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This shows us what page to turn to.



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The first page of a lesson is a maths problem. Don't look at the next page until you have had a go! The third and fourth pages give you practice, so you can check your understanding.



Recognising 2D and 3D shapes

Discover




- 1 a) The children have made pictures using 2D shapes.
Which picture did Mia make?
- b) Which picture did Sunil make?



Share

- a) Mia's picture has two squares.

Which picture has two squares?

I think squares look like this .

No. That is a rectangle but not a square. A square is a rectangle where all the sides are the same length. Rectangles and squares are **quadrilaterals** because they have four sides.



This is Mia's picture.



- b) This is Sunil's picture.



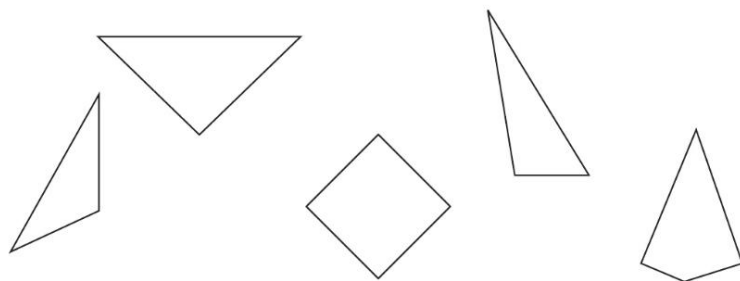
A triangle can be printed in different ways. Remember that a triangle that appears to be upside-down is still a triangle.



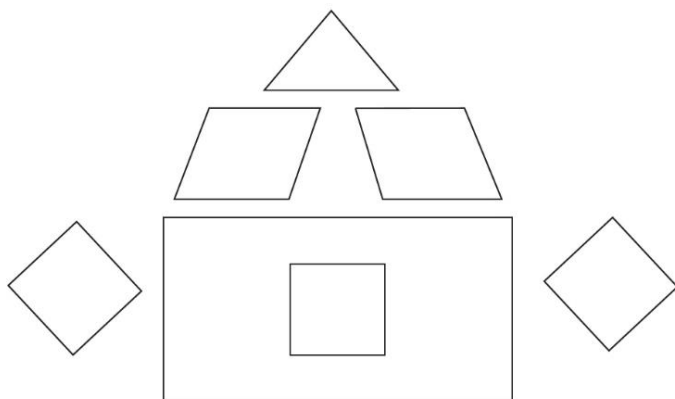
Lesson 1

Recognising 2D and 3D shapes

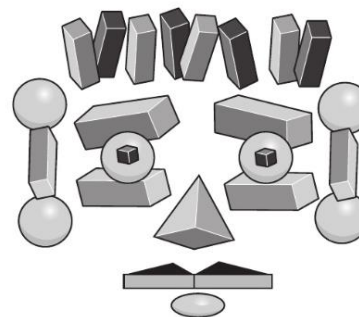
1 a) Colour in all the triangles.



b) Colour in all the squares.



2 How many cuboids, pyramids and spheres are there in this picture?



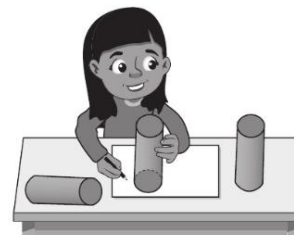
There are cuboids.

There are pyramids.

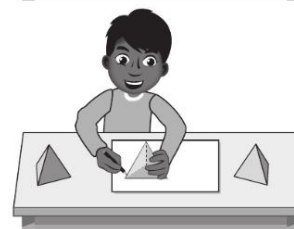
There are spheres.

3 Sara and Ibrahim are drawing around 3D shapes.

Write the name of the 2D shape each child will draw.



Sara will draw a _____ .



Ibrahim will draw a _____ .

Counting faces on 3D shapes

Discover



- 1 a) Ben paints every face of the box a different colour.
How many colours will he need?
- b) Describe the shape of each face.

Share

a)



A face is a flat surface on a 3D shape. Each face is a 2D shape.



A cuboid has three pairs of faces.



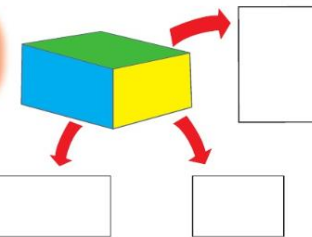
A cuboid has six faces in total.



Ben will need six different colours.

b) The shape of each face is a rectangle.

