Mathletics

Series A Student

Space and Shape

My name

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Series A – Space and Shape

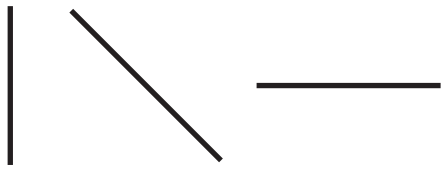
Contents

Series Author:

Rachel Flenley

2D space – lines and curves

These are **straight lines**.



These are **curves**.

1 Draw 5 different straight lines. Draw 5 different curves.

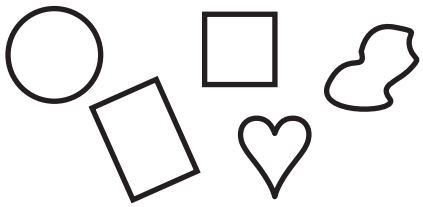
straight lines	**curves**

2 Trace over the **straight lines** in red. Trace over the **curves** in green.

3 On a big piece of paper draw 3 straight lines and 3 curves. Swap your paper with a partner's and draw more lines and curves to turn them into pictures.

2D space – closed shapes, open lines

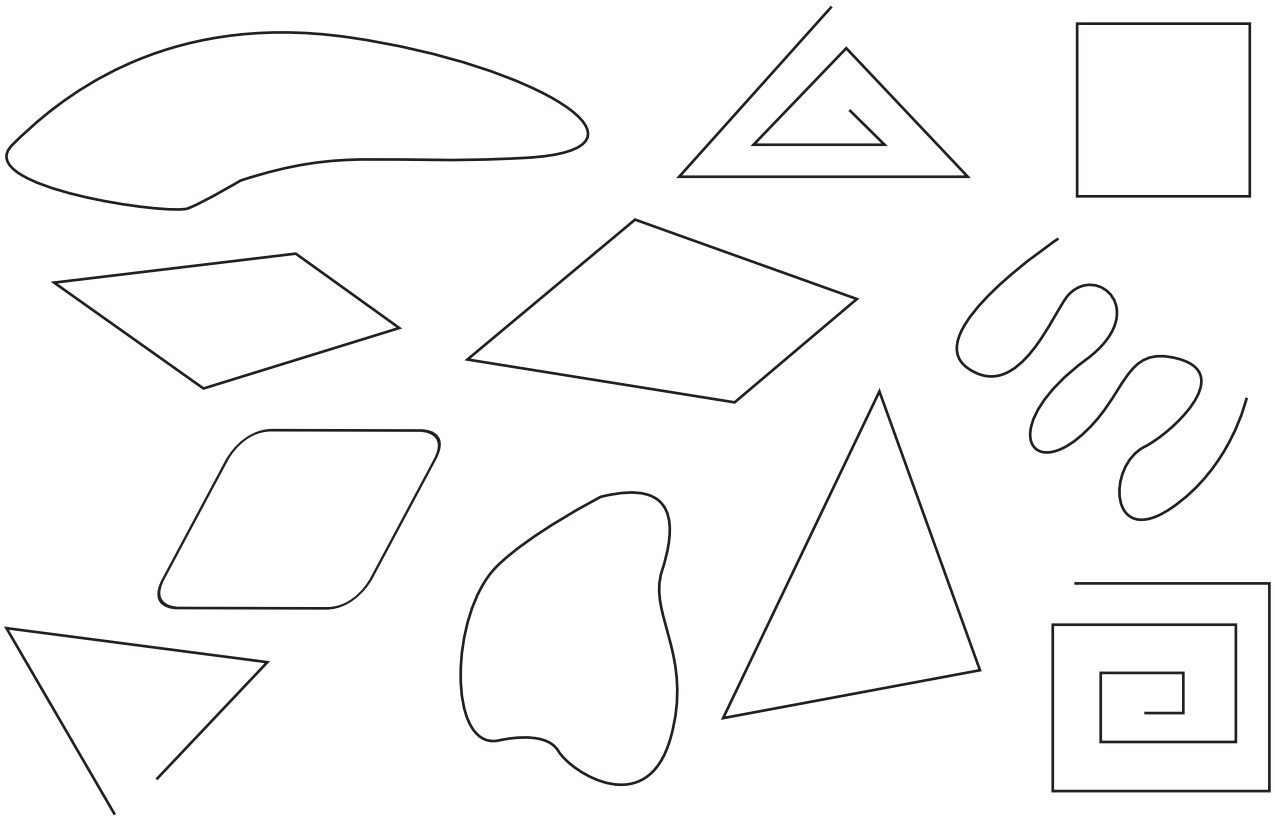
Shapes are **closed**. Their lines **always** join up.



These **are** shapes.

These **are not** shapes.
They are just lines.

1 Colour the **shapes**. Trace over the **lines**.



2 Draw either a line or a shape for your partner.

Ask your partner, 'Line or shape?'

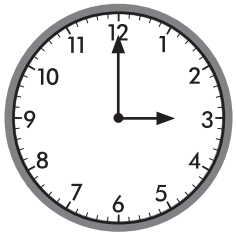
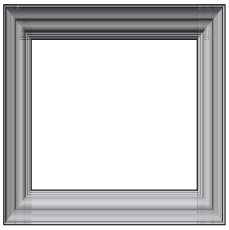
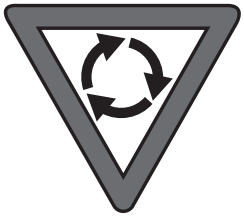
Give them a counter if they are right.

Swap.

Play until you both have 5 counters.

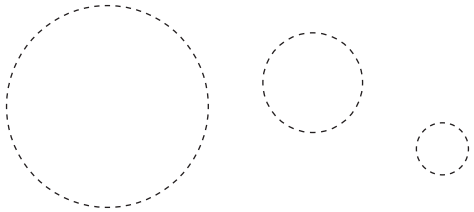
2D space – matching shapes with everyday objects

