Reasoning and Problem Solving
Step 7: Measure Perimeter

<u>Teaching note:</u> Please note that precise measurements are dependant upon printer settings. Please take this into consideration when checking answers. Two of the questions require children to measure, therefore children must be provided with a ruler.

National Curriculum Objectives:

Mathematics Year 3: (3M7) <u>Measure the perimeter of simple 2-D shapes</u>

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Identify and explain which shape is the odd one out. Includes measuring the perimeter of rectangles and squares.
Expected Identify and explain which shape is the odd one out. Includes measuring the perimeter of rectangles and regular polygons.
Greater Depth Identify and explain which shape is the odd one out. Includes measuring the perimeter of regular shapes and rectangles in mm with a two-step problem.

Questions 2, 5 and 8 (Problem Solving)
Developing Draw and measure the shapes using the given criteria. Shapes include rectangles and squares only.
Expected Draw and measure the shapes using the given criteria. Shapes include regular polygons only.
Greater Depth Draw and measure the shapes using the given criteria. Shapes include irregular polygons only with measurements in mm.

Questions 3, 6 and 9 (Reasoning)
Developing Explain if the statement is correct when measuring a shape. Shapes include rectangles and squares only.
Expected Explain if the statement is correct when measuring a shape. Shapes include regular polygons only.
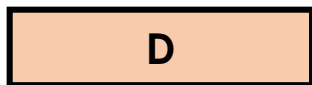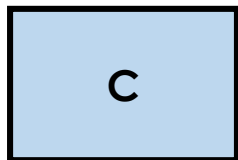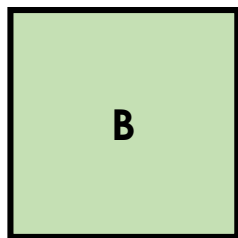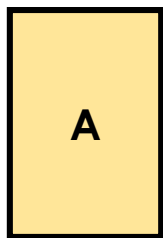**Greater Depth** Explain if the statement is correct when measuring a shape. Shapes include irregular polygons with measurements given in mm.

More <u>Year 3 Length and Perimeter</u> resources.

Did you like this resource? Don't forget to <u>review</u> it on our website.
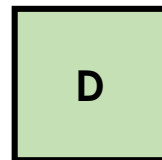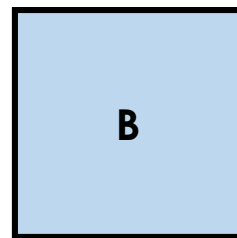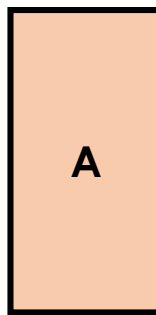
Measure Perimeter

1a. Circle the odd one out.

A

B

C

D

(D) Explain your choice.

R

1b. Circle the odd one out.

A

B

C

D

(D) Explain your choice.

R

2a. Follow the clues to draw the shapes.

Leah: My shape has four equal sides and each side measures 6cm.

Tariq: My shape has four sides and the opposite sides are equal. The perimeter is 20cm.

(D)

PS

2b. Follow the clues to draw the shapes.

George: My shape has two pairs of equal sides with a perimeter of 18cm.

Fatima: My shape has four sides and they are all equal. One side is 3cm long.
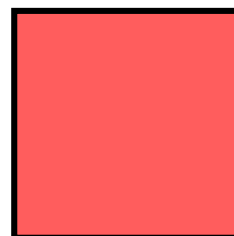
(D)

PS

3a. Tom has drawn the shape below.

I think the perimeter of my shape is 18cm.

Is he correct? Convince me.

(D)

R

3b. Julianne has drawn the shape below.
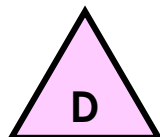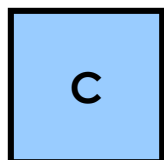
I think the perimeter of my shape is 11cm.

Is she correct? Convince me.

(D)

R

Measure Perimeter

Measure Perimeter

4a. Circle the odd one out.

