

Reasoning and Problem Solving

Step 7: Measure Perimeter

National Curriculum Objectives:

Mathematics Year 3: (3M7) [Measure the perimeter of simple 2-D shapes](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Identify and explain which shape is the odd one out. Includes measuring the perimeter of rectangles.

Expected Identify and explain which shape is the odd one out. Includes measuring the perimeter of rectilinear shapes with 6 sides.

Greater Depth Identify and explain which shape is the odd one out. Includes measuring the perimeter of rectilinear shapes with 8 sides and converting measurements (mm to cm).

Questions 2, 5 and 8 (Problem Solving)

Developing Work out the missing length of a rectangle when given its perimeter. Includes rectangles made from cm squares.

Expected Work out the missing lengths of a rectilinear shape when given its perimeter. Includes rectilinear shapes with 6 sides made from cm squares.

Greater Depth Work out the missing lengths of a rectilinear shape when given its perimeter. Includes rectilinear shapes with 8 sides which are not made from cm squares and converting measurements (mm to cm).

Questions 3, 6 and 9 (Reasoning)

Developing Use given measurements to explain which shape has been drawn by which character. Includes rectangles only.

Expected Use given measurements to explain which shape has been drawn by which character. Includes rectilinear shapes with 6 sides.

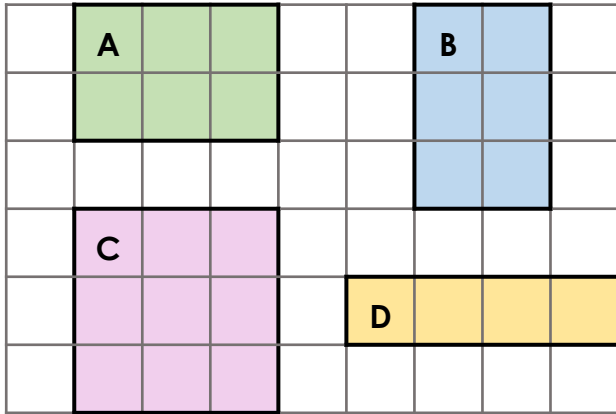
Greater Depth Use given measurements to explain which shape has been drawn by which character. Includes rectilinear shapes with 8 sides and converting measurements (mm to cm).

[More resources](#) which follow the same small steps as White Rose.

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

Measure Perimeter

1a. Circle the odd one out.



Explain your choice.

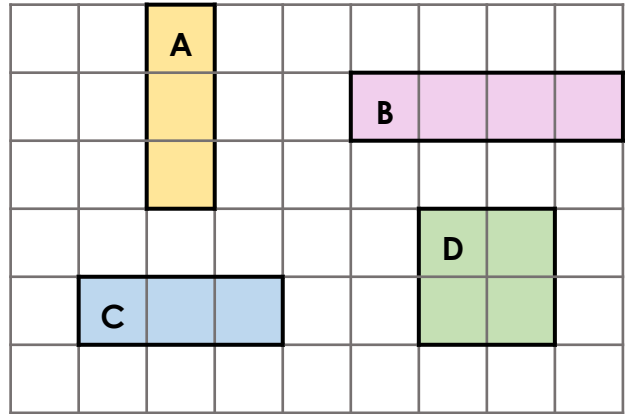
cm squares not to scale



R

Measure Perimeter

1b. Circle the odd one out.



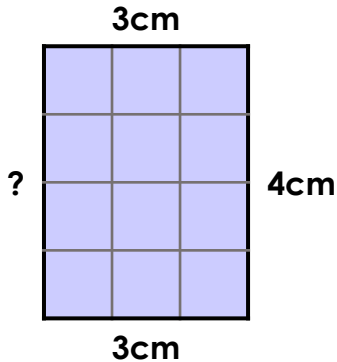
Explain your choice.

cm squares not to scale



R

2a. The perimeter of the shape below is 14cm.



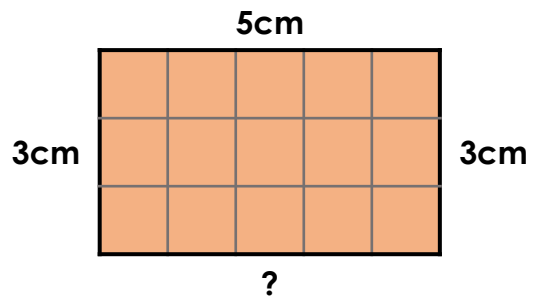
How long is the missing side?

cm squares not to scale



PS

2b. The perimeter of the shape below is 16cm.