1 Colour the matching shape.

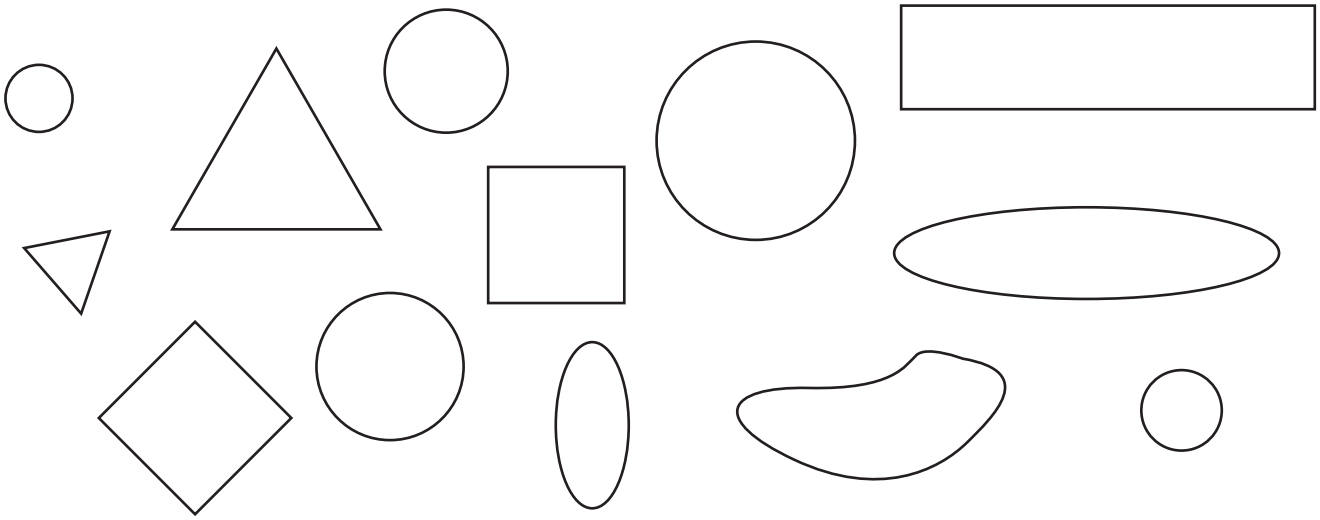
2D space – circles

1 Say, trace and draw.



circle

2 Colour all the circles red.

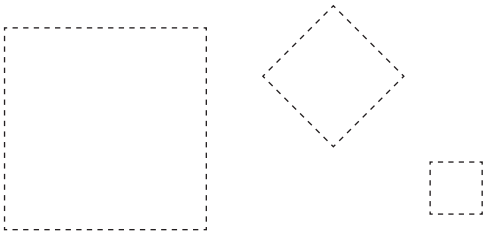


3 Go on a circle hunt with a partner. Every time you find a circle, draw it below.

We found ☐ circles on our circle hunt.

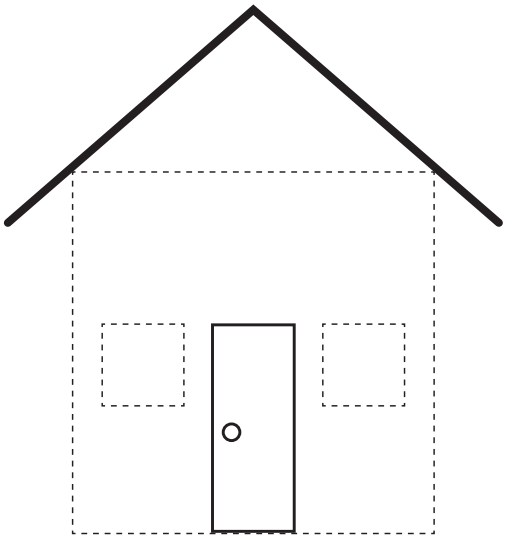
2D space – squares

1 Say, trace and draw.



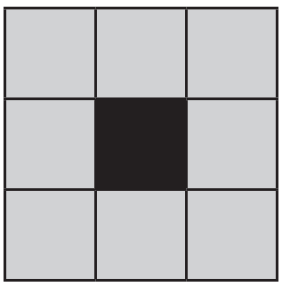
square

2 Trace over the squares.



Draw a bear made of squares.

3 Look at the black square.
We have put squares around it to make a bigger square.

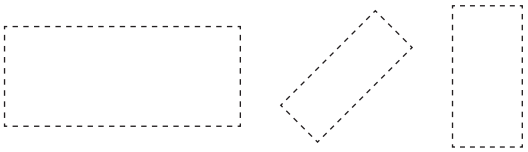


Make this yourself using square blocks.
Now, can you make it bigger again? Can you keep going?
How big can you make your square?

2D space – rectangles

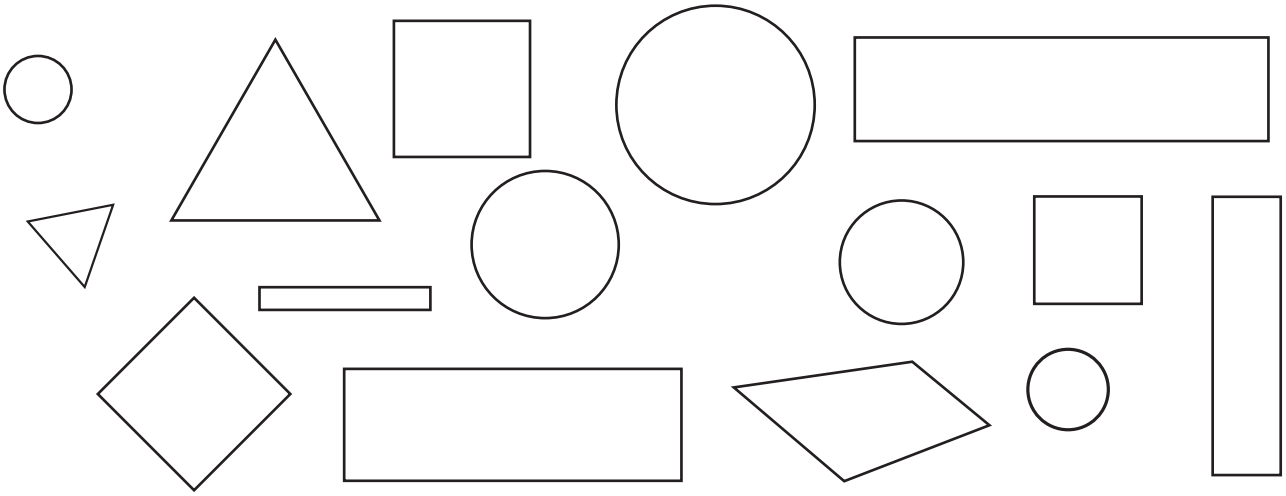
copy

1 Say, trace and draw.



rectangle

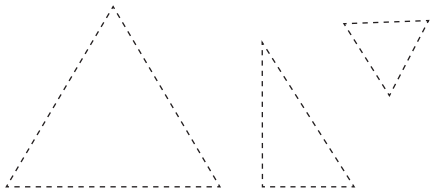
2 Colour all the rectangles green.



3 Cut out your rectangular brick below. Write your name on it and decorate it with rectangles.
Build a class wall with all the bricks.
How many bricks are in your wall? What shape is your wall?

2D space – triangles

1 Say, trace and draw.



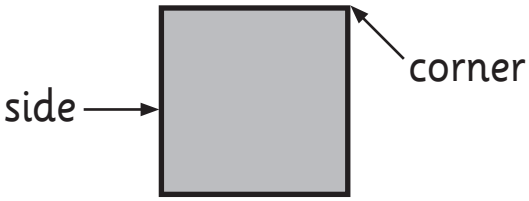
triangle

2 Loop all the triangles.

3 Draw a triangle below and turn it into your own sign.
Share your sign with your class.

2D space – properties

All shapes have sides.
Some shapes have corners as well.

