3 corners every time. A turn does not change the shape.

Shapes on a computer

We can make shapes with digital tools too. GeoGebra Geometry is a real free program for making shapes. Your teacher can show it on a screen. Make a square, then watch what happens when dragging or pushing a corner.



It still has 4 sides and 4 corners, but it is not a square now.

Two screens side by side with an arrow between them. The left screen shows a square with blue dots at its 4 corners, and the words: start: a square. The right screen shows the same shape with one corner pulled out. The words at the bottom say: It still has 4 sides and 4 corners, but it is not a square now.

The shape still has 4 sides and 4 corners, but it is not a square now — the sides are not all equal.

Source: GeoGebra, GeoGebra Geometry, [geogebra.org](https://www.geogebra.org), retrieved 2026-08-20.

We try together

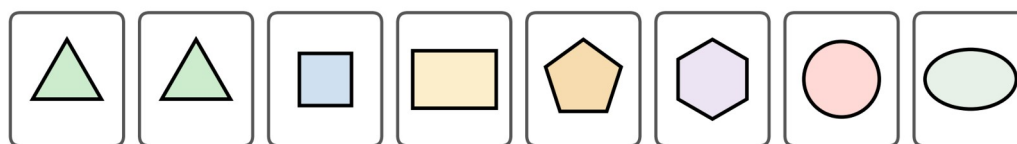
Do these with your teacher. Use the shape cards and things to touch.

We try 1 — sort the 8 shape cards

We have 8 cards: two triangles, a square, a rectangle, a pentagon, a hexagon, a circle and an oval. We sort them by the number of sides.

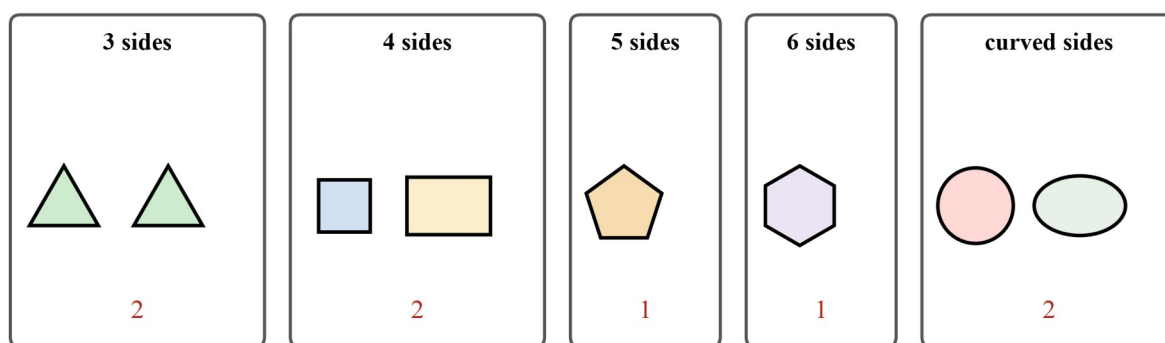
Working	Note
Touch each card. Count the sides.	Touch each side as you count.
3 sides: the two triangles. 4 sides: the square and the rectangle. 5 sides: the pentagon. 6 sides: the hexagon.	Same number of sides go together.
The circle and the oval are left over.	Their sides are curved, so they go in a curved-sides group.
Check the count: $2 + 2 + 1 + 1 + 2 = 8$.	It matches our 8 cards. ✓

The 8 cards, mixed up



sort by the number of sides

The same 8 cards, sorted by the number of sides



At the top, 8 shape cards mixed up: two triangles, a square, a rectangle, a pentagon, a hexagon, a circle and an oval, with the words: *The 8 cards, mixed up*. An arrow says: *sort by the number of sides*. At the bottom, the same 8 cards sorted into five named groups with counts: 3 sides (2), 4 sides (2), 5 sides (1), 6 sides (1), curved sides (2).

∴ We sorted the cards by their sides: 3, 4, 5, 6 and curved. Sorting by a rule puts the same shapes together.

We try 2 — turn the square

We take a square card. We count: 4 sides, 4 corners. Then we turn it.

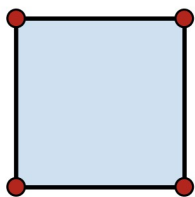
Working

Sit the square on a side. Count: 4 sides, 4 corners.
Stand it on a corner. Count again: 4 sides, 4 corners.
Turn it a little. Count again: 4 sides, 4 corners.

Note

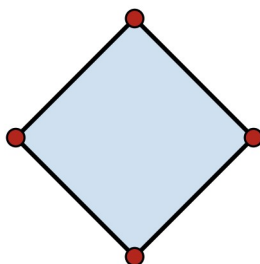
That is how it always looks.
It looks like a diamond, but it is still a square!
The count is the same every time.

The square is turned, but it still has 4 equal sides and 4 corners.



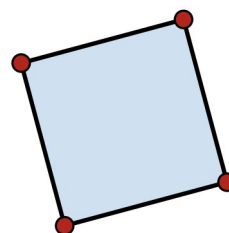
4 sides, 4 corners

(sitting on a side)



4 sides, 4 corners

(standing on a corner)



4 sides, 4 corners

(turned a little)

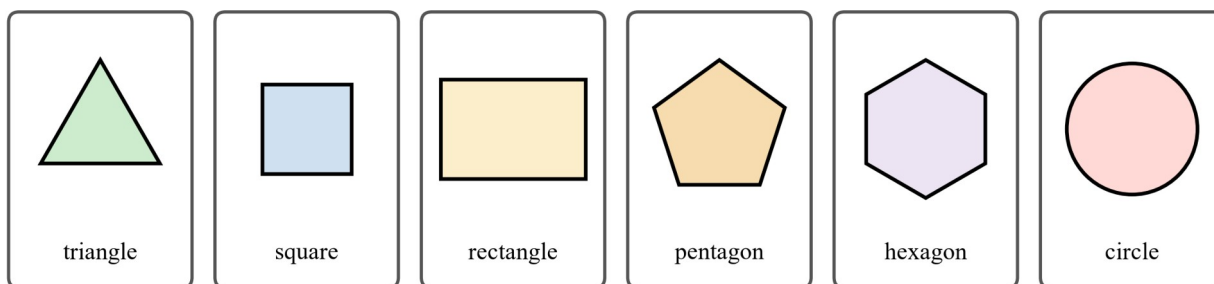
A blue square with red dots at its corners, three times: sitting on a side, standing on a corner, and turned a little. Under each one the words say: 4 sides, 4 corners. The words at the top say: The square is turned, but it still has 4 equal sides and 4 corners.

∴ A turn does not change the shape. The square is still a square, any way we turn it.

Questions to practise

With help

Q1. Look at the six shape cards.



Six shape cards in a row, each with a shape and its name under it: triangle, square, rectangle, pentagon, hexagon and circle.

- How many sides does a triangle have?
- How many sides does a pentagon have?
- How many corners does a hexagon have?
- Which card has a curved side?

Q2. Say if each side is straight or curved.

- a side of a square

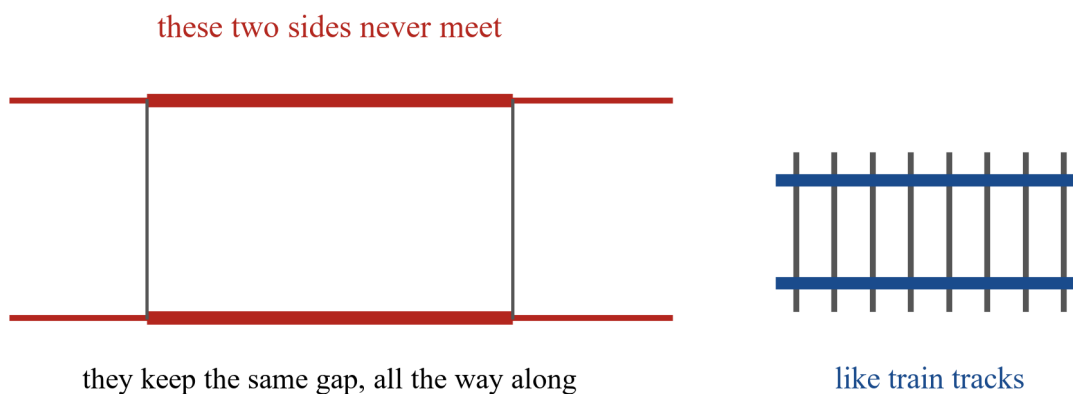
- b. the side of a circle
- c. a side of a triangle
- d. the side of an oval

Q3. Pick words from the box. Fill in each sentence.

sides corners opposite parallel curved

- a. A circle has 1 ☐ side and 0 corners.
- b. The top and bottom sides of a rectangle are ☐.
- c. ☐ sides go the same way and never meet.
- d. A hexagon has 6 ☐ and 6 ☐.

Q4. Look at the picture of the rectangle with the red sides.



Parallel sides go the same way and never meet.

A rectangle with its top and bottom sides thick red, and the red lines going on past the shape at both ends. The words above say: these two sides never meet. The words below say: they keep the same gap, all the way along. Next to it are two blue train tracks, with the words: like train tracks. The words at the bottom say: Parallel sides go the same way and never meet.

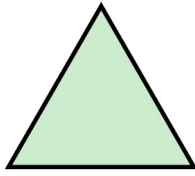
- a. What shape is in the picture?
- b. The two red sides never meet. What is the word for that?
- c. Do the red sides keep the same gap all the way along?

Q5. Which of these shapes have parallel sides? Say yes or no.

- a. square
- b. triangle
- c. rectangle
- d. circle

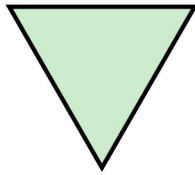
Q6. Look at the four triangles.

The same triangle, turned four ways. A turn does not change the shape.



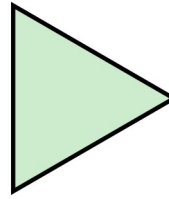
still a triangle

(pointing up)



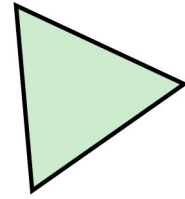
still a triangle

(upside down)



still a triangle

(on its side)



still a triangle

(turned a little)

The same green triangle four times: pointing up, upside down, on its side, and turned a little. Under each one the words say: still a triangle. The words at the top say: The same triangle, turned four ways. A turn does not change the shape.

