

# Reasoning and Problem Solving

## Step 4: Recognise 2D and 3D Shapes

### National Curriculum Objectives:

Mathematics Year 2: (2G1a) [Compare and sort common 2-D shapes and everyday objects](#)

Mathematics Year 2: (2G1b) [Compare and sort common 3-D shapes and everyday objects](#)

### Differentiation:

Questions 1, 4 and 7 (Reasoning)

**Developing** Explain if a statement about 2 shapes is correct. Includes shapes in different orientations.

**Expected** Explain if a statement about 3 shapes is correct. Includes familiar shapes in different styles.

**Greater Depth** Explain if a statement about 4 shapes is correct. Includes shapes of similar appearance in different styles.

Questions 2, 5 and 8 (Reasoning)

**Developing** Explain the mistake made when labelling 2 shapes.

**Expected** Explain the mistake made when labelling 3 shapes.

**Greater Depth** Explain the mistake made when labelling 5 shapes. Includes one or more shapes in each category.

Questions 3, 6 and 9 (Problem Solving)

**Developing** Sort 3 shapes into the correct places in a Venn diagram.

**Expected** Sort 5 shapes into the correct places in a Venn diagram.

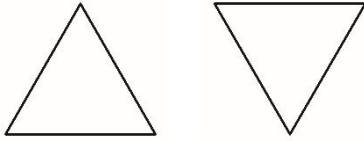
**Greater Depth** Sort 5 shapes into the correct places in a Venn diagram. Includes one shape which does not fit any category.

More [Year 2 and Year 3 Shape, Position and Direction](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

# Reasoning and Problem Solving – Recognise 2D and 3D Shapes

1a. Look at the shapes below.



Jay says,



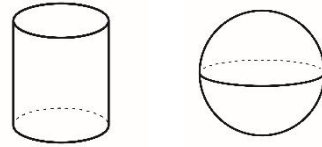
Both of the shapes are triangles.

Is he correct? Explain why.



2 R

1b. Look at the shapes below.



Bella says,



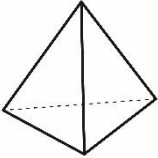

Both of the shapes are cylinders.

Is she correct? Explain why.



2 R

2a. Alia has been labelling shapes but she has made a mistake.

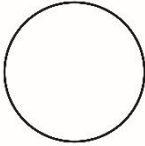
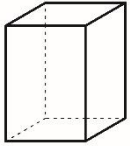
Square	Pyramid
	

Explain what she has done wrong.



2 R

2b. Max has been labelling shapes but he has made a mistake.

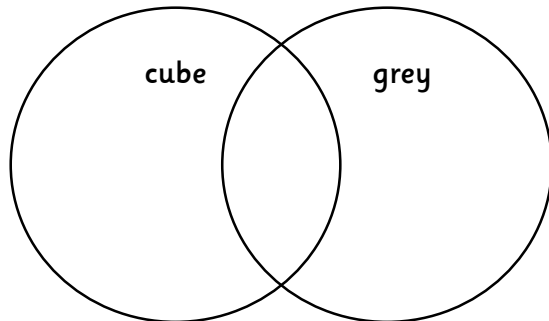
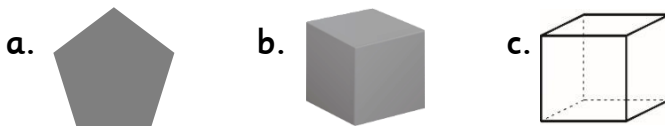
Triangle	Cuboid
	

Explain what he has done wrong.



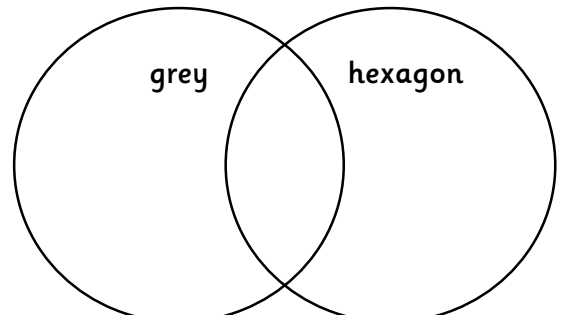
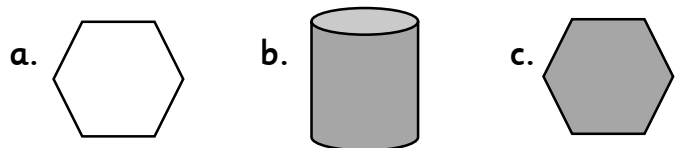
2 R

3a. Sort the shapes below.