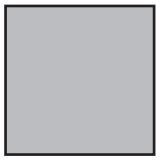


You will need: attribute blocks

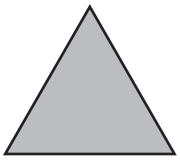
What to do:

Find these blocks.

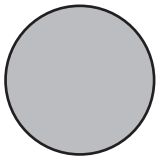
Count how many sides and corners on each shape. Record them.



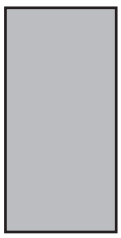
A **square** has 4 sides and 4 corners.



A **triangle** has ____ sides and ____ corners.



A **circle** has ____ sides and ____ corners.

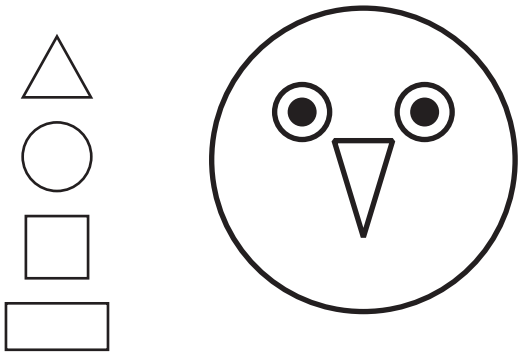


A **rectangle** has ____ sides and ____ corners.

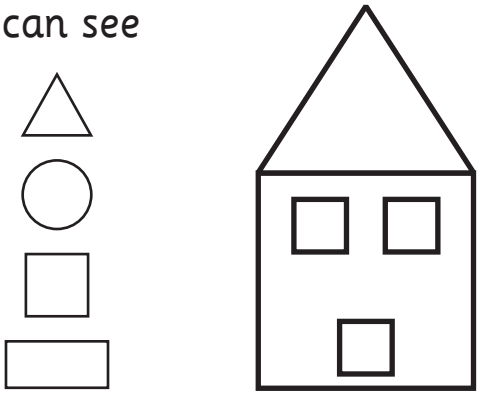
2D space – explore

1 What shapes can you see? Colour them.

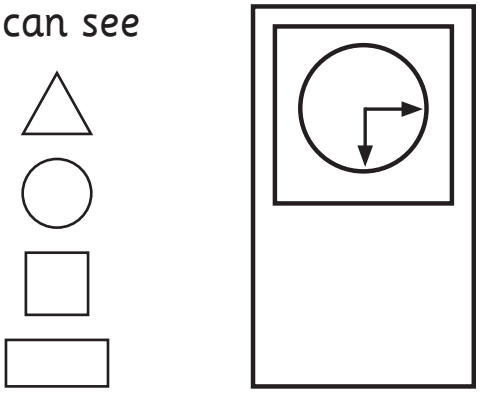
I can see



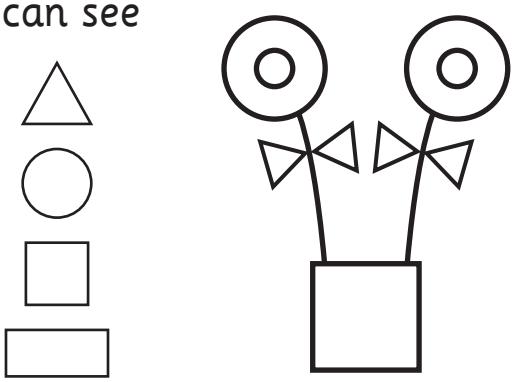
I can see



I can see



I can see

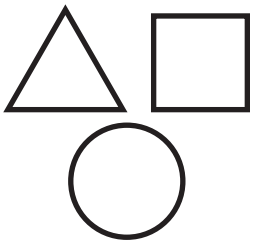


2 Draw your own shape picture using △ ○ □ ▭.
Swap with a partner and colour the shapes you can see in their picture.

I can see

2D space – explore

How have we sorted these shapes?



Can you think of another way we could sort them?

You will need: a partner attribute blocks

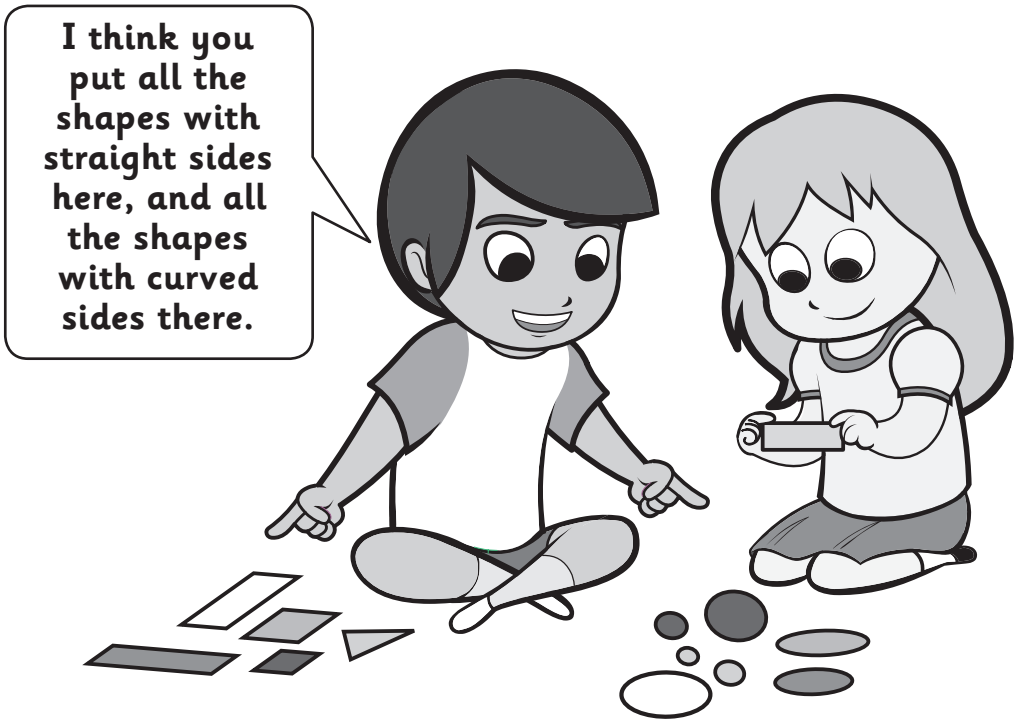
What to do:

Take turns sorting the blocks.

Ask your partner to tell you how they think you sorted the blocks.

Are they right?

Swap jobs.