- The second triangle is upside down. Is it still a triangle?
- How many sides does the third triangle have?
- How many corners does it have?
- What is the same about all four triangles?

On your own

Q7. Fill in the table.

Shape	Sides	Corners
triangle	3	☐
square	☐	4
rectangle	4	☐
pentagon	☐	5
hexagon	6	☐
circle	☐	0

Q8. Here are the 8 shape cards from We try 1. Sort them into two groups your own way. Say the rule for each group.

Q9. True or false? Fix the false ones.

- A square has 4 equal sides.
- A circle has 1 straight side.
- Parallel sides meet.
- A pentagon has 5 sides and 5 corners.

Q10. Tom turned a rectangle and stood it up on its short sides. "It is not a rectangle now," he said. Is Tom right? Say why.

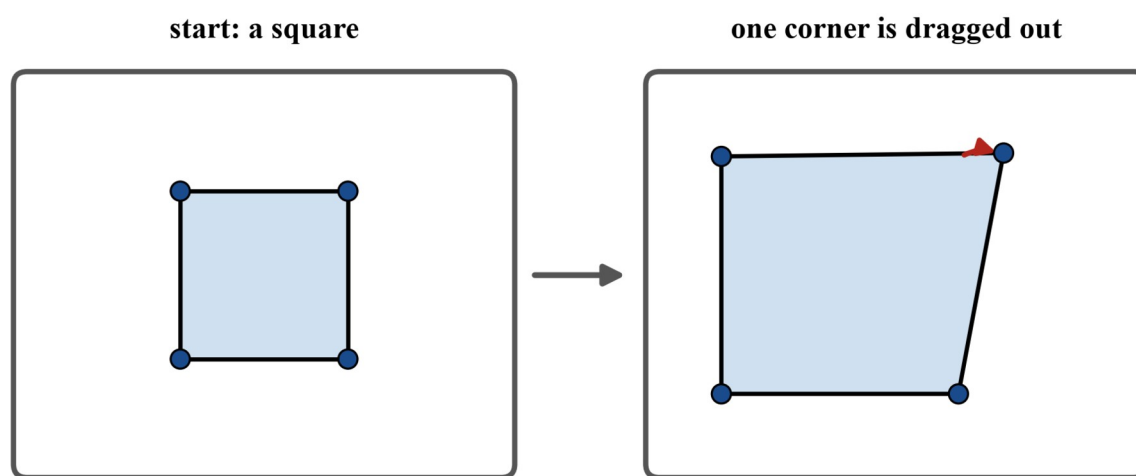
Q11. Shape riddles. Who am I?

- I have 5 straight sides and 5 corners.
- I have 4 equal straight sides and 4 corners.
- I have 1 curved side and 0 corners.
- I have 3 straight sides and 3 corners.

Q12. a. Draw a shape with 4 straight sides.

- Now draw your shape turned a different way.
- Is it still the same shape? Say why.

Q13. Your teacher makes a square in GeoGebra Geometry on a screen. Watch what happens when dragging a corner out.



It still has 4 sides and 4 corners, but it is not a square now.

Two screens side by side with an arrow between them. The left screen shows a square with blue dots at its 4 corners, and the words: start: a square. The right screen shows the same shape with one corner pulled out. The words at the bottom say: It still has 4 sides and 4 corners, but it is not a square now.

- How many sides does the new shape have?
- How many corners does it have?
- Is it still a square? How do you know?

Q14. Ruby sorted the 8 cards into two groups.

Group 1: circle, oval

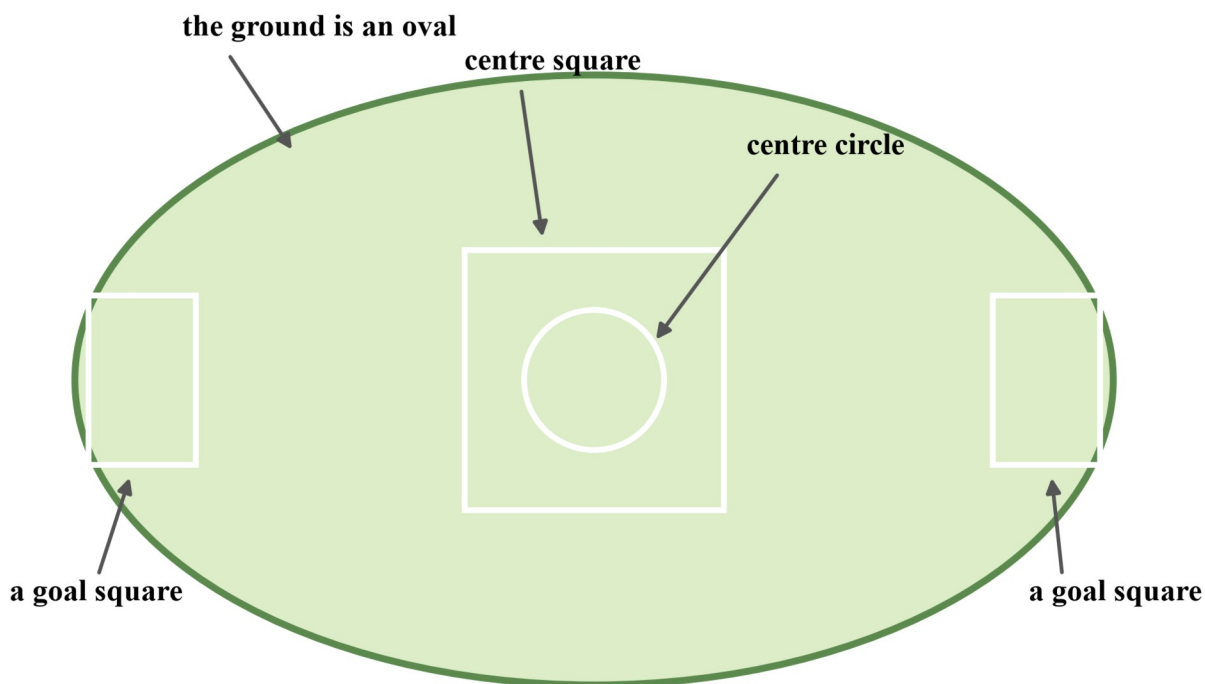
Group 2: triangle, triangle, square, rectangle, pentagon, hexagon

- What was Ruby's rule?
- Sort the same 8 cards into two groups a different way. Say your rule.

Maths in real life

Q15. Shapes at the Melbourne Cricket Ground

The Melbourne Cricket Ground is a real sports ground in Melbourne. Football and cricket are played there. The picture shows it made small for the page.



Shapes at the Melbourne Cricket Ground, made small for the page

A big green oval with a white centre square, a white centre circle inside it, and a white goal square at each end. Arrows and labels name each part: the ground is an oval, centre square, centre circle, a goal square, a goal square. The words below say: Shapes at the Melbourne Cricket Ground, made small for the page.

Source: Melbourne Cricket Ground, Melbourne Cricket Ground, mcg.org.au, retrieved 2026-08-20.

Source: Wikipedia, Australian rules football playing field, en.wikipedia.org, retrieved 2026-08-20.

- What shape is the ground?
- Is the line around the ground straight or curved?
- The centre square has 4 straight sides. How many corners does it have?
- Name one shape in the picture that has a curved side.
- A goal square has 4 straight sides. Are its opposite sides parallel?

Answers

Q1. a. 3 b. 5 c. 6 d. the circle.

Q2. a. straight b. curved c. straight d. curved.

Q3. a. curved b. opposite c. Parallel d. sides, corners.

Q4. a. a rectangle b. parallel c. yes.

Q5. a. yes b. no c. yes d. no.

Q6. a. yes b. 3 c. 3 d. they all have 3 sides and 3 corners.

Q7. triangle 3 corners; square 4 sides; rectangle 4 corners; pentagon 5 sides; hexagon 6 corners; circle 1 curved side.

Q8. Answers will be different. Example: curved sides (circle, oval) and straight sides (the other six).

Q9. a. true b. false — a circle has 1 curved side c. false — parallel sides never meet d. true.

Q10. No. A turn does not change the shape. It still has 4 sides and 4 corners, and its opposite sides are still parallel.

Q11. a. pentagon b. square c. circle d. triangle.

Q12. Answers will be different. c. Yes — a turn does not change the shape.

Q13. a. 4 b. 4 c. no — the sides are not all equal now.

Q14. a. Group 1 has curved sides; Group 2 has straight sides. b. Answers will be different.

Q15. a. an oval b. curved c. 4 d. the centre circle (or the oval ground) e. yes.

All the working

Q1. Touch and count each card. a. A triangle has 3 sides. b. A pentagon has 5 sides. c. A hexagon has 6 corners. d. The circle has a curved side.

∴ a. 3 b. 5 c. 6 d. the circle.

Q2. A straight side does not bend. A curved side goes round and round. a. A side of a square is straight. b. The side of a circle is curved. c. A side of a triangle is straight. d. The side of an oval is curved.

∴ a. straight b. curved c. straight d. curved.

Q3. a. A circle's side is curved. b. The top and bottom sides face each other: opposite. c. Sides that go the same way and never meet are parallel. d. A hexagon has 6 sides and 6 corners.

∴ a. curved b. opposite c. Parallel d. sides, corners.

Q4. a. The shape has 4 straight sides: a rectangle. b. Sides that never meet are parallel. c. Yes — the gap is the same all the way along, like train tracks.

∴ a. a rectangle b. parallel c. yes.

Q5. a. A square's opposite sides are parallel: yes. b. A triangle's sides all meet: no. c. A rectangle's opposite sides are parallel: yes. d. A circle's one side is curved: no.

∴ a. yes b. no c. yes d. no.

Q6. a. Yes — a turn does not change the shape. b. 3 sides. c. 3 corners. d. Every one has 3 sides and 3 corners; only the turn is different.

