Reasoning and Problem Solving
Step 1: Measure Perimeter

Teaching Note:

Shapes are presented on a 1cm x 1cm grid but measurement may vary dependent on printer settings.

National Curriculum Objectives:

Mathematics Year 5: (5M7a) Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing State whether a given perimeter of a regular shape of 4 sides or less is true or false. Shapes in whole centimetres.
Expected State whether a given perimeter of a rectilinear shape is true or false. Shapes in whole centimetres.
Greater Depth State whether a given perimeter of a rectilinear shape is true or false.. Shapes in whole and half centimetres.

Questions 2, 5 and 8 (Reasoning)
Developing Consider the mistake made when measuring the perimeter of the given regular shape of 4 sides or less, explaining their answer. Shapes in whole centimetres.
Expected Consider the mistake made when measuring the perimeter of the given rectilinear shape, explaining their answer. Shapes in whole centimetres.
Greater Depth Consider the mistake made when measuring the perimeter of the given rectilinear shape, explaining their answer. Shapes in whole and half centimetres.

Questions 3, 6 and 9 (Problem Solving)
Developing On 1cm squared paper, draw a regular shape of 4 sides or less that meets the given parameters. Shapes given in whole centimetres.
Expected On 1cm squared paper, draw a rectilinear shape that meets the given parameters. Shapes given in whole centimetres.
**Greater Depth** On 1cm squared paper, draw rectilinear shape that meets the given parameters. Shapes given in whole and half centimetres.

More Year 5 Perimeter and Area resources.

Did you like this resource? Don't forget to review it on our website.

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Measure Perimeter

Measure Perimeter

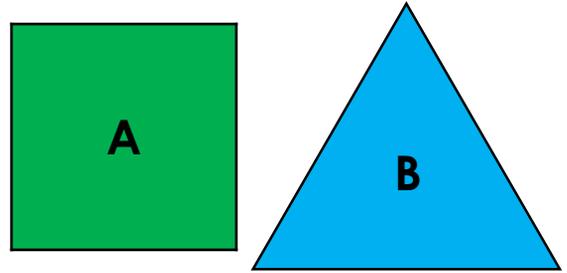**1a.** True or false? The perimeters of these shapes are the same.

A

B

Prove it!

⭐D

PS
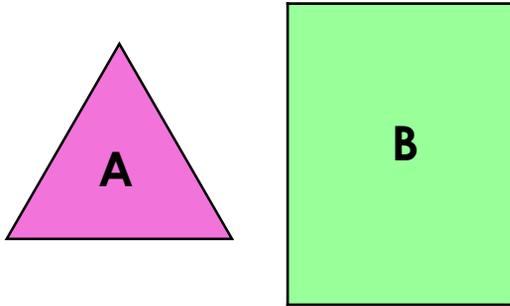
1b. True or false? The perimeters of these shapes are the same.
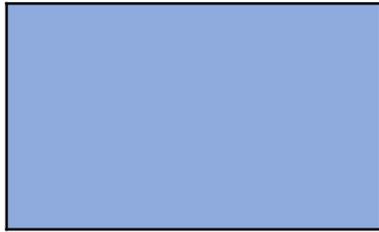
A

B

Prove it!

⭐D

PS

2a. Aman says,

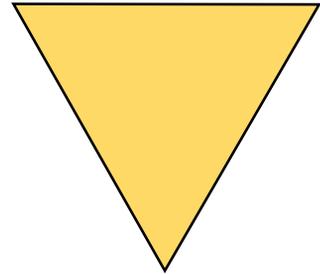> I used a ruler to measure the shape below. The perimeter is 8cm.

What mistake has Aman made? Prove it!

⭐D

R

2b. Oliver says;
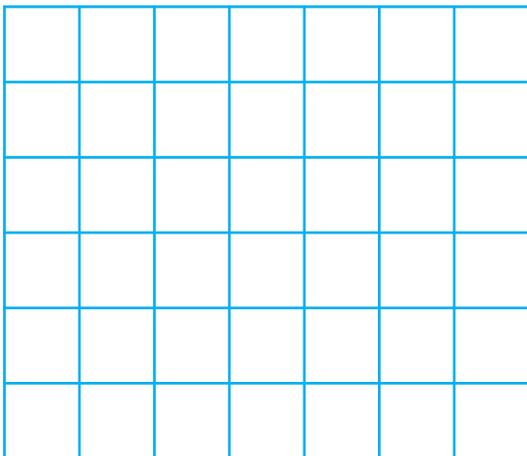
> I used a ruler to measure the shape below. The perimeter is 16cm.