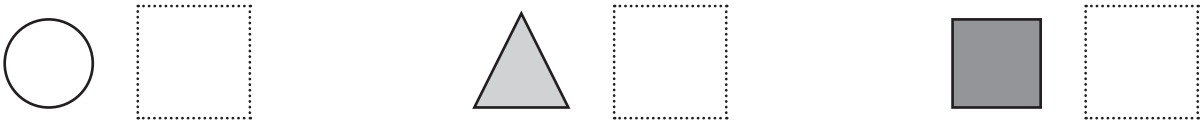


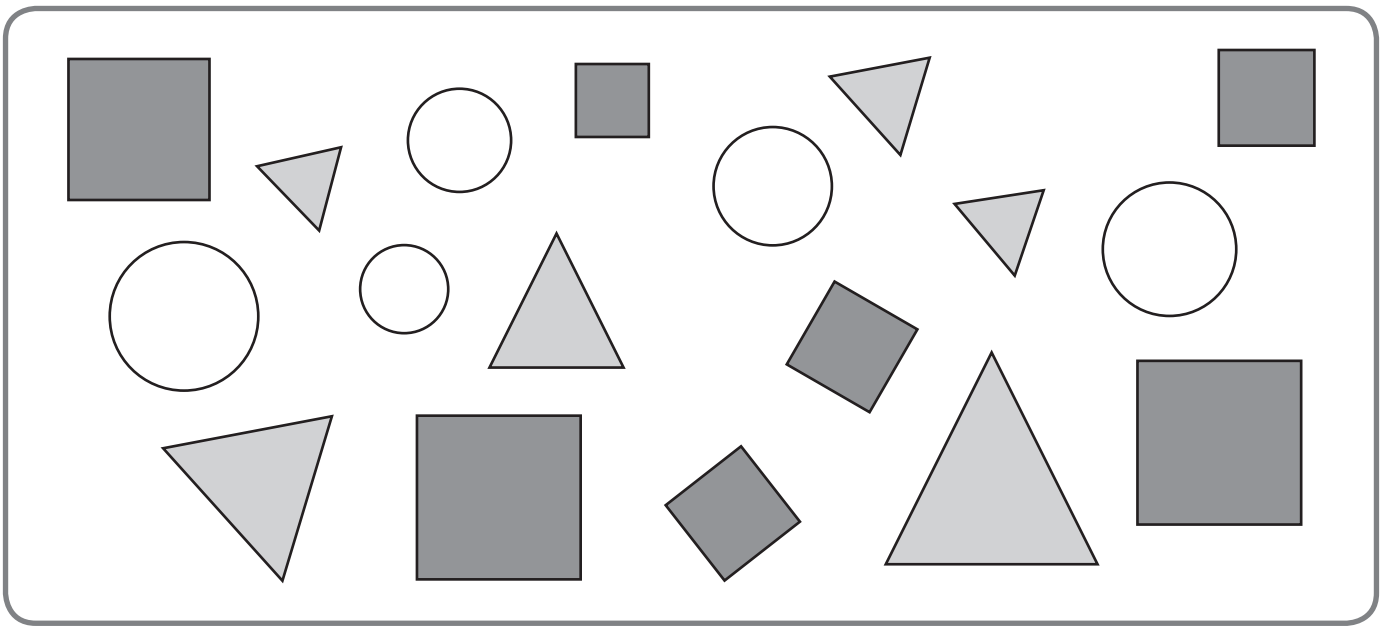
What to do next:

Sort them another way.

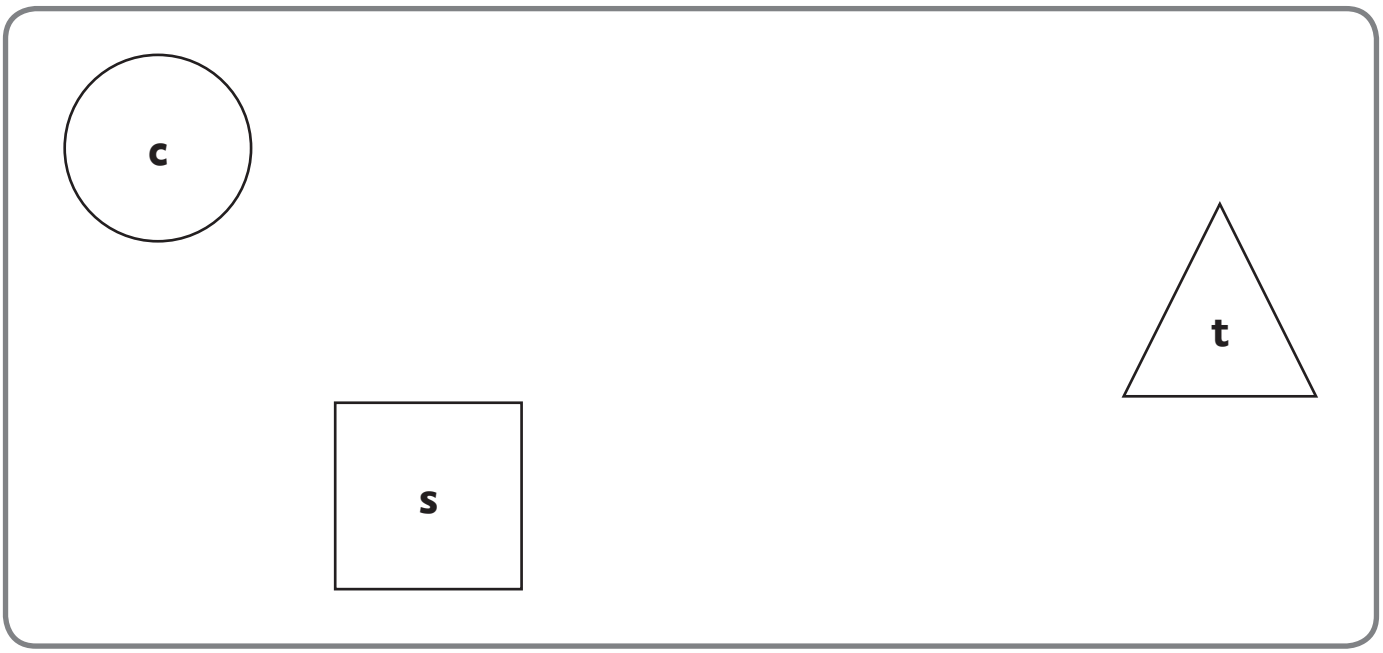
2D space – explore

1 How many of each shape are there?





2 Draw some more circles, squares and triangles in the box below. Ask a partner to write **t** in the triangles, **c** in the circles and **s** in the squares.