∴ a. yes b. 3 c. 3 d. 3 sides and 3 corners each.

Q7. Count each shape: triangle 3 and 3; square 4 and 4; rectangle 4 and 4; pentagon 5 and 5; hexagon 6 and 6; circle 1 curved side and 0 corners.

∴ corners: triangle 3, rectangle 4, hexagon 6; sides: square 4, pentagon 5, circle 1 (curved).

Q8. Any rule that makes two groups works. Check by naming the cards in each group. Example: curved sides (circle, oval) and straight sides (the other six).

∴ Answers will be different.

Q9. a. A square has 4 equal sides: true. b. A circle's side is curved, not straight: false. c. Parallel sides never meet: false. d. A pentagon has 5 sides and 5 corners: true.

∴ a. true b. false c. false d. true.

Q10. Turning a shape does not change it. The turned shape still has 4 sides and 4 corners, and its opposite sides are still parallel, so it is still a rectangle.

∴ No, Tom is wrong. It is still a rectangle.

Q11. Match the facts to the shapes: 5 sides and 5 corners is a pentagon; 4 equal straight sides is a square; 1 curved side and 0 corners is a circle; 3 sides and 3 corners is a triangle.

∴ a. pentagon b. square c. circle d. triangle.

Q12. Your drawings will be different. The two drawings are the same shape, turned, so the sides and corners are the same.

∴ c. yes — a turn does not change the shape.

Q13. a. Count the sides: 4. b. Count the corners: 4. c. No — a square has 4 equal sides, and the new shape's sides are not all equal.

∴ a. 4 b. 4 c. no.

Q14. a. Group 1's sides are curved; Group 2's sides are straight. b. Any different rule works. Example: 4 corners (square, rectangle) and not 4 corners (the other six).

∴ a. curved sides and straight sides b. Answers will be different.

Q15. a. The ground is an oval. b. The line around the ground is curved. c. A shape with 4 straight sides has 4 corners. d. The centre circle has a curved side (and so does the oval ground). e. A goal square's opposite sides are parallel: yes.

∴ a. an oval b. curved c. 4 d. the centre circle e. yes.

Locating positions and following pathways in a two-dimensional representation

locate positions in two-dimensional representations of a familiar space; move positions by following directions and pathways — VC2M2SP02

Look at the picture, say each step out loud, and move one square at a time. You will find the way.

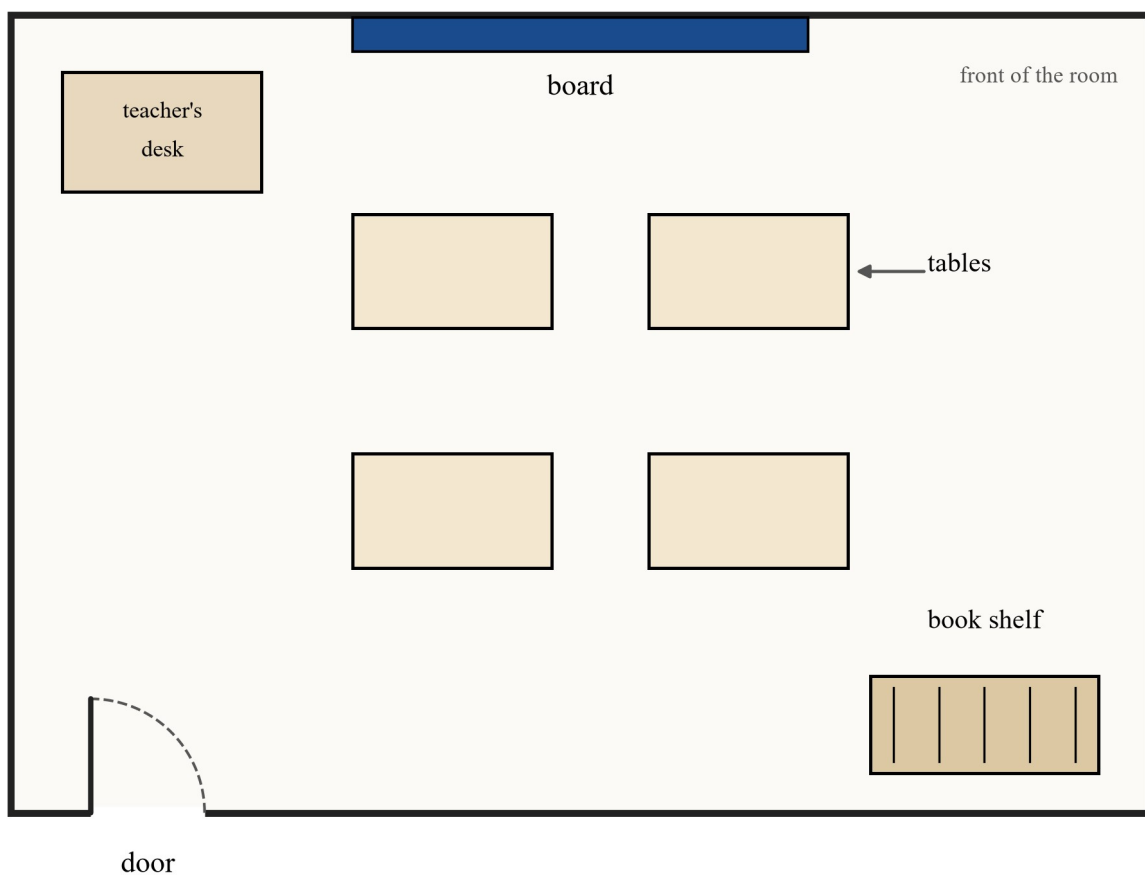
Things you need: a pencil, paper, a counter or small toy to be your robot, and the pictures on these pages.

What we learn

Where is it? Position words

A **plan** is a picture of a place, looked at from above. A **map** is like a plan of a big place. On plans and maps in this book, left and right mean *your* left and right as you look at the page.

Here is a plan of a classroom.

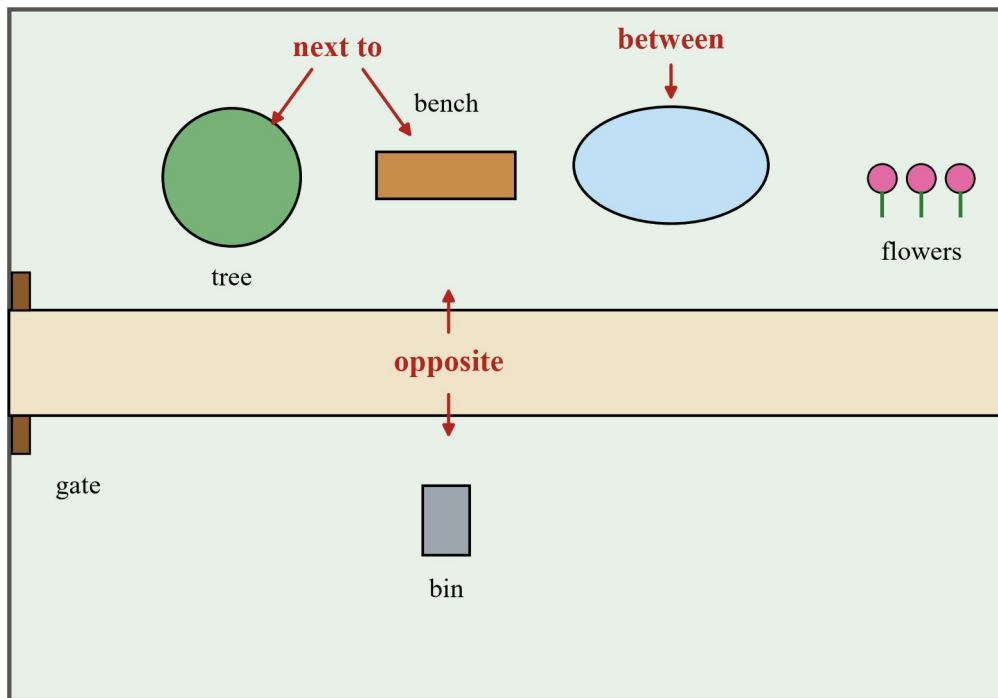


A plan of a classroom looked at from above. The board is along the top wall, with the teacher's desk next to it on the left. Four tables sit in the middle of the room. A book shelf is in the back right corner, and the door is in the back left corner.

The board is at the front of the room. The door and the book shelf are at the back of the room.

Position words tell us where things are:

- **next to** — right beside
- **between** — in the middle of two things
- **opposite** — on the other side, facing

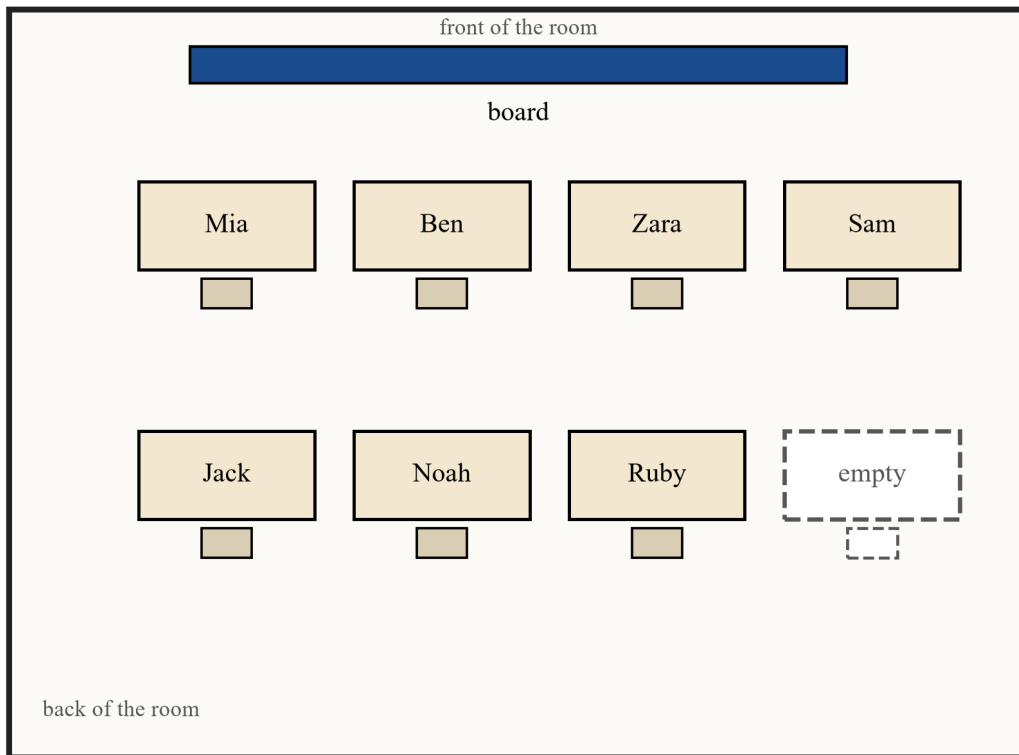


A garden plan. A bench is next to a tree. A pond is between the bench and the flowers. A bin is opposite the bench, on the other side of the path. The gate is at the left of the path.