What mistake has Oliver made? Prove it!

⭐D

R

3a. On 1cm squared paper draw a square with a perimeter of more than 12cm but less than 18cm.
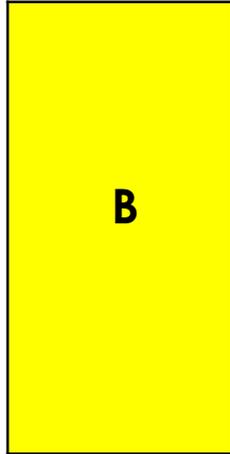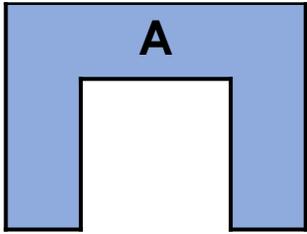
⭐D

PS

3b. On 1cm squared paper draw a rectangle with a perimeter of more than 12cm but less than 16cm.

⭐D

PS

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Reasoning and Problem Solving – Measure Perimeter – Year 5 Developing
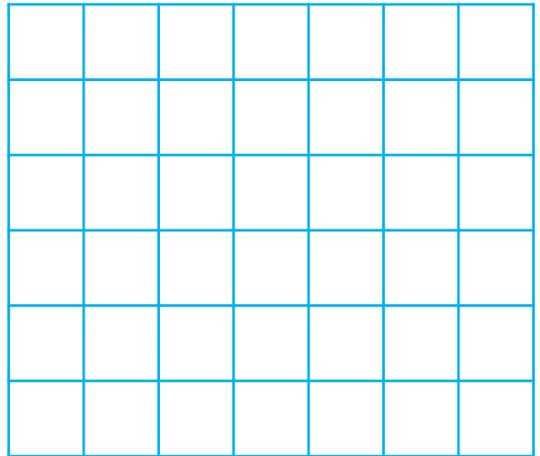
Measure Perimeter

4a. True or false? The perimeters of these shapes are the same.
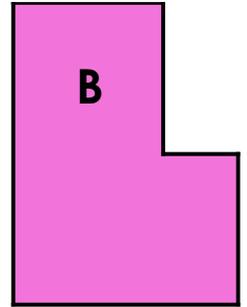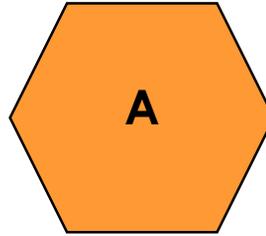
A

B

Prove it!

E | PS

4b. True or false? The perimeters of these shapes are the same.

A

B
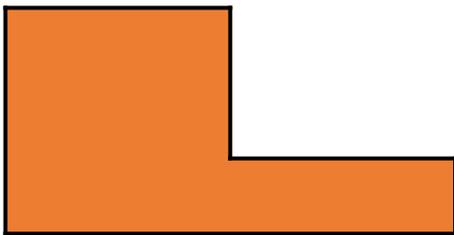
Prove it!

E | PS

5a. Judy says,

I used a ruler to measure the shape below. The perimeter is 16cm.

What mistake has Judy made? Prove it!
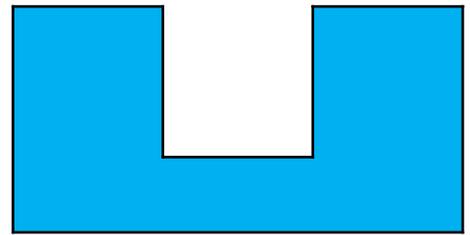
E | R

5b. Ashton says;

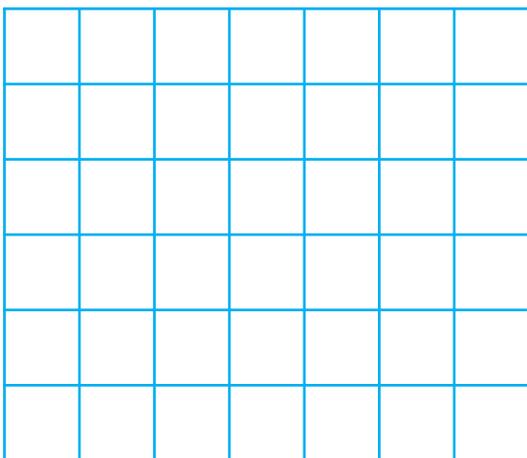I used a ruler to measure the shape below. The perimeter is 19cm.