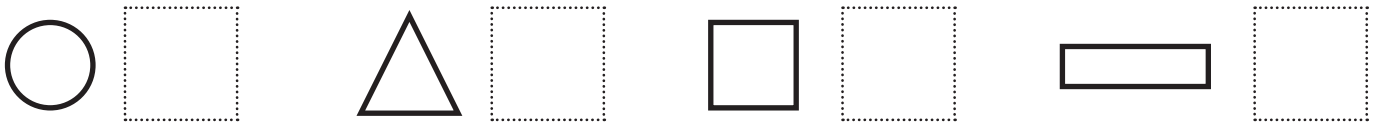


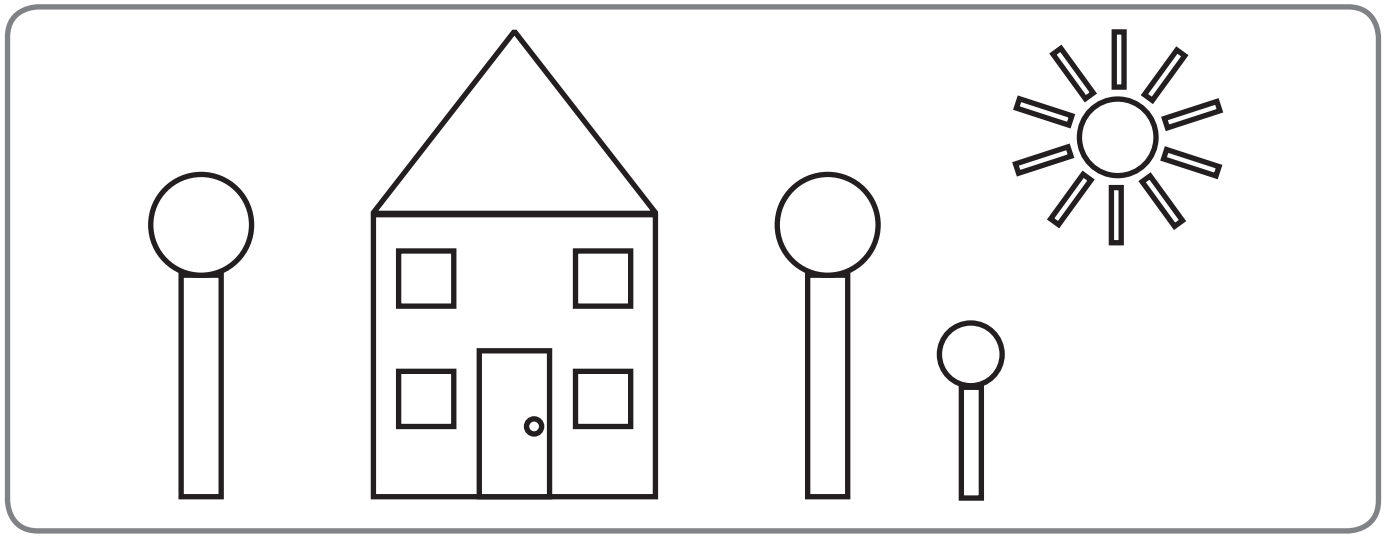
2D space – explore

You will need: attribute blocks

What to do:

Look at the picture. Count how many of each shape.





What to do next:

Create your own picture using attribute blocks.
Count and record how many of each block you used.

I used ...

2D space – explore

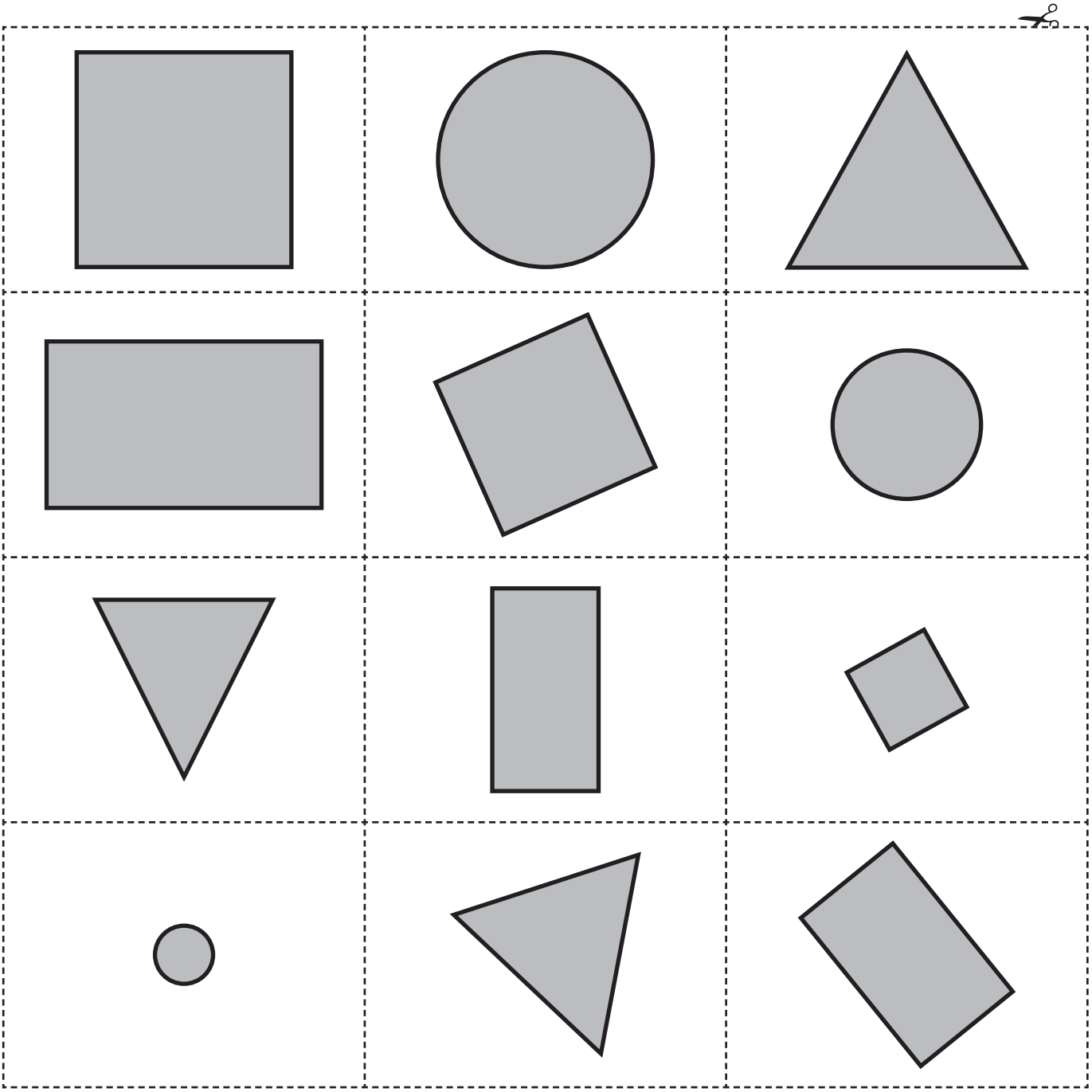
You will need: a partner scissors

C copy

What to do:

Cut out the shape cards. Combine your cards with your partner's cards and turn them face down.