The bench is **next to** the tree. The pond is **between** the bench and the flowers. The bin is **opposite** the bench, on the other side of the path.

Seating plans

A seating plan shows where each student sits. Here is a plan for one class.



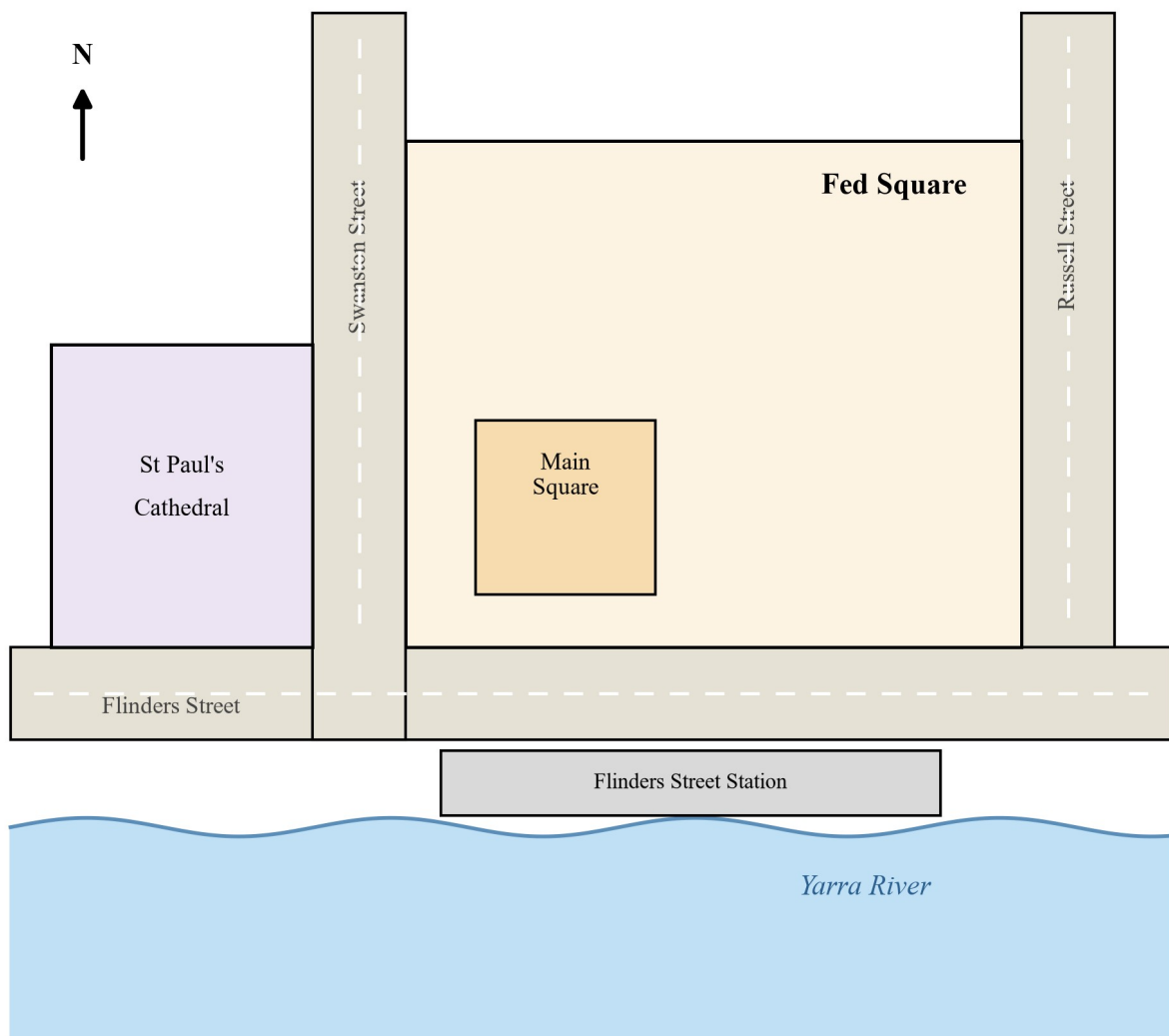
A seating plan with two rows of desks facing the board at the front of the room. The front row is Mia, Ben, Zara, Sam. The back row is Jack, Noah, Ruby, and one empty seat behind Sam.

The front row sits near the board. The back row sits near the back of the room. Jack sits **behind** Mia. The empty seat is **behind** Sam and **next to** Ruby.

We use a seating plan to find a new seat, and we can give directions to it: “Back row, next to Ruby.”

A real map: Fed Square

Federation Square (Fed Square) is a real place in Melbourne, Victoria. It is a good place to read a map, because the streets and the river tell us where things are.



A simple map of Federation Square in Melbourne. Swanston Street runs up the left side and Russell Street up the right side. Flinders Street runs along the bottom, with Flinders Street Station across it and the Yarra River below. St Paul's Cathedral is across Swanston Street, on the left. Main Square is inside Fed Square. A north arrow points to the top of the page.

Source: Federation Square, Getting here, fedsquare.com, retrieved 2026-08-20.

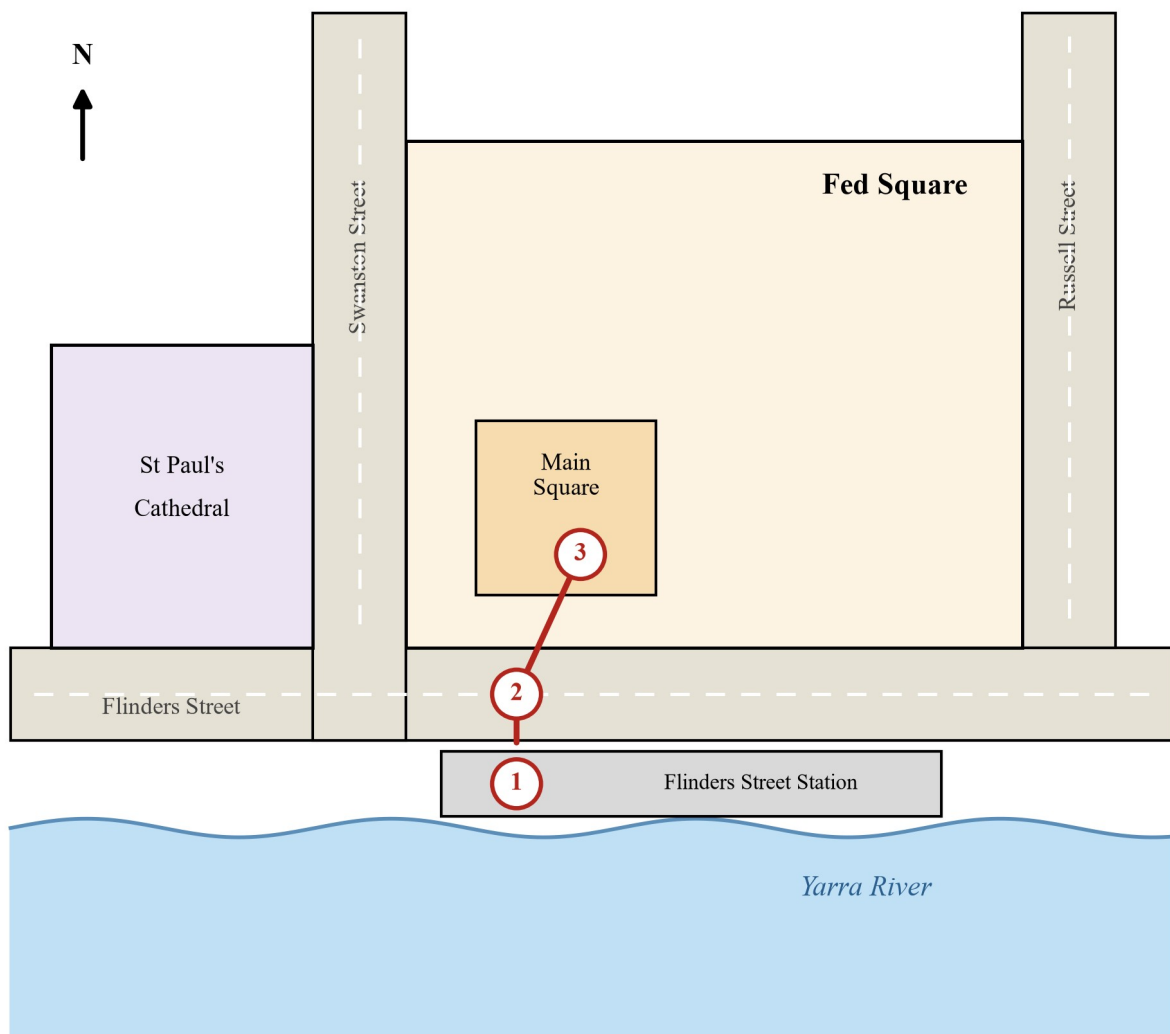
Source: Wikipedia, Federation Square, retrieved 2026-08-20.

This map is made simple for Year 2: the streets are straight and the shapes are simple. The arrow with the N shows **north**, the top of the map.