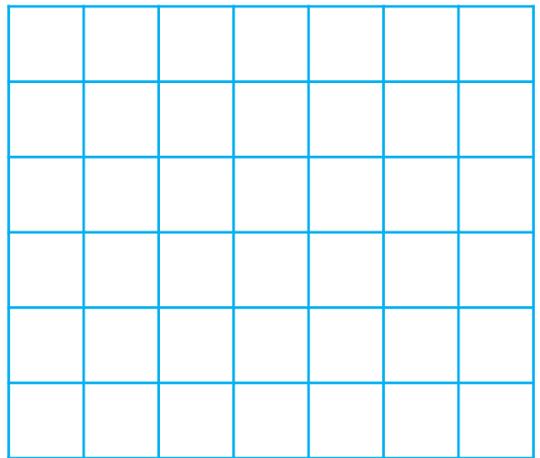What mistake has Ashton made? Prove it!

E | R

6a. On 1cm squared paper draw a 6-sided rectilinear shape with a perimeter of more than 16cm but less than 20cm.
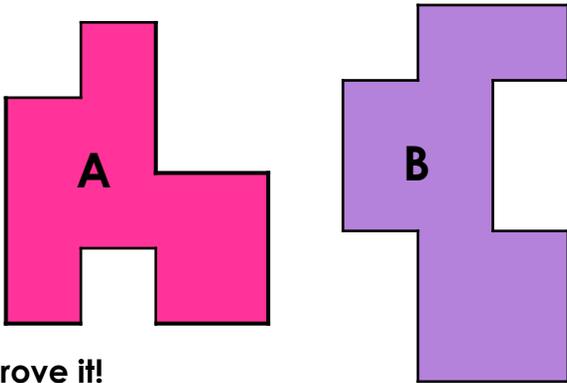
E | PS

6b. On 1cm squared paper draw a regular hexagon with a perimeter of more than 10cm but less than 14cm.

E | PS

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Reasoning and Problem Solving – Measure Perimeter – Year 5 Expected

Measure Perimeter

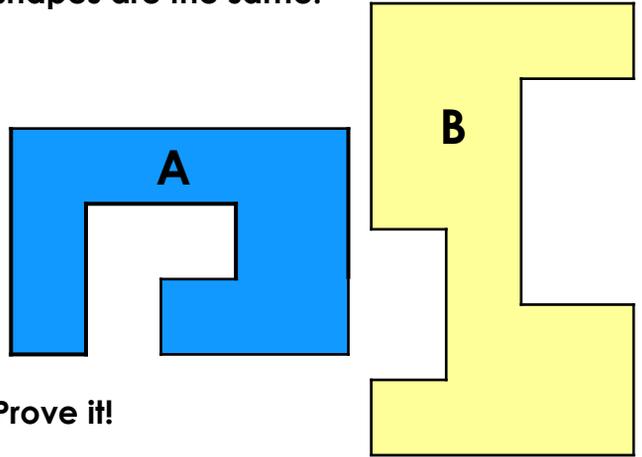**7a.** True or false? The perimeters of these shapes are the same.

A

B

Prove it!

PS

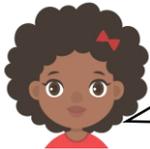**7b.** True or false? The perimeters of these shapes are the same.
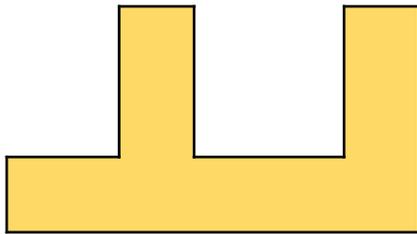
A

B

Prove it!

PS

8a. Lisa says,

> I used a ruler to measure the shape below. The perimeter is 20cm.

