Similar shapes

Notes and guidance

In this small step, children build on the previous step to explore similar shapes. Similar shapes are defined as shapes where corresponding sides are in the same proportion and the corresponding angles are equal, so if one shape is an enlargement of the other, the two shapes are similar. When testing for similarity, encourage children to work systematically around a shape to ensure that all sides have been enlarged by the same scale factor.

Children can explore the relationship between corresponding angles in the shapes, practising protractor skills learnt in Year 5. Finally, children should apply this understanding to explore similar shapes that are in different orientations, identifying corresponding sides and angles to decide if the shapes are similar.

Things to look out for

- If shapes are in different orientations, children may struggle to identify corresponding sides or just believe the shapes cannot be similar because they do not look the same.

- It is important that children work systematically to ensure all corresponding sides are in the same proportion, rather than just one or two.

Key questions

- What do you think "similar" means?

- What is the scale factor of the enlargement?

- Have all the sides been enlarged by the same amount?

- What are corresponding sides? Can you identify the corresponding sides in these two shapes?

- What do you notice about corresponding angles in similar shapes?

- Does it matter that the shapes are in a different orientation?

Possible sentence stems

- Each side of the shape is _____ times the size, so the shape has been enlarged by a scale factor of _____ . Therefore, the shapes are _____

- I know that the shapes are similar, because the corresponding sides have been enlarged by the same _____ , and the corresponding angles are _____

National Curriculum links

- Solve problems involving similar shapes where the scale factor is known or can be found

Similar shapes

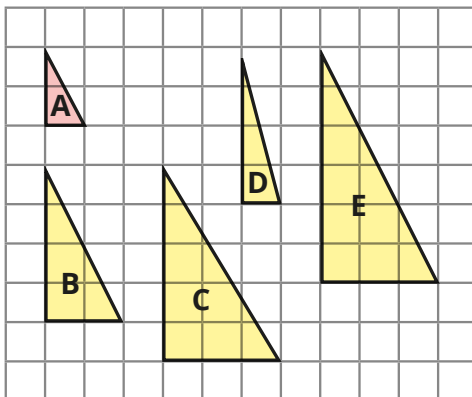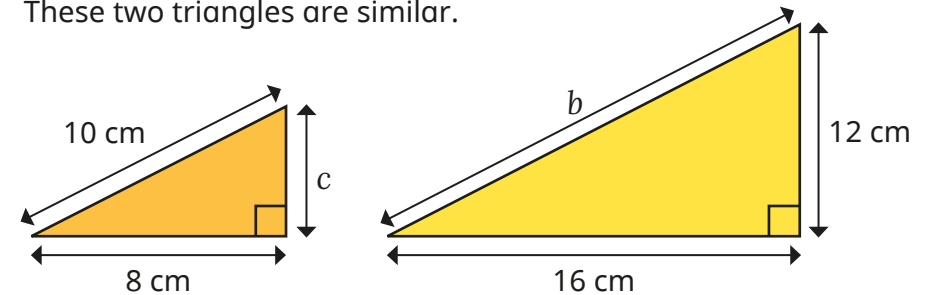## Key learning

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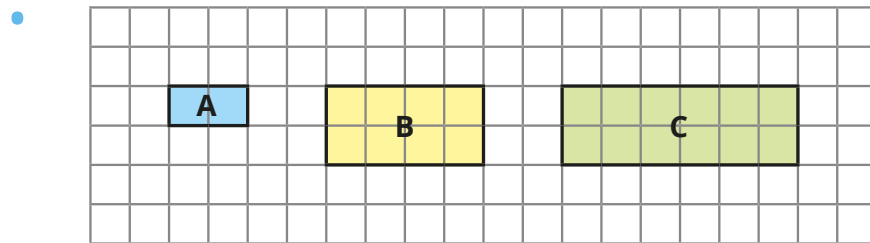
  ► Explain why shapes A and B are similar.

  ► Explain why shapes A and C are **not** similar.

  ► Draw another shape that is similar to A.

  Compare answers with a partner.

- Which of the shapes are similar to shape A?
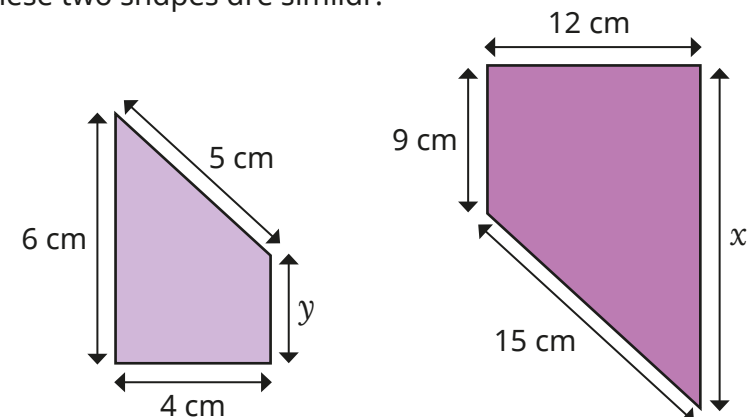

- These two triangles are similar.

  ► Find the lengths of b and c.

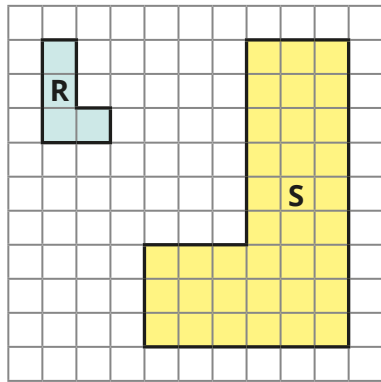 ► Measure the sizes of all the angles.
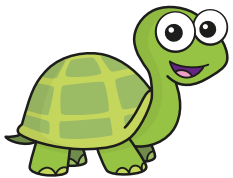
    What do you notice?

- These two shapes are similar.

  Find the lengths of x and y.

Similar shapes

Reasoning and problem solving

These two shapes cannot be similar, because they are facing different ways.

Do you agree with Tiny?

Explain your answer.

No

The Eiffel Tower is 320 m tall and 120 m wide.

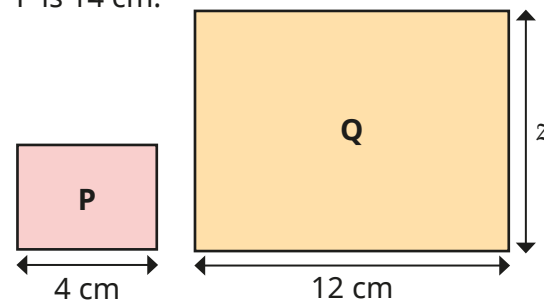Tommy makes a scale model of the Eiffel Tower.

His model is 16 cm tall.

How wide is his model?

6 cm

Rectangles P and Q are similar.

The perimeter of rectangle P is 14 cm.

Work out length z.

z = 9 cm