On this map:

- **Swanston Street** is on the left of Fed Square.
- **Russell Street** is on the right of Fed Square.
- **Flinders Street Station** is across Flinders Street, opposite Fed Square.
- **St Paul's Cathedral** is across Swanston Street.
- The **Yarra River** runs past the station, at the bottom of the map.

Maps help us give and follow directions. Here is a walk from the station to Main Square.



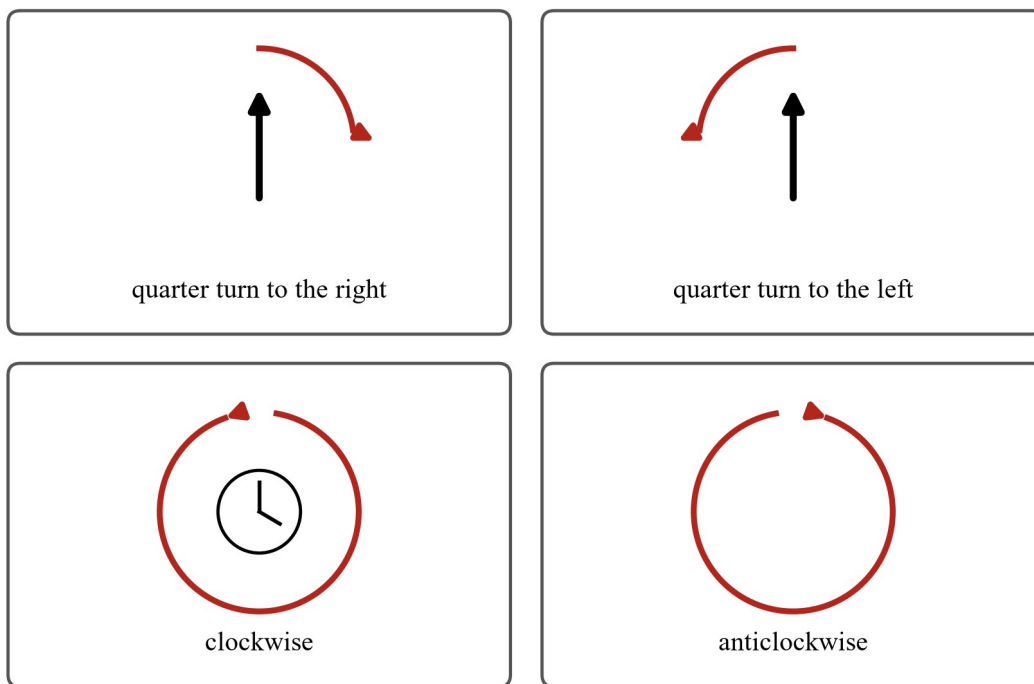
The same simple map of Federation Square, with a red numbered path: 1 at the station, 2 crossing Flinders Street, 3 ending at Main Square inside Fed Square.

Step 1: start at the front of the station. Step 2: cross Flinders Street. Step 3: walk on to Main Square. You are there!

Following instructions on a mat

A floor mat with squares is a good map for a robot toy — or for you! We move on the mat with instructions: **forward**, **quarter turn to the right**, **quarter turn to the left**.

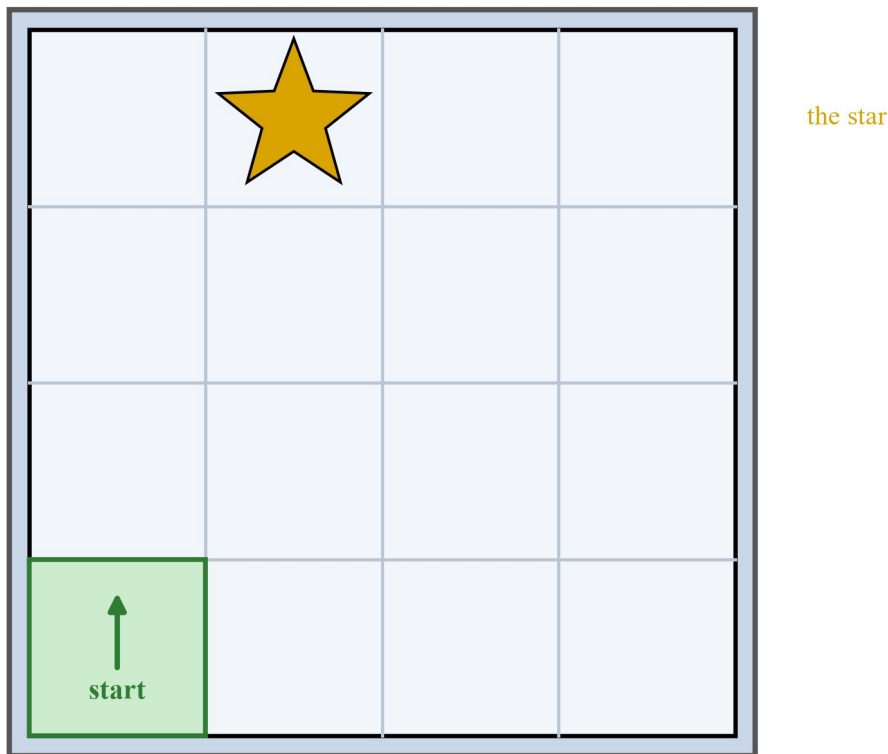
A quarter turn is the turn from facing the top of the page to facing the right of the page (or the left).



Four pictures. The first shows an arrow turning from up to right: a quarter turn to the right. The second shows an arrow turning from up to left: a quarter turn to the left. The third shows a circle arrow going the way clock hands go, around a small clock face: clockwise. The fourth shows a circle arrow going the other way: anticlockwise.

Clockwise means the way the hands of a clock go. **Anticlockwise** means the other way around. A quarter turn to the right is a clockwise turn. A quarter turn to the left is an anticlockwise turn.

Here is a 4×4 mat. You start on the green square, facing the way the green arrow points. The star is the place to get to.

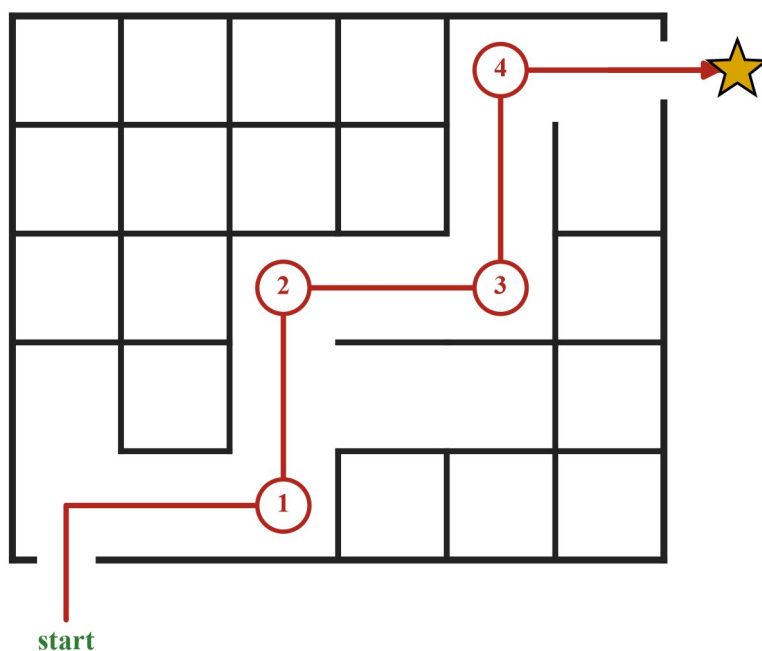


A 4 by 4 floor mat. The start square is the bottom left corner square, green, with a small arrow facing the top of the page. A gold star is on the top row, on the square one in from the left.

Mazes and turns

A maze has paths and walls. You can follow a pathway through a maze with direction words: “quarter turn to the left”, “take the path to the right”.

Here is a maze with a pathway in red. The turns are numbered 1 to 4, the way you turn as you walk.



A maze with walls. A red pathway runs from the start, below the bottom left, to a star outside the right side. Four turns on the path are numbered 1, 2, 3, 4.

Walk it with your finger. At 1 you turn to the left. At 2 you turn to the right. At 3 you turn to the left. At 4 you turn to the right — and out to the star.

We try together

Do these with your teacher. Use things to touch, or look at the pictures here.

We try 1 — read the seating plan and find the empty seat

A new student starts today. The teacher says: “Your seat is the empty one.” Let us find it and describe it.

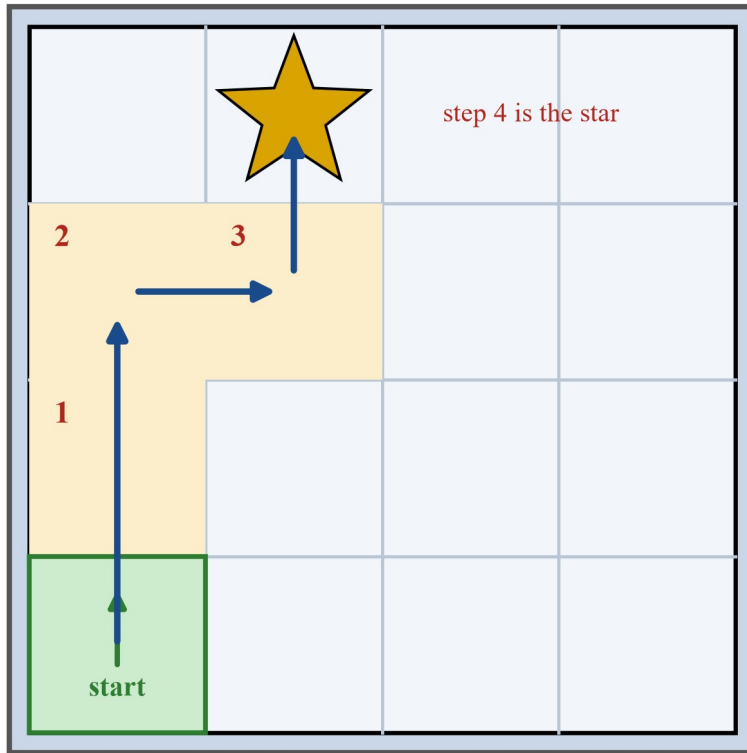
Working	Note
Find the empty seat on the plan.	It is in the back row, at the right end.
Look at the seat in front of it.	Sam’s seat. So the empty seat is behind Sam.
Look at the seat next to it.	Ruby’s seat. So the empty seat is next to Ruby.
Say the directions out loud.	“Back row, behind Sam, next to Ruby.”