How long is the missing side?

cm squares not to scale



PS

3a. Tom and Ann each draw a shape.



The measurements for Tom's shape are: 1cm, 3cm, 1cm, 3cm.

The measurements for Ann's shape are: 4cm, 2cm, 4cm, 2cm.

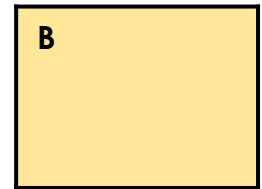
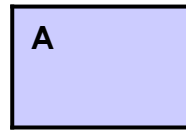
Which shape did they each draw?
Convince me.



cm squares not to scale

R

3b. Ben and Kath each draw a shape.



The measurements for Ben's shape are: 3cm, 2cm, 3cm, 2cm.

The measurements for Kath's shape are: 4cm, 3cm, 4cm, 3cm.

Which shape did they each draw?
Convince me.

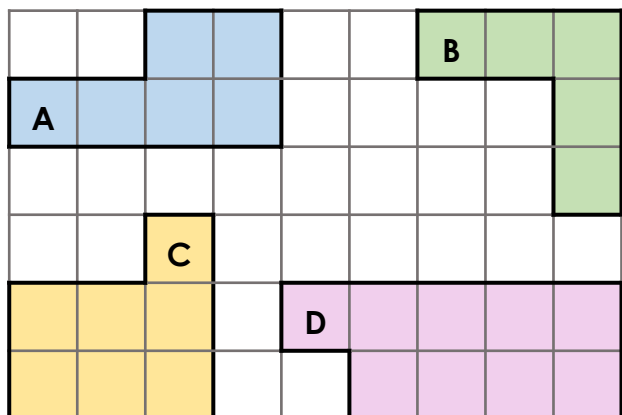


cm squares not to scale

R

Measure Perimeter

4a. Circle the odd one out.



Explain your choice.

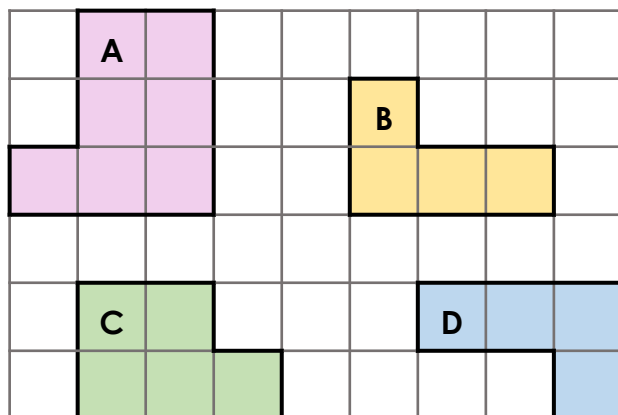
cm squares not to scale



R

Measure Perimeter

4b. Circle the odd one out.



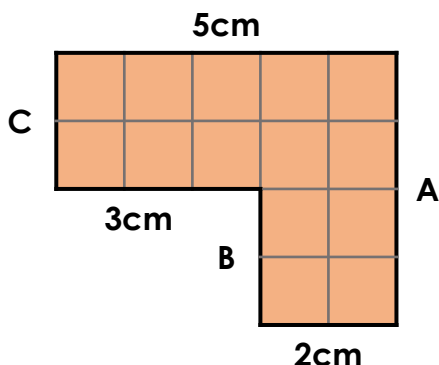
Explain your choice.

cm squares not to scale



R

5a. The perimeter of the shape below is 18cm.



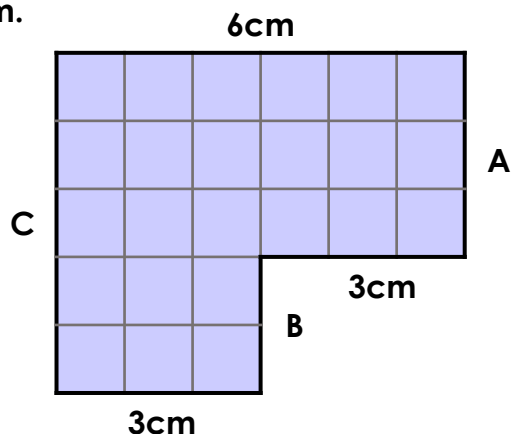
How long are the missing sides?

cm squares not to scale



PS

5b. The perimeter of the shape below is 22cm.