Take turns turning over 2 cards. If the shapes match, you keep them. It is OK if they are different sizes or in different positions.

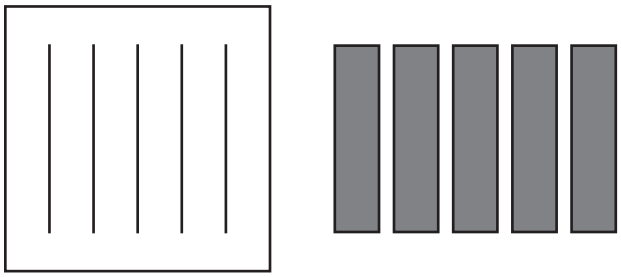


2D space – explore

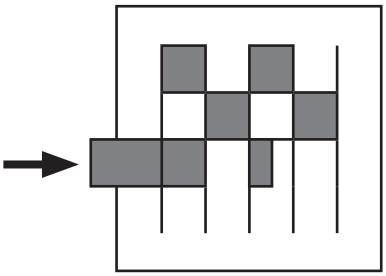
You will need: 2 paper squares in different colours glue stick

What to do:

Ask your teacher to make 5 cm cuts in one square like this and to cut the other square into 5 cm strips.



Weave your strips through the square, going over and under. Glue each strip at both ends or paste your weaving onto a square of black cardboard.



What to do next:

Join your weaving with those of your classmates to make a great big rug.

Talk with your teacher and classmates to answer these questions.

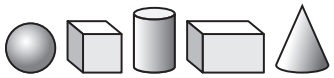
What shape is the rug?

How many big squares are in the rug?

How many small squares might there be?

3D space – language

group activity

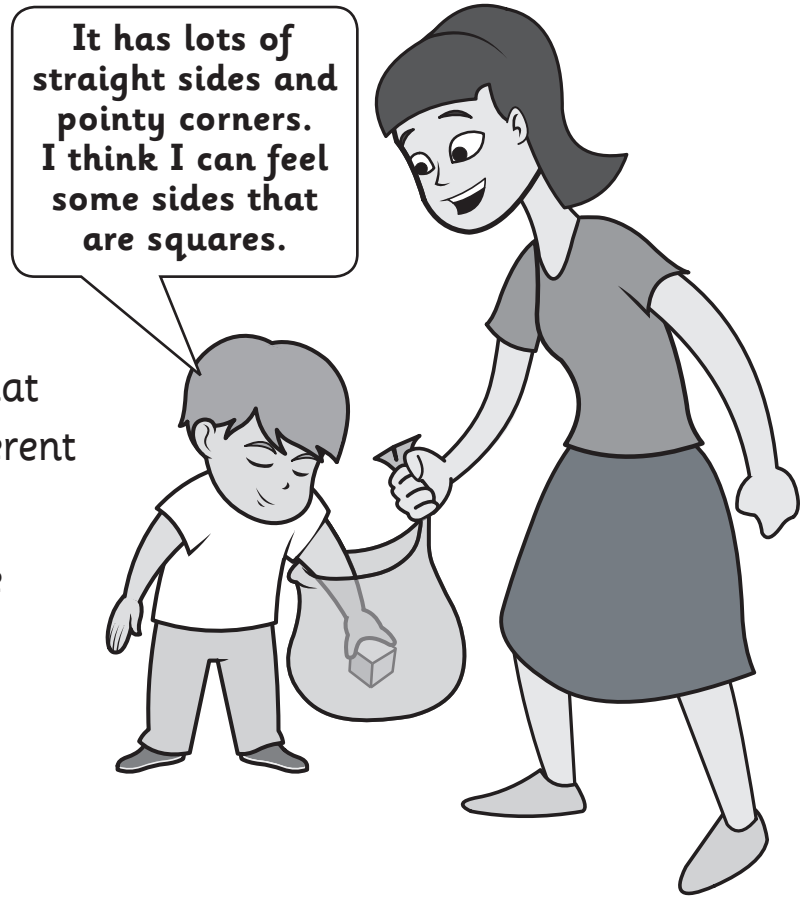
You will need:  partners  a bag  3D shapes

What to do:

Ask your teacher to secretly put a shape into the bag.

Take turns reaching into the bag and describing the shape you feel. You can talk about its corners, its faces, what it reminds you of, or how different parts of it feel.

Ask your teacher to record the words you use on a big chart.



What to do next:

Ask your teacher to read these mystery clues. Use the shapes to help you. Can you name the shapes?

I have no corners or edges.
I feel smooth.
I can roll.

I am a _____

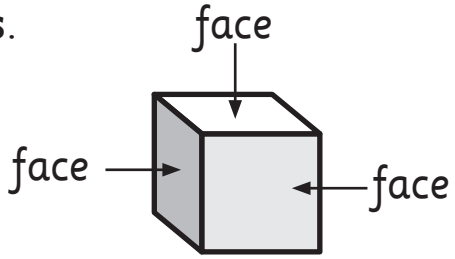
You find many of me in food cupboards.
I have straight sides.
I have corners.
My faces are rectangles.

I am a _____

3D space – language

You will need: markers, paper, glue stick, a cardboard box

3D shapes have ***faces***.



What to do:

Look at your box. Use your paper and markers to draw a face for each face of your box. Glue them on.

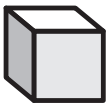
Count and number the faces on your box.

How many faces does it have?

How many faces does someone else's box have?

3D space – language

1 Write or tell someone what you call these shapes.
Draw an everyday object that is the same shape.

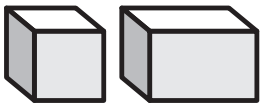


3D space – everyday objects

You will need: scissors, glue stick, a copy of page 19

What to do:

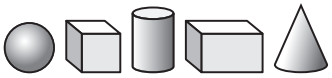
Cut out the pictures of the everyday objects on page 19. Sort and paste them into the right boxes below.