A

B

C

D
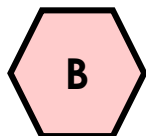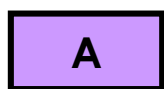
Explain your choice.

R

4b. Circle the odd one out.

A

B

C

D
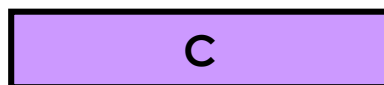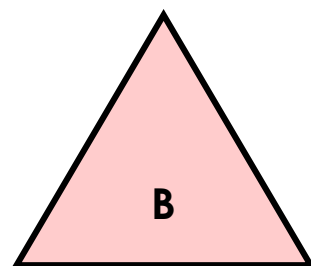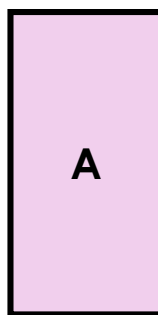
Explain your choice.

R

5a. Follow the clues to draw the shapes.

Mario: My shape has two fewer sides than Nisha's. Each side is equal and is greater than 4cm but less than 7cm.

Nisha: My shape has seven equal sides. Each side is equal and is greater than 3cm but less than 6cm.

PS

5b. Follow the clues to draw the shapes.

Lola: My shape has three more sides than Isaiah's shape. All the sides are equal and they are greater than 3cm but less than 6cm.

Isaiah: My shape has three equal sides. Each side is less than 8cm but greater than 4cm.

PS

6a. Sarah has drawn the shape below.

I think the perimeter of my shape is 12cm.

Is she correct? Convince me.

R

6b. Eric has drawn the shape below.

I think the perimeter of my shape is 6cm.
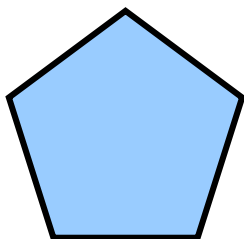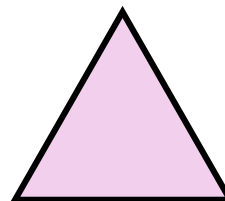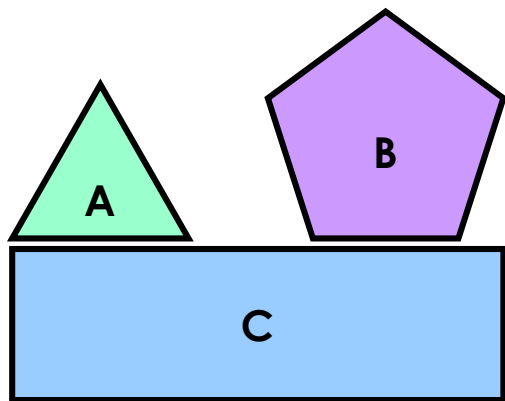
Is he correct? Convince me.

R

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Reasoning and Problem Solving – Measure Perimeter – Year 3 Expected

Measure Perimeter

7a. Which shape would be the odd one out if two shapes' perimeter was combined and totalled 245mm?
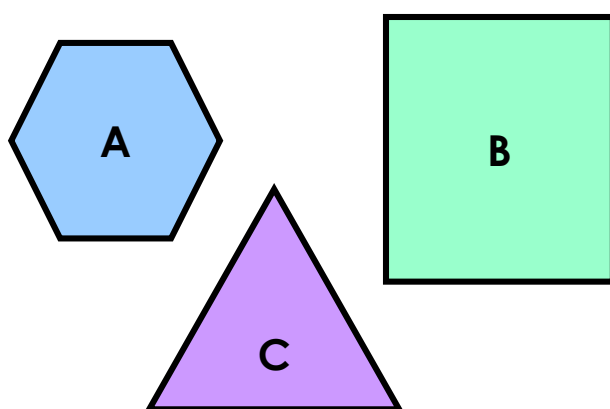
A

B

C

Explain your choice.

GD

R

Measure Perimeter

7b. Which shape would be the odd one out if two shapes' perimeter was combined and totalled 235mm?

A

B

C

Explain your choice.