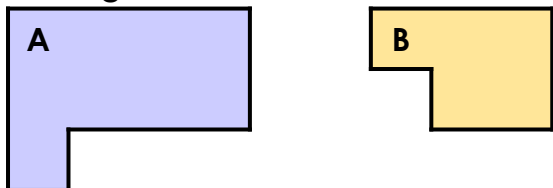
How long are the missing sides?

cm squares not to scale



PS

6a. Greg and Sarah each draw a shape.



The measurements for Greg's shape are: 4cm, 2cm, 3cm, 1cm, 1cm, 3cm.

The measurements for Sarah's shape are: 3cm, 2cm, 2cm, 1cm, 1cm, 1cm.

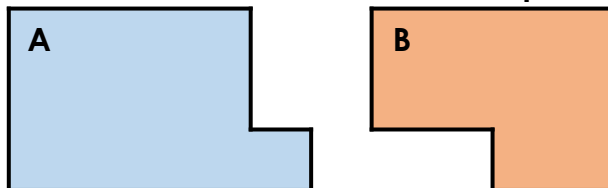
Which shape did they each draw?
Convince me.

cm squares not to scale



R

6b. Eric and Bella each draw a shape.



The measurements for Eric's shape are: 4cm, 2cm, 1cm, 1cm, 5cm, 3cm.

The measurements for Bella's shape are: 4cm, 3cm, 2cm, 1cm, 2cm, 2cm.

Which shape did they each draw?
Convince me.

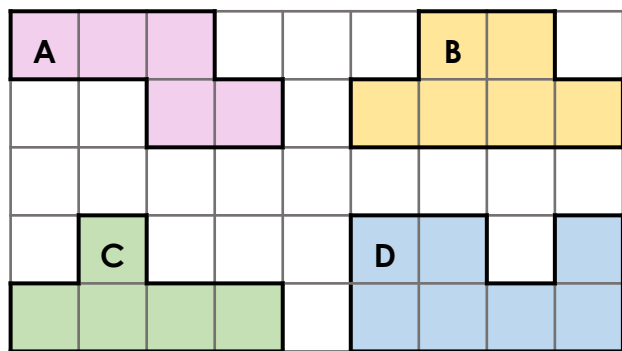
cm squares not to scale



R

Measure Perimeter

7a. Circle the odd one out.



Explain your choice, describing the perimeter of the shapes in millimetres.

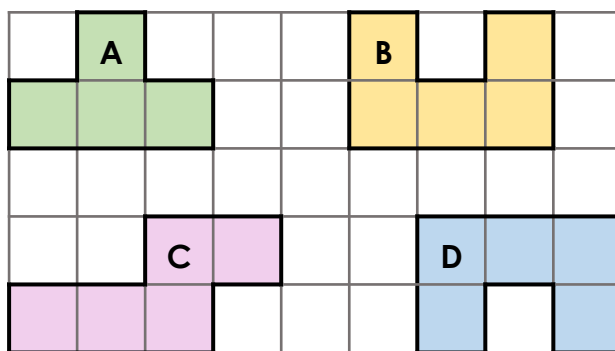


cm squares not to scale

R

Measure Perimeter

7b. Circle the odd one out.



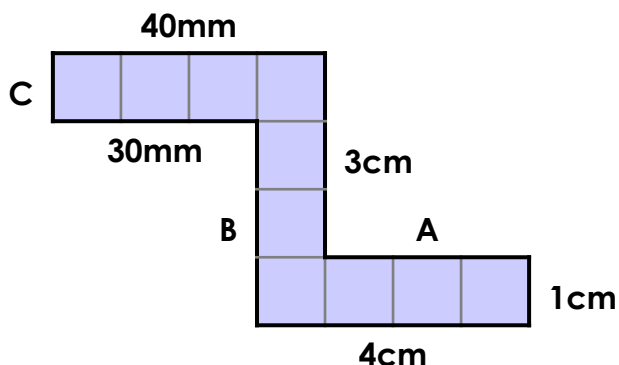
Explain your choice, describing the perimeter of the shapes in millimetres.



cm squares not to scale

R

8a. The perimeter of the shape below is 22cm.