3D space – everyday objects

copy

3D space – explore

You will need:  a partner  3D shapes

 blocks and a plank

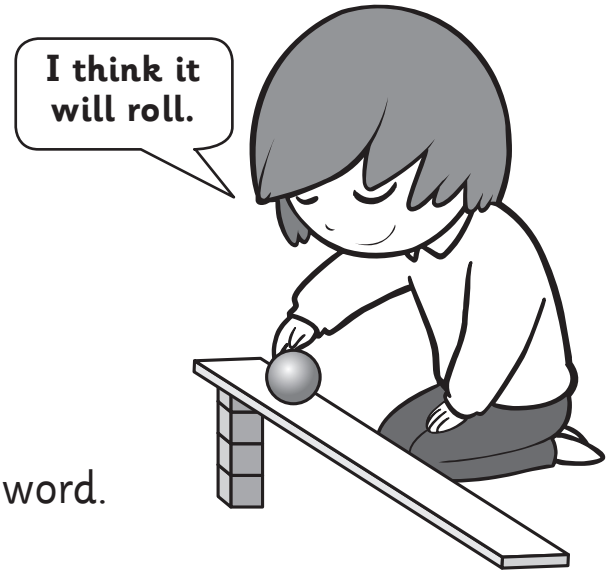
What to do:

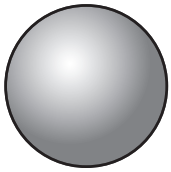
Build a slide out of your blocks and plank. A big, hard back book will also work as a slide.

Which shapes will roll?

Which shapes will slide?

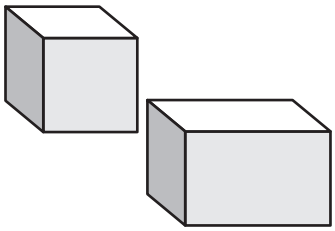
Test them out to see. Colour the right word.





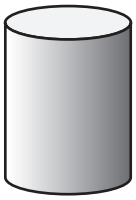
roll

slide



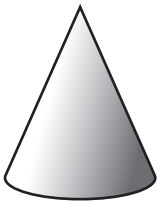
roll

slide



roll

slide



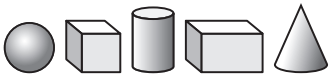
roll

slide

What to do:

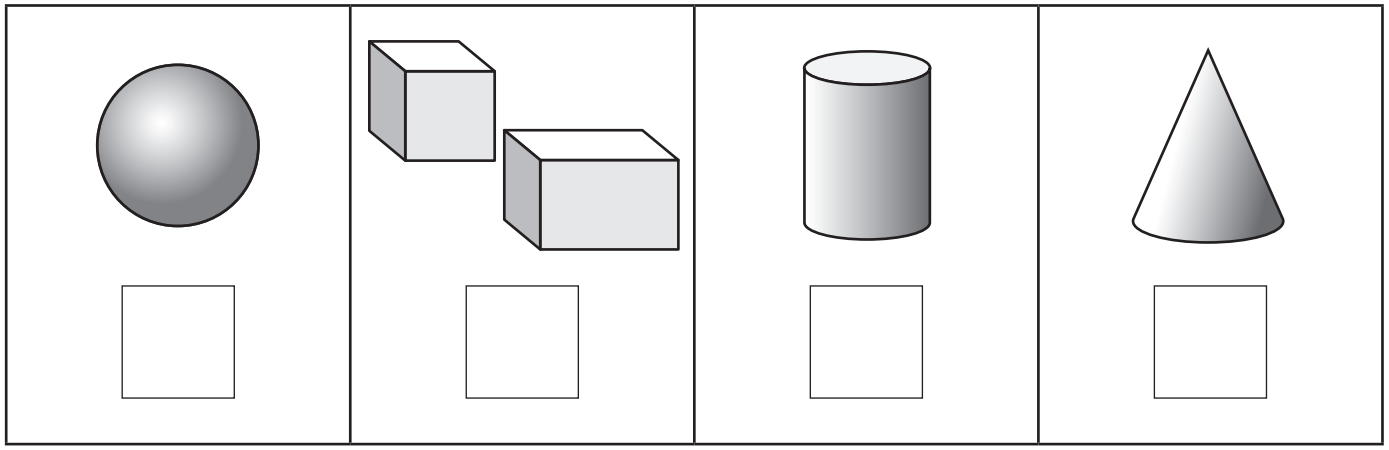
Will some shapes do both? Circle them if they do. Tell someone why you think that is.

3D space – explore

You will need:  a partner  3D shapes

What to do:

Which blocks stack well?
Test them out.
Tick the blocks that stack. Cross the blocks that don't.



What to do:

Choose the block you think will be best for building a tower.
Build it. How high can you go? Draw a picture of your tower.

3D space – explore

You will need:  smock  paint  paper

 a cardboard box

What to do:

Look at the faces on your box. What shapes do you think they are?

Carefully paint one face of your box and then print it onto your paper. Do the same for all of the box faces.

What shapes are there?

Does your box have different shaped faces or are they all the same?

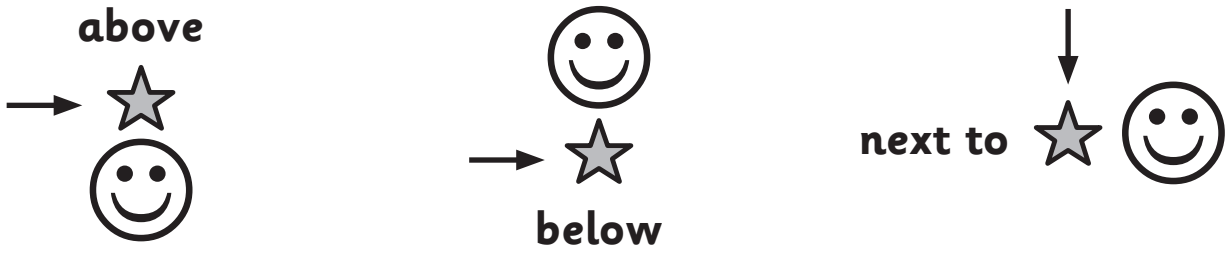
Ask your teacher to write your findings on your paper.

What to do next:

Choose a different box or a cylinder and find out what kind of faces it has.

Position – language

The star is



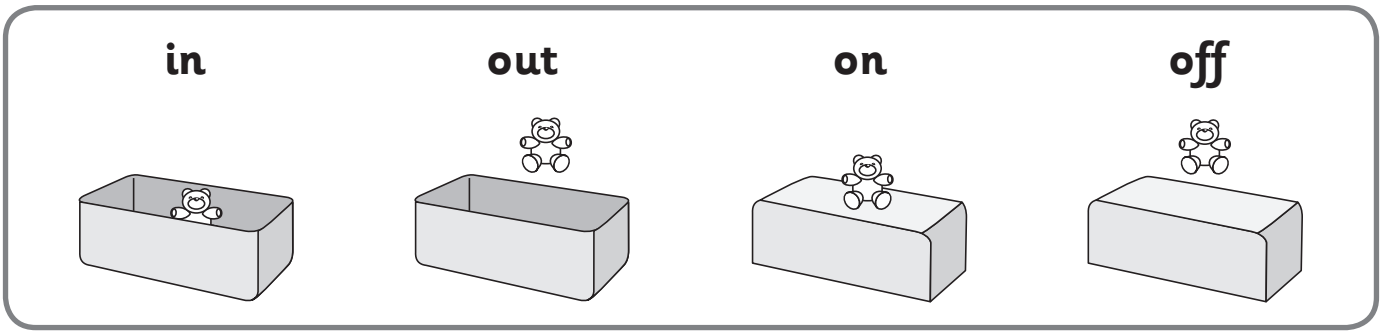
1 Draw an 

above the girl	**below** the girl	**next to** the girl
		

2 Draw:

- yourself **in the middle** of the box
- a friend **next to** you
- a plane **above** you
- a worm **below** you

Position – language



You will need: a partner, your lunchbox, a teddy or an animal counter, scissors

What to do:

Cut out the words. Mix them up and put them face down.
Take turns picking a card. Use your lunchbox and put your teddy in the right place. If your partner thinks you have done the right thing, you can keep the card. Play until all the cards are gone.