∴ The empty seat is behind Sam and next to Ruby.

We try 2 — follow the instructions on the mat

Stand a counter on the start square, facing the green arrow. Follow: 2 forward, quarter turn to the right, 1 forward, quarter turn to the left, 1 forward.

Working	Note
2 forward.	Steps 1 and 2. You are 2 squares up.
Quarter turn to the right.	Now you face the right of the page.
1 forward.	Step 3.
Quarter turn to the left.	Now you face the top of the page again.
1 forward.	Step 4 — the star!



The same 4 by 4 mat with blue arrows: 2 forward, 1 to the right, 1 forward to the star. The landing squares are numbered 1, 2, 3, and the star is step 4.

∴ The instructions take the counter from the start to the star in 4 steps.

Questions to practise

With help

Q1. Look at the classroom plan.

- What is next to the teacher's desk?
- What is in the back right corner?
- What shows the way into the room?

Q2. Use the words: next to, between, opposite. Look at the garden plan.

- The bench is the tree.
- The pond is the bench and the flowers.
- The bin is the bench, on the other side of the path.

Q3. Look at the seating plan.

- Who sits between Mia and Zara?
- Who sits behind Ben?
- Who sits in front of the empty seat?

Q4. Look at the turn pictures.

- Which picture shows the way the hands of a clock go?

- b. Which picture shows a quarter turn to the left?
- c. Put your pencil on your desk facing the top of the desk. Give it a quarter turn to the right. Which way does it face now?

Q5. Look at the mat path in We try 2. How many steps does the counter take to get from the start to the star?

Q6. Fill in the missing words so the instructions get to the star on the 4×4 mat.

- a. 1 to the right, then $\square$ forward.
- b. 3 forward, quarter turn to the $\square$, then 1 forward.

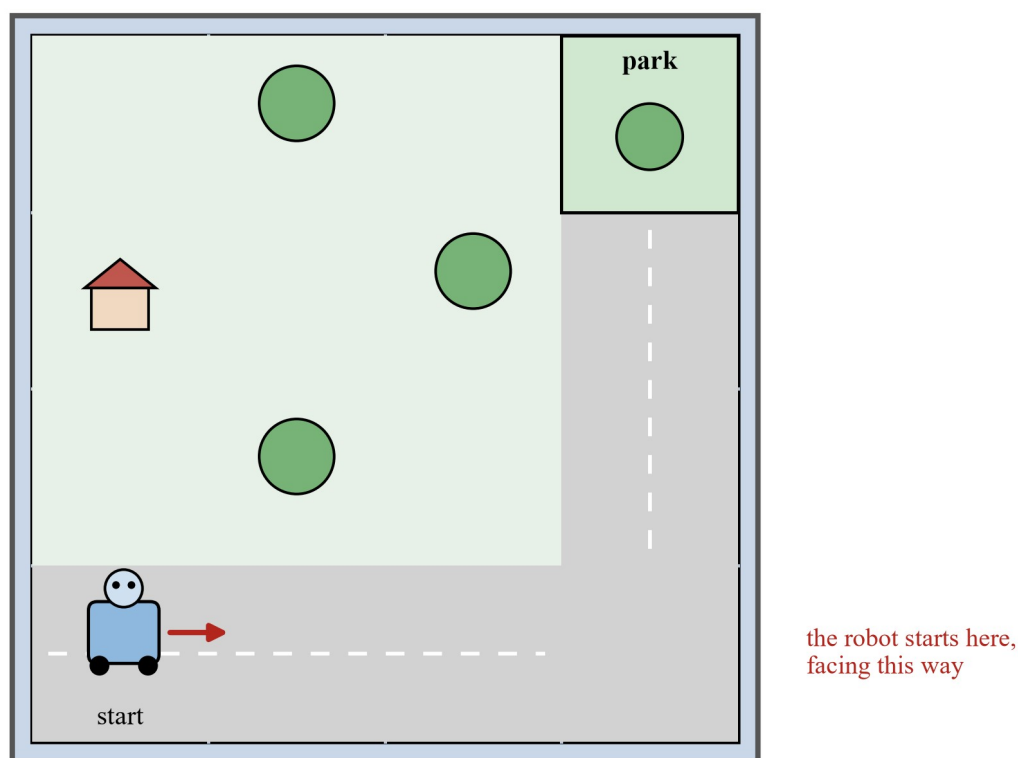
On your own

Q7. A counter starts on the green square, facing up. Follow: *1 to the right, 3 forward*. Where does it finish?

Q8. A counter starts on the green square, facing up. Follow: *3 forward, quarter turn to the right, 1 forward*. Where does it finish?

Q9. A counter starts on the green square, facing up. Follow: *2 to the right, 2 forward*. Where does it finish? Say which square.

Q10. Here is a street mat. A robot toy starts on the bottom road, facing the right of the page.



A street mat. A road runs along the bottom and up the right side. The robot toy is at the start, on the bottom road at the left, facing right. A house and trees are on the grass at the left, and a park is at the top of the right road.

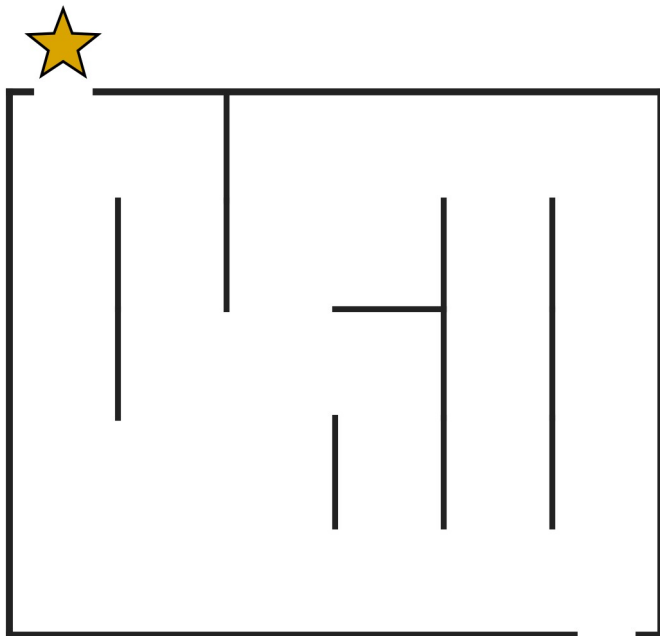
Follow: *3 forward, quarter turn to the left, 3 forward*. Where does the robot finish?

Q11. The robot starts again at the start, facing right. Follow: *1 forward, quarter turn to the left, 1 forward*. Where is it now? Say which square.

Q12. Look at the teaching maze with the numbered turns. Say each turn as left or right.

- Turn 1 ☐
- Turn 2 ☐
- Turn 3 ☐
- Turn 4 ☐

Q13. Here is a maze for you to solve. Start at the bottom, under the right-hand side. The star is outside the top left.



start

A maze with walls. The way in is at the bottom, on the right, marked start. The way out is at the top left, marked with a gold star. There is no path on this maze.

Find a way through with your finger. Then write the turns, like this: “quarter turn to the left, ...”.

Q14. Look at the Fed Square map.

- As you look at the map, which street is on the left of Fed Square?
- What is across Flinders Street, opposite Fed Square?
- What is the name of the river at the bottom of the map?

Maths in real life

Q15. A class visit to Fed Square

A Year 2 class in Melbourne takes the train to Flinders Street Station for a visit to Fed Square. Use the map and the red numbered path.

- The class comes out of the station. Which street do they cross to get to Fed Square?
- They follow the red path: 1, 2, 3. Where do they stop inside Fed Square?
- After morning tea at Main Square, the class walks across Swanston Street to see St Paul's Cathedral. Which way do they walk from Fed Square — to the left of the map, or to the right of the map?
- Write one instruction, with a position word, to tell a friend where the Yarra River is on the map.

Answers

Q1. a. The board. b. The book shelf. c. The door.

Q2. a. next to b. between c. opposite.

Q3. a. Ben. b. Noah. c. Sam.

Q4. a. clockwise, the bottom left picture. b. The top right picture. c. The right of the desk.

Q5. 4 steps.

Q6. a. 3 b. right.

Q7. On the star.

Q8. On the star.

Q9. 2 squares to the right of the start and 2 squares up (not the star).

Q10. At the park.

Q11. 1 square to the right of the start and 1 square up, on the grass.

Q12. a. left b. right c. left d. right.

Q13. One way: quarter turn to the left, 5 forward, quarter turn to the right, 4 forward, out to the star. (Other ways are also right.)

Q14. a. Swanston Street. b. Flinders Street Station. c. The Yarra River.

Q15. a. Flinders Street. b. Main Square. c. To the left of the map. d. One good answer: “The Yarra River is opposite the station, at the bottom of the map.”

All the working

Q1. a. The teacher’s desk is right beside the board, so the board is next to the teacher’s desk. b. The book shelf is in the back right corner. c. The door shows the way into the room.

∴ a. The board b. The book shelf c. The door.

Q2. The garden plan shows the bench right beside the tree, the pond in the middle of the bench and the flowers, and the bin on the other side of the path facing the bench.

∴ a. next to b. between c. opposite.

Q3. a. Ben’s desk is between Mia’s and Zara’s in the front row. b. Noah sits in the back row behind Ben. c. Sam sits in the front row, in front of the empty seat.

∴ a. Ben b. Noah c. Sam.

Q4. a. Clockwise means the way the hands of a clock go, so the bottom left picture with the clock is clockwise. b. The top right picture shows the arrow turning from up to left: a quarter turn to the left. c. Facing the top of the desk, after a quarter turn to the right the pencil faces the right of the desk.

∴ a. clockwise b. the top right picture c. the right of the desk.