This 3D shape is a cuboid.



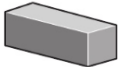



A cuboid can have two square faces.

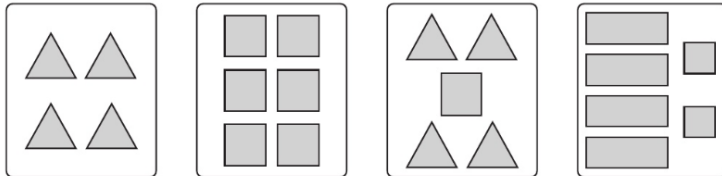


Counting faces on 3D shapes

1 Complete the table.

Shape	Name	Number of faces
	_u_e	
	p_r_m_d	
	cu_oi_	
	py_a_ _d	
	s_ _e_e	0

2 Match each 3D shape to its faces



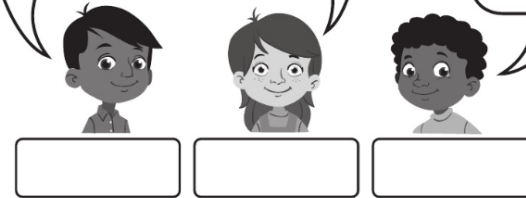
3 Write the letters of the shapes each child could have.



I have three shapes. They are all the same. In total there are 18 faces.

I have three shapes. They are all the same. In total there are 12 faces.

I have three different shapes. In total there are 15 faces.



4 Complete each sentence.



A _____ has two circle faces and curved surface.

A _____ has 0 faces and curved surface.

A _____ and a _____ both have 1 circle face and 1 curved surface.

Sorting 2D shapes

Discover




- 1 a) Which shape will **not** go in either box?
- b) Which shape has the most vertices?

Share

- a) These shapes have all got blue stripes so they go in this box.

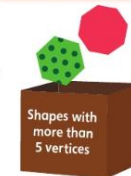



I want to make sure about this shape . It has blue stripes, but it also has a lot of vertices.

It has five vertices, but the shapes have to have **more** than five to go in the other box.





These shapes have more than five vertices so they go in this box.



This shape does not have blue stripes and it does not have more than five vertices. 

The yellow triangle will not go in either box.

- b) This shape  has six vertices. It is called a hexagon.
This shape  has eight vertices. It is called an **octagon**.
Eight is greater than six ($8 > 6$).
The red octagon has the most vertices.



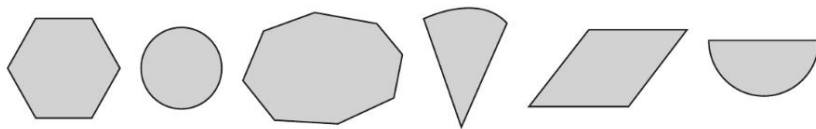
These shapes have more vertices than the other shapes.

Sorting 2D shapes

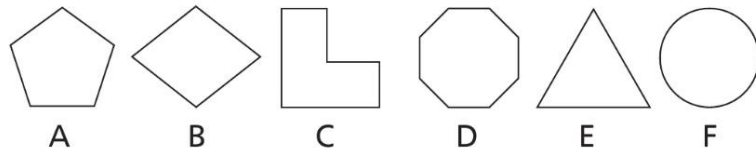
1 Match each shape to the correct group.