What to do next:

Ask your teacher if you can go out to the playground with your class.
Ask your teacher to tell you to get **on**, **off**, **in** or **out** of something.
Watch out, their instructions will be fast!

in	out	on	off
in	out	on	off

Position – language

You will need: a partner scissors

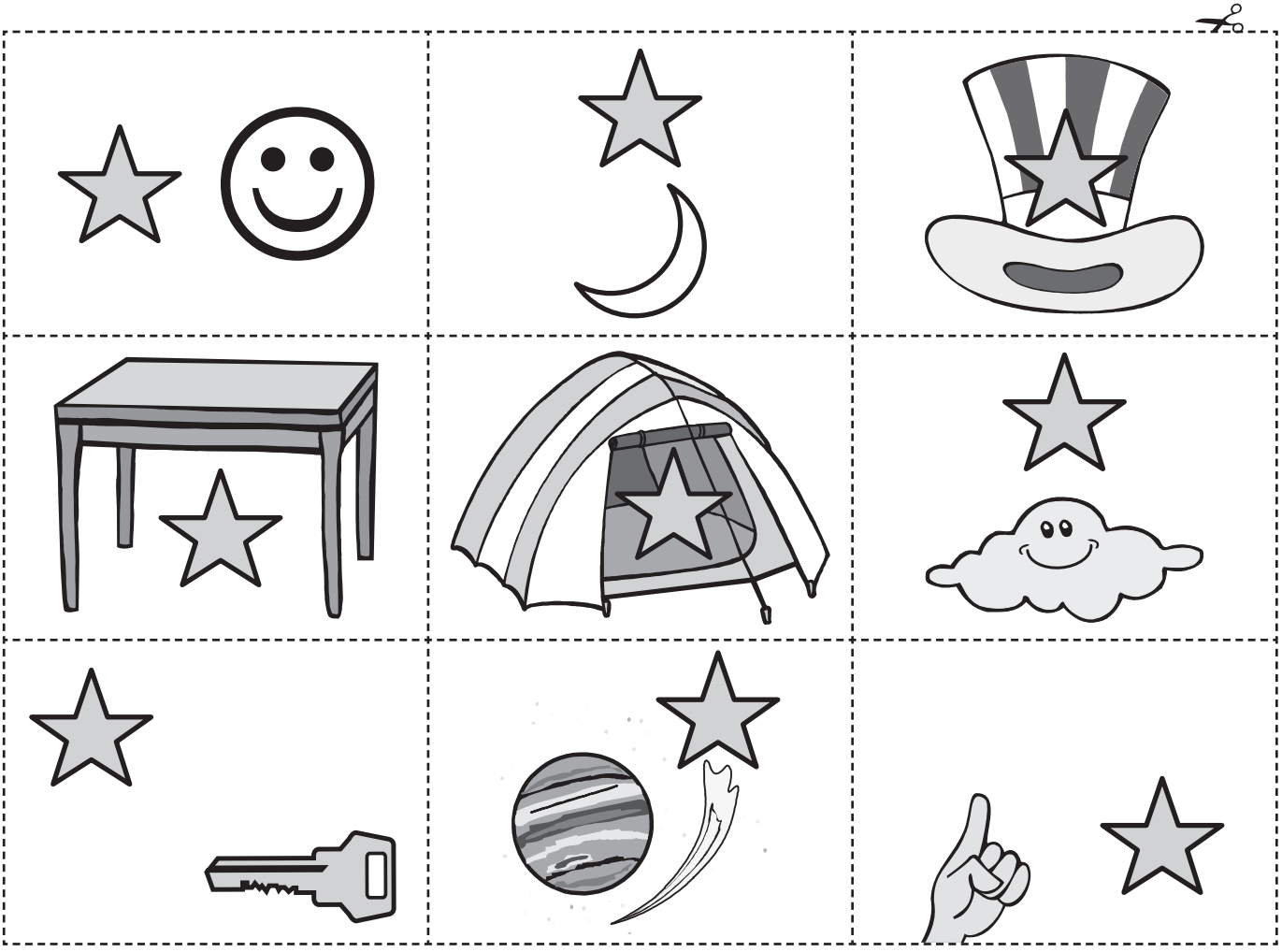
copy

What to do:

Cut out the cards. Put them in a pile, face down.
Take turns taking a card and telling your partner **where the star is** compared to the other object.
You could start your sentence with 'The star is …'. If your partner agrees that your sentence makes sense, take the card.
Play until all the cards are gone.

What to do next:

You could play again, this time saying where the star is **not**.



Position – language

1  Ask your teacher to read these instructions to you. Watch out, the picture will be a bit crazy!

- Draw a pig in **the middle** of the box.
- Draw clouds **underneath** the pig.
- Draw a tree **above** the pig.
- Draw a snake **next to** the pig.
- Draw a hat **on** the snake.
- Draw a sun **underneath** the snake.
- Draw a mouse ***far away*** from the snake.

Position – language

You will need:  your teacher or a helper

What to do:

The words below all tell us about **position** – where something is.

Your teacher will use these position words to tell you where to stand or how to move. They might say, 'Stand **next to** a chair', or 'Go **under** the table and **around** my chair'.

They will tick off the words you understand.

under ☐	over ☐	around ☐
above ☐	below ☐	along ☐
in front ☐	behind ☐	beside ☐
next to ☐	between ☐	side by side ☐
towards ☐	away from ☐	inside ☐
close to ☐	outside ☐	apart ☐

What to do next:

Find a partner and play the same game with each other.

Position – directions

What words do we use when we give directions to someone?

You will need:  a partner  another team

What to do:

You are going to direct people to get to a particular place. Decide with your partner where this is. It could be the library, the office or another classroom.

Practise going there with your partner and decide on the directions you will give people. You might say things like:

> 'Go **straight** down the hallway. Just **before** Mrs Lee's room, **turn** and go **out** the door ...'

Find another team and give them the directions. Were your directions right or did you have to change them a bit as you went?

What to do next:

Talk with others about all the different words we can use when we give directions. Ask your teacher to record them for you.