2 PS

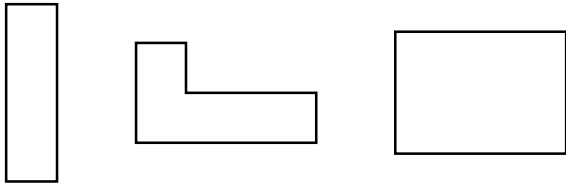
3b. Sort the shapes below.



2 PS

# Reasoning and Problem Solving – Recognise 2D and 3D Shapes

4a. Look at the shapes below.



Harry says,



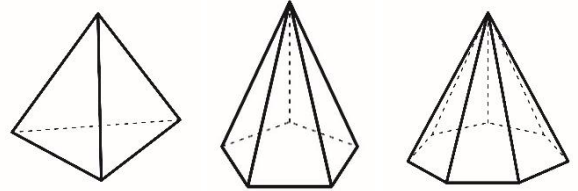
All of the shapes are rectangles.

Is he correct? Explain why.



2 R

4b. Look at the shapes below.



Alice says,



All of the shapes are pyramids.

Is she correct? Explain why.



2 R

5a. Lila has been labelling shapes but she has made some mistakes.

Circle	Sphere	Cylinder

Explain what she has done wrong.



2 R

5b. Jaiden has been labelling shapes but he has made some mistakes.

Rectangle	Cube	Cuboid

Explain what he has done wrong.



2 R

6a. Sort the shapes below.

a.      b.      c.

d.      e.

Two overlapping circles. The left circle is labeled 'cuboid' and the right circle is labeled 'grey'. The intersection of the two circles is empty.



2 PS

6b. Sort the shapes below.

a.      b.      c.

d.      e.

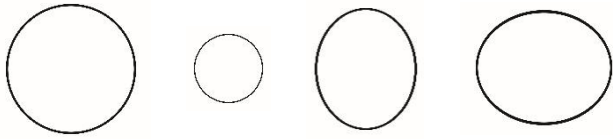
Two overlapping circles. The left circle is labeled 'grey' and the right circle is labeled 'triangle'. The intersection of the two circles is empty.



2 PS

# Reasoning and Problem Solving – Recognise 2D and 3D Shapes

7a. Look at the shapes below.



Sven says,



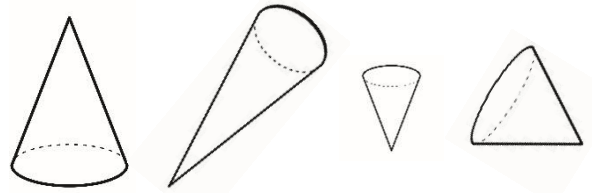
All of the shapes are circles.

Is he correct? Explain why.



2 R

7b. Look at the shapes below.



Georgia says,



All of the shapes are cones.

Is she correct? Explain why.



2 R

8a. Zara has been labelling shapes but she has made some mistakes.

Pyramid	Cone	Triangle

Explain what she has done wrong.



2 R

8b. Alfie has been labelling shapes but he has made some mistakes.

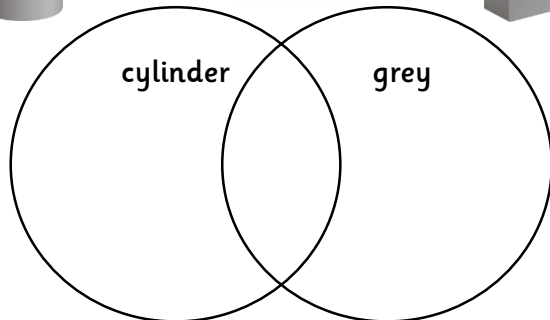
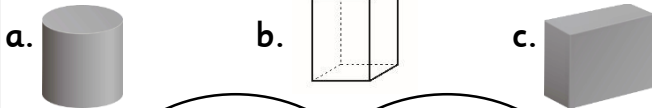
Square	Cuboid	Cylinder

Explain what he has done wrong.