GD

R

8a. Follow the clues to draw the shapes.

Betty

My shape has two fewer sides than Jacob's shapes. No length is the same and the perimeter is 180mm.

Jacob

My shape has 5 sides and each side is a different length. The perimeter is 210mm.

GD

PS

8b. Follow the clues to draw the shapes.

Liam

My shape has one more side than Monica's shape. Each side is different and the perimeter is 160mm.

Monica

My shape has four sides and each side is different. The perimeter is 200mm.

GD

PS

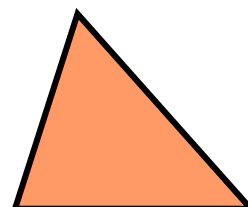**9a.** Ali has drawn the shape below.
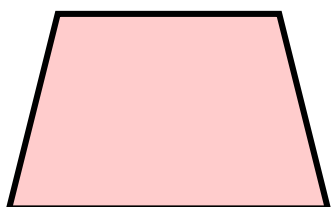
I think the perimeter of my shape is 120mm.

Is he correct? Convince me.

GD

R

9b. Kelly has drawn the shape below.

I think the perimeter of my shape is 85mm.

Is she correct? Convince me.

GD

R

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Reasoning and Problem Solving – Measure Perimeter – Year 3 Greater Depth

Reasoning and Problem Solving
Measure Perimeter

Developing

1a. B is the odd one out because it has a perimeter of 12cm, whereas the other shapes have a perimeter of 10cm.

2a. Leah's shape is a square with a 24cm perimeter and Tariq's shape is a rectangle. Tariq's shape, various answers, for example: 4cm, 6cm, 4cm, 6cm.

3a. No, Tom is incorrect because the perimeter of the shape is 20cm.

Developing

1b. D is the odd one out because it has a perimeter of 8cm, whereas the other shapes have a perimeter of 12cm.

2b. George's shape is a rectangle and Fatima's shape is a square with a 12cm perimeter. George's shape, various answers, for example: 5cm, 4cm, 5cm, 4cm.

3b. No, Julianne is incorrect because the perimeter of her shape is 12cm.

Expected

4a. C is the odd one out because it has a perimeter of 8cm, whereas the other shapes have a perimeter of 6cm.

5a. Mario's shape is a regular pentagon and Nisha's shape is a regular heptagon. Various answers, for example: Mario: 5cm, 5cm, 5cm, 5cm, 5cm, perimeter = 25cm. Nisha: 4cm, 4cm, 4cm, 4cm, 4cm, 4cm, 4cm, perimeter = 28cm.

6a. No, Sarah is incorrect because the perimeter of her shape is 10cm.

Expected

4b. D is the odd one out because it has a perimeter of 5cm, whereas the other shapes have a perimeter of 12cm.

5b. Lola's shape is a regular hexagon and Isaiah's shape is an equilateral triangle. Various answers, for example: Lola: 4cm, 4cm, 4cm, 4cm, 4cm, 4cm, perimeter = 24cm. Isaiah: 7cm, 7cm, 7cm, perimeter = 21cm.

6b. No, Eric is incorrect because the perimeter of his shape is 9cm.

Greater Depth

7a. B is the odd one out because shape A has a perimeter of 75mm and shape C has a perimeter of 170mm. 75mm + 170mm = 245mm. Shape B has a perimeter of 100mm.

8a. Betty's shape is an irregular triangle and Jacob's shape is an irregular pentagon. Accept shapes with a perimeter of 180mm for Betty and 210mm for Jacob.

9a. No, Ali is incorrect because the perimeter of his shape is 127mm.

Greater Depth

7b. A is the odd one out because shape B has a perimeter of 130mm and shape C has a perimeter of 105mm. 130mm + 105mm = 235mm. Shape A has a perimeter of 90mm.

8b. Liam's shape is an irregular triangle and Monica's shape is an irregular 4-sided shape. Accept shapes with a perimeter of 160mm for Liam and 200m for Monica.

9b. No, Kelly is incorrect because the perimeter of her shape is 97mm.