Polygons

Not polygons

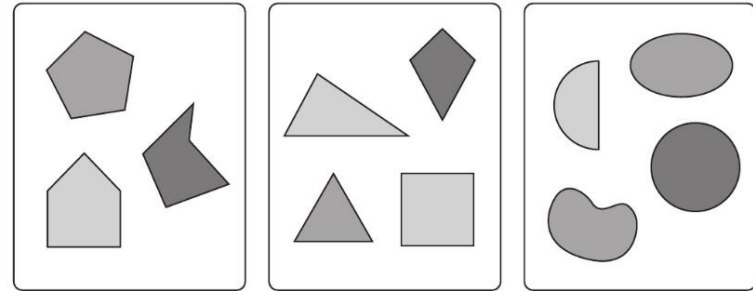


2 Sort these shapes into order by number of vertices, from the fewest number of vertices to the most.



Fewest _____ Most

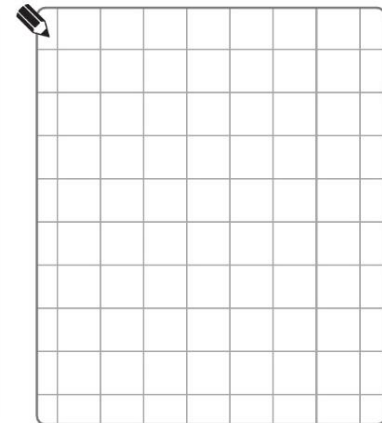
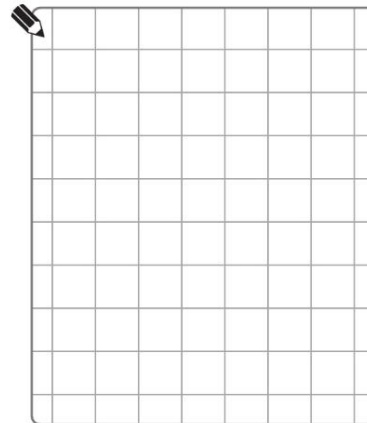
3 Write labels for these groups.



4 Draw two different shapes to go in each group.

Odd number of vertices

Even number of vertices



Making patterns with 2D shapes

Discover

1 2 3 4 5 6 7 8 9 10 11 12

■ ● ◆ ● ■ ● ◆ ● ■ ● ? ?

Complete the pattern using one of these options.

A: ◆ ▲ C: ◆ ●

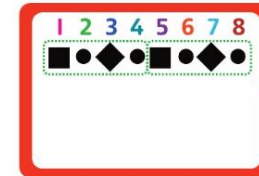
B: ■ ● D: ● ■

- 1 a) Which is the correct option to complete the pattern?
- b) What shape would be in position 20?

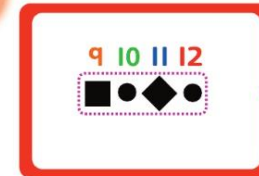
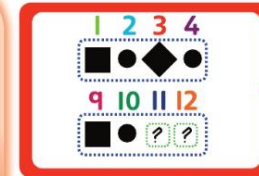
Share

- a) The options are A ◆ ▲,
B ■ ●, C ◆ ● and
D ● ■.

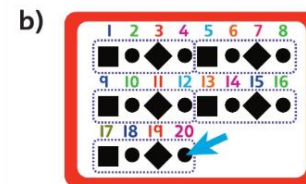
Four shapes are repeated to make the pattern.



To work out the answer, find the part of the pattern that repeats. Then compare the repeating pattern to find the missing shapes.



Option C ◆ ● is correct.



The 20th shape must be a circle.

I know it cannot be A because there are no triangles in the pattern.



I will now compare the repeating part to find the missing shapes.



I can see that the even numbers always have a circle.



Lesson 4

Making patterns with 2D shapes

1 Show the repeating part of each pattern.

The first one has been done for you.

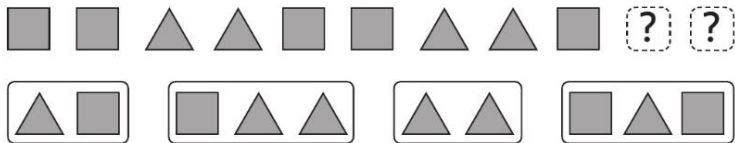
a) 

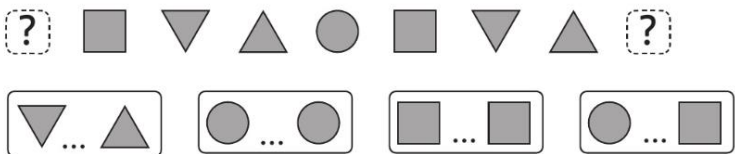
b) 

c) 

d) 

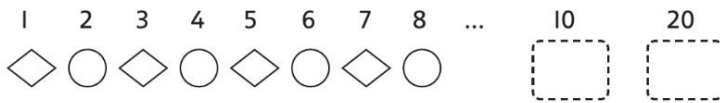
2 Circle the shapes that complete the patterns.

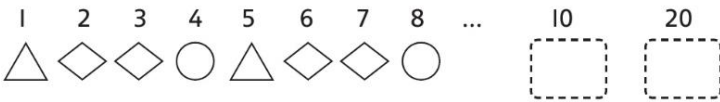
a) 

b) 

3 Draw the shapes that would be in 10th position and 20th position for each pattern.



1 2 3 4 5 6 7 8 ... 10 20


1 2 3 4 5 6 7 8 ... 10 20


1 2 3 4 5 6 7 8 ... 10 20


4 Draw the next four shapes.