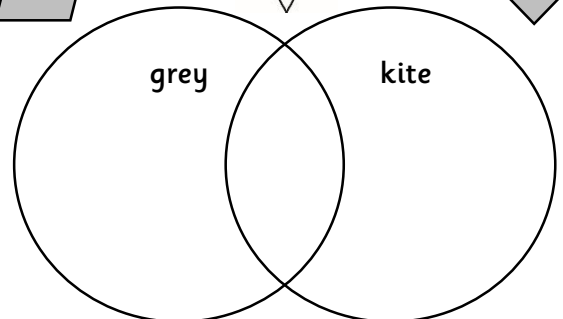
2 R

9a. Sort the shapes below. Which is the odd one out?



2 PS

9b. Sort the shapes below. Which is the odd one out?

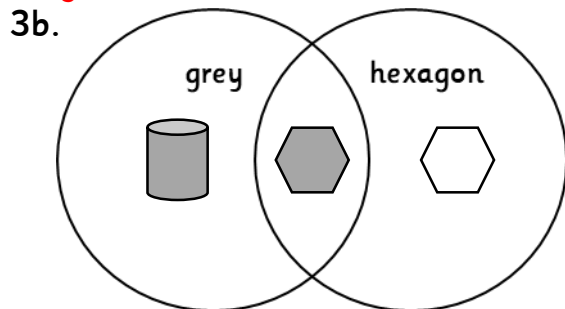
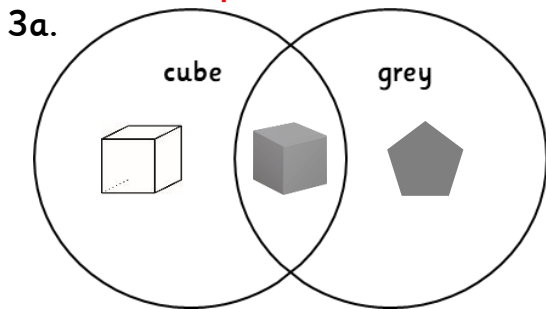


2 PS

# Reasoning and Problem Solving – Recognise 2D and 3D Shapes

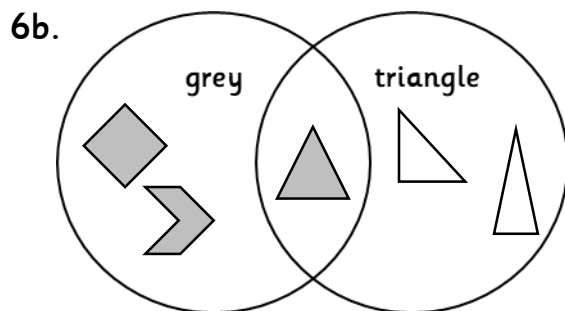
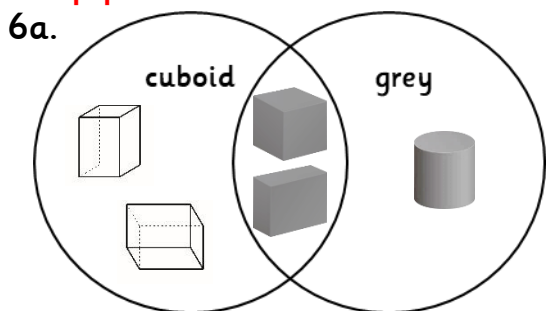
## Developing

- 1a. Jay is correct. Both of the shapes are triangles in different positions.  
1b. Bella is incorrect. The first shape is a cylinder but the second shape is a sphere.  
2a. Alia has put the square and the pyramid in the wrong places. They need to swap.  
2b. Max has put a circle with the label 'triangle'.



## Expected

- 4a. Harry is incorrect. The shape in the middle is an irregular hexagon.  
4b. Alice is correct. All of the shapes are pyramids with different bases.  
5a. Lila has put the circle and the sphere in the wrong places. They need to swap.  
5b. Jaiden has put the cuboid and the rectangle in the wrong places. They need to swap places.



## Greater Depth

- 7a. Sven is incorrect. The first two shapes are circles but the last two shapes are ovals.  
7b. Georgia is correct. All of the shapes are cones in different sizes and positions.  
8a. Zara has put a triangle with the label 'cone' and a pyramid with the label 'triangle'.  
8b. Alfie has put a cube with the label 'cylinder' and a cuboid with the label 'cylinder'.