Q5. Count the steps on the picture: 1, 2, 3, and the star is step 4.

∴ 4 steps.

Q6. a. 1 to the right puts you below the star; 3 forward climbs to the star. b. 3 forward climbs to the top row; a quarter turn to the right faces the star; 1 forward gets there.

∴ a. 3 b. right.

Q7. 1 to the right, then 3 forward, is on the star's square: the top row, one square in from the left.

∴ On the star.

Q8. 3 forward reaches the top left corner square. The quarter turn to the right faces the star. 1 forward is on the star.

∴ On the star.

Q9. 2 to the right moves 2 squares right. 2 forward moves 2 squares up. That square is not the star; the star is one more square up and one to the left.

∴ 2 squares to the right of the start and 2 squares up.

Q10. 3 forward takes the robot along the bottom road to the corner. The quarter turn to the left faces it up the right road. 3 forward reaches the park square.

∴ At the park.

Q11. 1 forward moves 1 square right. The quarter turn to the left faces the robot up. 1 forward moves 1 square up, on the grass.

∴ 1 square right and 1 square up from the start, on the grass.

Q12. Walk the red path from the start. At 1 the path turns from right to up: left. At 2 it turns from up to right: right. At 3 it turns from right to up: left. At 4 it turns from up to right: right.

∴ a. left b. right c. left d. right.

Q13. One way through: come in facing up. Quarter turn to the left and go 5 forward along the bottom to the left wall. Quarter turn to the right and go 4 forward up the left side. Out through the top to the star. Check with your finger that no wall is crossed; other ways are also right.

∴ One way: quarter turn to the left, 5 forward, quarter turn to the right, 4 forward, out to the star.

Q14. a. The north arrow points up, so the left of the map is Swanston Street. b. Across Flinders Street, at the bottom of the map, is Flinders Street Station. c. The river at the bottom is the Yarra River.

∴ a. Swanston Street b. Flinders Street Station c. The Yarra River.

Q15. a. The station is across Flinders Street from Fed Square, so the class crosses Flinders Street. b. The red path ends at Main Square (step 3). c. St Paul's Cathedral is across Swanston Street, on the left of the map, so the class walks to the left. d. A good instruction uses a position word: "The Yarra River is opposite the station, at the bottom of the map."

∴ a. Flinders Street b. Main Square c. to the left of the map d. one good answer shown.

What comes next

Next year you will look at objects and their key features (VC2M3SP01), and in Year 4 you will use letters and numbers to find places on big maps (VC2M4SP03).

Test

recognise, compare and classify shapes, referencing the number of sides and using spatial terms such as 'opposite', 'parallel', 'curved' and 'straight' — VC2M2SP01

locate positions in two-dimensional representations of a familiar space; move positions by following directions and pathways — VC2M2SP02

Chapter 4 — Space · Chapter check C4 · 10 marks

Chapter check C4 looks at what you can do in Chapter 4. This is a class check, not a big test.

How this check works

- **Time** — there is no set time. Most students take about 15 minutes.
- **Things** — everything you need is here, on these pages. See “Things you need” below.
- **No calculators** — a calculator is a machine that does number work for you. There are no calculators in this check.
- **Reading** — your teacher may read any question to you.
- Answer all the questions. Write your answers on these pages.

Things you need: paper shape cards: triangle, square, rectangle, pentagon, hexagon, circle and oval cards (a pentagon has 5 sides; a hexagon has 6 sides); a counter; a pencil; and the pictures on these pages.

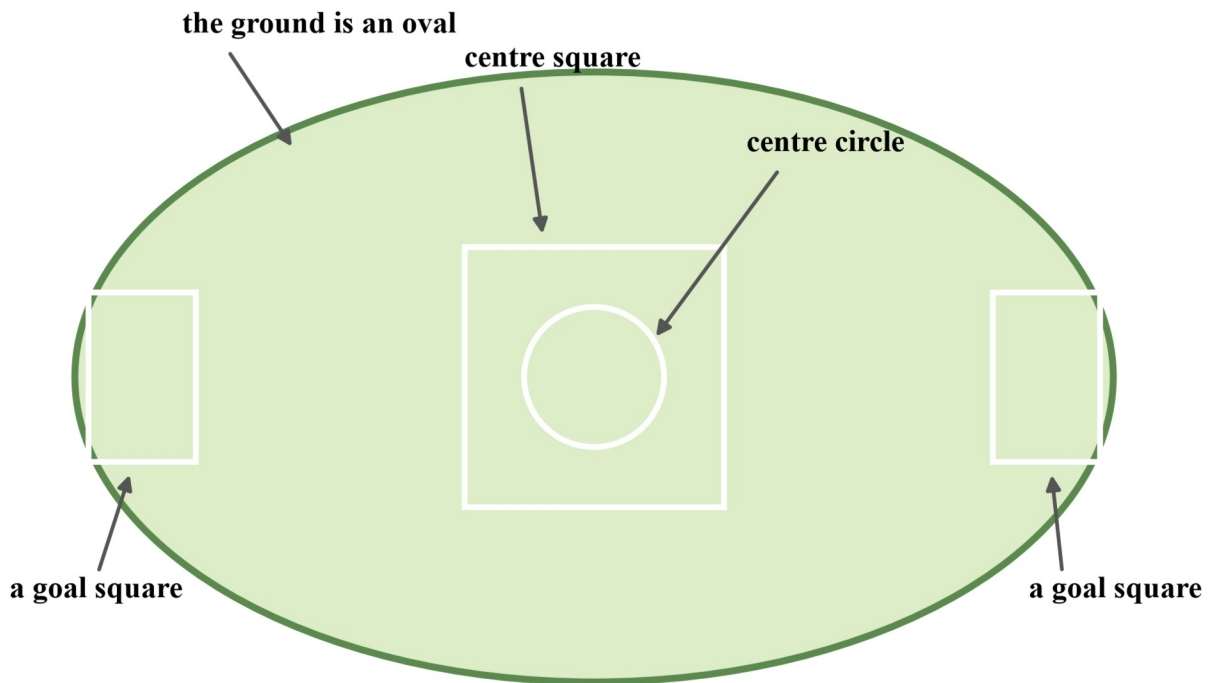
The counter is small. Do not put it in your mouth.

Q1. (1 mark) Which shape has 5 straight sides and 5 corners?

- A. triangle
- B. square
- C. pentagon
- D. circle

Answer: ☐

Q2. (2 marks) Look at the picture of the Melbourne Cricket Ground. The Melbourne Cricket Ground is a real sports ground in Melbourne. The picture shows it made small for the page.



Shapes at the Melbourne Cricket Ground, made small for the page

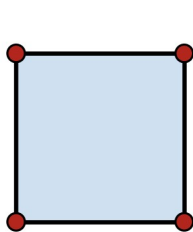
A big green oval with a white centre square, a white centre circle inside it, and a white goal square at each end. Arrows and labels name each part: the ground is an oval, centre square, centre circle, a goal square, a goal square. The words below say: Shapes at the Melbourne Cricket Ground, made small for the page.

Source: Melbourne Cricket Ground, Melbourne Cricket Ground, mcg.org.au, retrieved 2026-08-20.

- a. Name one shape in the picture that has a curved side. ☐ (1 mark)
- b. The centre square has 4 straight sides. Are its opposite sides parallel? Say yes or no. ☐ (1 mark)

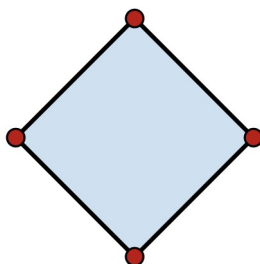
Q3. (3 marks) Ruby stands a square card on its corner.

The square is turned, but it still has 4 equal sides and 4 corners.



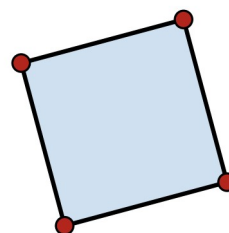
4 sides, 4 corners

(sitting on a side)



4 sides, 4 corners

(standing on a corner)



4 sides, 4 corners

(turned a little)

A blue square with red dots at its corners, three times: sitting on a side, standing on a corner, and turned a little. Under each one the words say: 4 sides, 4 corners. The words at the top say: The square is turned, but it still has 4 equal sides and 4 corners.