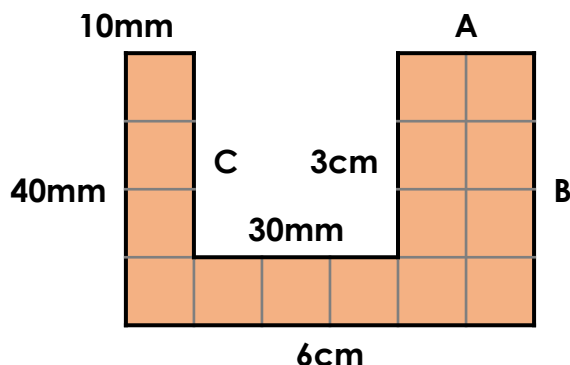
How long are the missing sides?
Give your answers in mm.



cm squares not to scale

PS

8b. The perimeter of the shape below is 26cm.



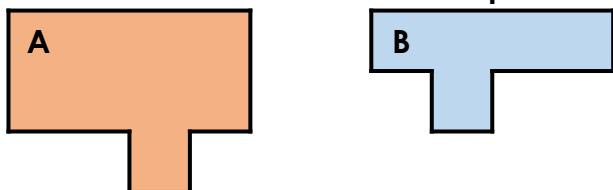
How long are the missing sides?
Give your answers in mm.



cm squares not to scale

PS

9a. Ali and Lisa each draw a shape.



Ali's measurements are: 4cm, 20mm, 1cm, 10mm, 1cm, 10mm, 2cm, 20mm.

Lisa's measurements are: 40mm, 1cm, 20mm, 1cm, 10mm, 1cm, 10mm, 1cm.

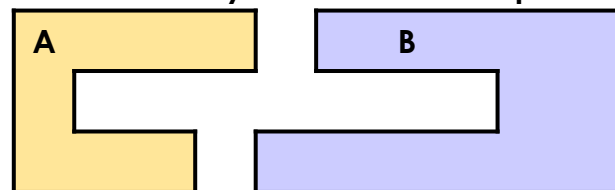
Which shape did they each draw?
Convince me.



cm squares not to scale

R

9b. Dan and Fay each draw a shape.



Dan's measurements are: 50mm, 3cm, 60mm, 1cm, 40mm, 1cm, 30mm, 1cm.

Fay's measurements are: 4cm, 10mm, 3cm, 10mm, 2cm, 10mm, 3cm, 30mm.

Which shape did they each draw?
Convince me.



cm squares not to scale

R

Reasoning and Problem Solving Measure Perimeter

Developing

- 1a. C because the other shapes have a 10cm perimeter.
- 2a. 4cm
- 3a. Ann drew A and Tom drew B. Ann's measurements give a 12cm perimeter and Tom's give an 8cm perimeter. A has a longer perimeter than B.

Expected

- 4a. D because the other shapes have a 12cm perimeter.
- 5a. A = 4cm, B = 2cm, C = 2cm
- 6a. Greg drew A and Sarah drew B. Greg's measurements give a 14cm perimeter and Sarah's give a 10cm perimeter. A has a longer perimeter than B.

Greater Depth

- 7a. D because the other shapes have a 120mm perimeter.
- 8a. A = 30mm, B = 30mm, C = 10mm
- 9a. Ali drew A and Lisa drew B. Ali's measurements give a 14cm perimeter and Lisa's give a 12cm perimeter. A has a longer perimeter than B.

Reasoning and Problem Solving Measure Perimeter

Developing

- 1b. B because the other shapes have an 8cm perimeter.
- 2b. 5cm
- 3b. Ben drew A and Kath drew B. Ben's measurements give a 10cm perimeter and Kath's give a 14cm perimeter. B has a longer perimeter than A.

Expected

- 4b. A because the other shapes have a 10cm perimeter.
- 5b. A = 3cm, B = 2cm, C = 5cm
- 6b. Eric drew A and Bella drew B. Eric's measurements give a 16cm perimeter and Bella's give a 14cm perimeter. A has a longer perimeter than B.

Greater Depth

- 7b. A because the other shapes have a 120mm perimeter.
- 8b. A = 20mm, B = 40mm, C = 30mm
- 9b. Fay drew A and Dan drew B. Fay's measurements give an 18cm perimeter and Dan's give a 24cm perimeter. B has a longer perimeter than A.