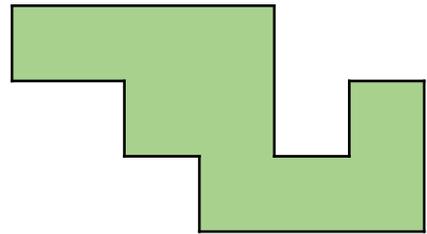What mistake has Lisa made? Prove it!

R

8b. Kyle says;

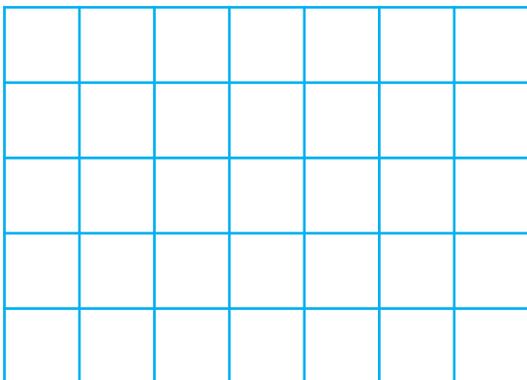> I used a ruler to measure the shape below. The perimeter is 21cm.
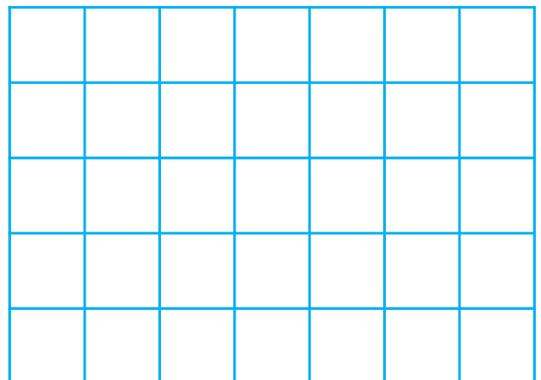
What mistake has Kyle made? Prove it!

R

9a. On 1cm squared paper draw an 8-sided rectilinear shape with a perimeter that is more than 14cm and less than 20cm, and that is an odd number.

PS

9b. On 1cm squared paper draw a 6-sided with a perimeter that is more than 18cm and less than 25cm, and that is an even number.
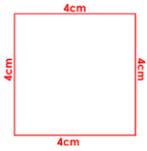
PS

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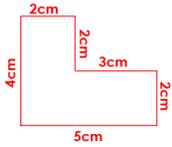**Reasoning and Problem Solving – Measure Perimeter – Year 5 Greater Depth**

Developing

1a. False. Shape A = 9cm and Shape B = 14cm

2a. The perimeter is 16cm, not 8cm. She has only measured two out of the four sides.
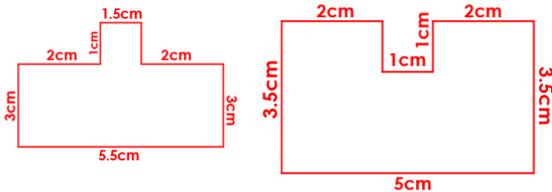
3a.

Expected

4a. True. Both Shape A and Shape B = 18cm.

5a The perimeter is 18cm, not 16cm. She has missed the side that equals 2cm.
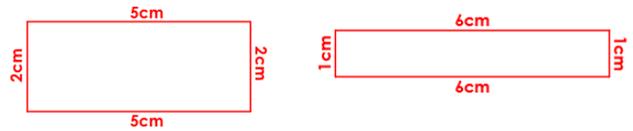
6a

Greater Depth

7a. False. Shape A = 17cm and Shape B = 18cm.

8a. The perimeter is 21cm, not 20cm. She has missed one side that equals 1cm.
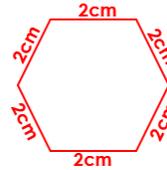
9a. Various answers, for example:

Developing

1b. True. Both Shape A and Shape B = 12cm.

2b. The perimeter is 12cm, not 16cm. He has added an extra side.

3b. Various answers, for example:

Expected

4b. False. Shape A = 12cm and Shape B = 14cm.

5b. The perimeter is 22cm, not 19cm. He has missed one of the sides that equals 3cm.

6b.

Greater Depth

7b. False. Shape A = 21cm and Shape B = 24cm.

8b. The perimeter is 19cm, not 21cm. He has counted the side that equals 2cm twice.

9b. Various answers, for example:

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Reasoning and Problem Solving – Measure Perimeter ANSWERS