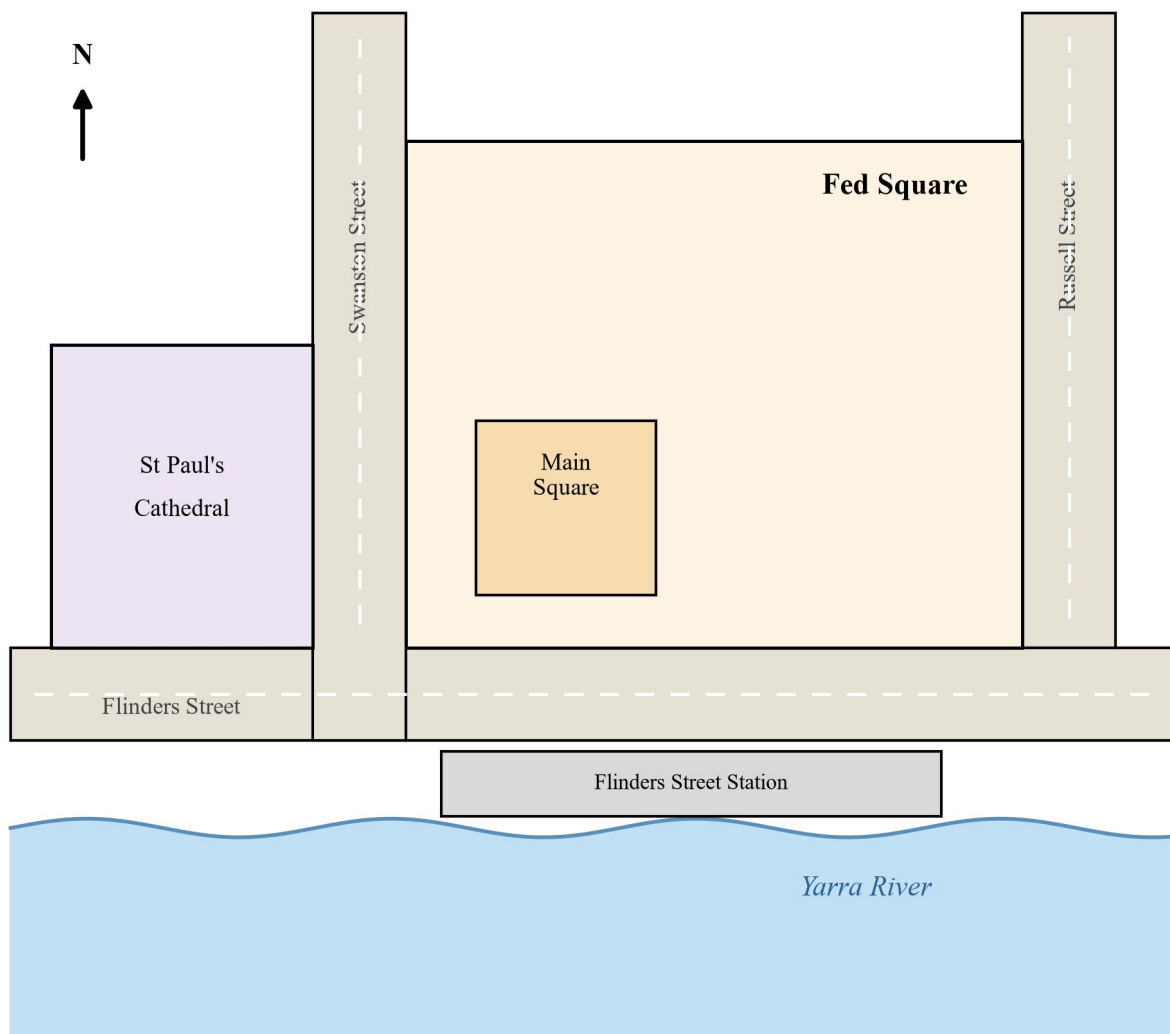
“Look,” she says. “It is a diamond now. It is not a square.”

Is Ruby right? Show your working. Say why.

Working

Say why

Q4. (1 mark) Look at the map of Federation Square (Fed Square). Federation Square is a real place in Melbourne, Victoria. This map is made simple for Year 2. The arrow with the N shows north, the top of the map.



A simple map of Federation Square in Melbourne. Swanston Street runs up the left side and Russell Street up the right side. Flinders Street runs along the bottom, with Flinders Street Station across it and the Yarra River below. St Paul's Cathedral is across Swanston Street, on the left. Main Square is inside Fed Square. A north arrow points to the top of the page.

Source: Federation Square, Getting here, fedsquare.com, retrieved 2026-08-20.

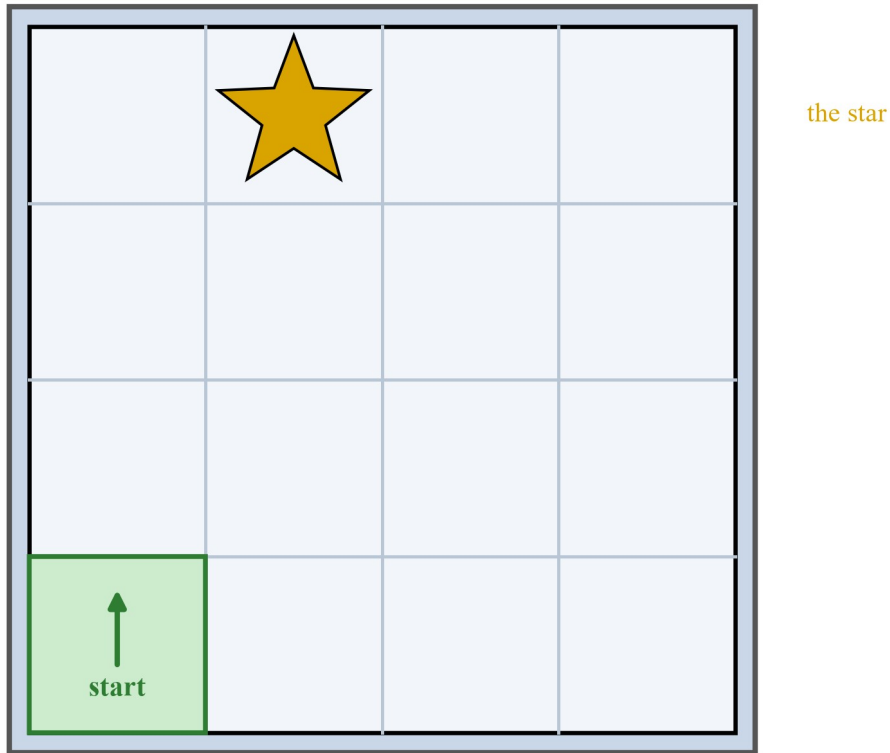
Source: Wikipedia, Federation Square, retrieved 2026-08-20.

What is across Flinders Street, opposite Fed Square?

- A. the Yarra River
- B. Flinders Street Station
- C. St Paul's Cathedral
- D. Main Square

Answer: ☐

Q5. (3 marks) A counter stands on the green start square of this 4×4 mat. It faces the top of the page. The star is the place to get to.



A 4 by 4 floor mat. The start square is the bottom left corner square, green, with a small arrow facing the top of the page. A gold star is on the top row, on the square one in from the left.

Follow the instructions: 2 forward, quarter turn to the right, 1 forward, quarter turn to the left.

- Where does the counter finish? Say which square. □ (2 marks)*
- Write one instruction to get the counter from there to the star. □ (1 mark)*

Solutions

Answer key

Q	Answer	Mark
1	C — the pentagon	1
2a	the centre circle (or the oval ground)	1
2b	yes	1
3	No — the shape is still a square (working below)	3
4	B — Flinders Street Station	1
5a	2 squares up from the start, then 1 square to the right	2
5b	1 forward	1
	Total	10

All the working

Q1. Count the sides of each shape: a triangle has 3, a square has 4, a pentagon has 5, a hexagon has 6, and a circle has 1 curved side. The shape with 5 straight sides and 5 corners is the pentagon.

∴ C.

Q2. a. A curved side goes round and round. In the picture, the centre circle has a curved side, and so does the oval ground. b. The opposite sides of the centre square face each other and never meet, like train tracks. They are parallel.

∴ a. the centre circle (or the oval ground) b. yes.

Q3. Count the turned square: 4 sides and 4 corners — the same as before it was turned. A square has 4 equal sides, and the turned shape still has 4 equal sides and 4 corners. A turn does not change the shape.

∴ No, Ruby is not right. The shape is still a square.

Q4. On the map, Flinders Street Station is across Flinders Street, opposite Fed Square. The Yarra River runs past the station, at the bottom of the map. St Paul's Cathedral is across Swanston Street, and Main Square is inside Fed Square.

∴ B — Flinders Street Station.

Q5. Stand the counter on the green square, facing the top of the page. *2 forward*: the counter moves 2 squares up. *Quarter turn to the right*: now it faces the right of the page. *1 forward*: it moves 1 square to the right. *Quarter turn to the left*: now it faces the top of the page again. The counter is 2 squares up from the start and 1 square to the right. The star is 1 more square up, and the counter faces it.

∴ a. 2 squares up from the start, then 1 square to the right b. 1 forward.

Marking guide

This check scores only what Chapter 4 owns. Each part is scored on its own:

- **VC2M2SP01** — shapes — Q1, Q2 and Q3 — **6 marks**
- **VC2M2SP02** — maps and pathways — Q4 and Q5 — **4 marks**

An achievement standard is a sentence that says what students show they can do. The two sentences below are the achievement standards of VC2M2SP01 and VC2M2SP02, word for word. The marks look at the way students do the work, not just at the answers.

VC2M2SP01 — shapes — Q1, Q2, Q3 — 6 marks

Students compare and classify shapes, describing features using formal spatial terms. — VC2M2SP01

Mark	Look for
1	Q1 — compares the shapes by their sides and corners, and picks the shape with 5 straight sides and 5 corners: C, the pentagon.
1	Q2a — names a shape in the picture with a curved side: the centre circle or the oval ground.
1	Q2b — says yes : the opposite sides of the centre square are parallel.
1	Q3 — shows the working: counts the sides and corners of the turned square, 4 sides and 4 corners.
1	Q3 — says Ruby is not right : the shape is still a square.
1	Q3 — says why: a turn does not change the shape ; it still has 4 equal sides and 4 corners.

VC2M2SP02 — maps and pathways — Q4, Q5 — 4 marks

They locate and identify positions of features in two-dimensional representations and move position by following directions and pathways. — VC2M2SP02

Mark	Look for
1	Q4 — finds a feature on the map: B, Flinders Street Station , across Flinders Street, opposite Fed Square.
1	Q5 — moves the counter by following the directions, and shows it: draws, marks or tells each move, one instruction at a time.
1	Q5 — names the end square: 2 squares up from the start, then 1 square to the right.
1	Q5 — writes one instruction that gets the counter to the star: 1 forward.

The pick-an-answer items. Q1 and Q4 are the only items with A–D answers. They are 2 marks of 10 — no more than a quarter of the check. Each one goes with its code: Q1 goes with VC2M2SP01; Q4 goes with VC2M2SP02.

Record the marks.

Q	Code	Mark
1	VC2M2SP01	/1
2a	VC2M2SP01	/1
2b	VC2M2SP01	/1
3 — working	VC2M2SP01	/1

Q	Code	Mark
3 — answer	VC2M2SP01	/1
3 — reason	VC2M2SP01	/1
4	VC2M2SP02	/1
5 — working	VC2M2SP02	/1
5 — end square	VC2M2SP02	/1
5 — instruction	VC2M2SP02	/1
Total		/10

What the marks say. A student who scores across this check is showing both parts of the Level 2 Space achievement standard:

- *Students compare and classify shapes, describing features using formal spatial terms.* — VC2M2SP01
- *They locate and identify positions of features in two-dimensional representations and move position by following directions and pathways.* — VC2M2SP02

A mark not scored here says what to teach next.