Measure Perimeter

1a. Use the shapes below to create a compound rectilinear shape.

5m
1m

2m
1m

What is the perimeter of the shape?

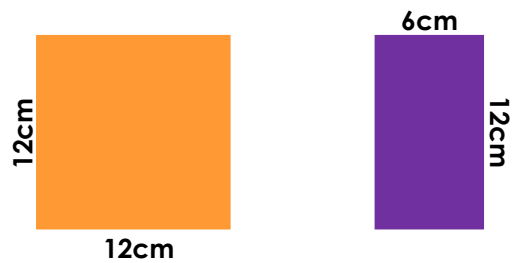**Is it the same as your neighbour's?**

⭐D

Not to scale PS

1b. Use the shapes below to create a compound rectilinear shape.

12cm
12cm

6cm
12cm
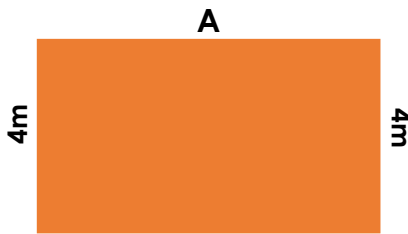
What is the perimeter of the shape?

Is it the same as your neighbour's?

⭐D

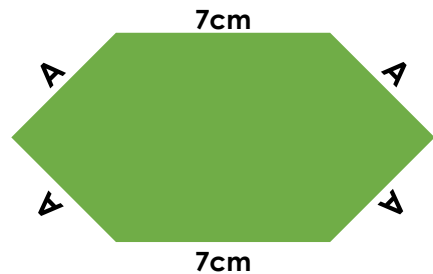*Not to scale* PS

2a. The perimeter of this shape is 18m.

A
4m   4m

What is the possible length of the side marked A? Prove it.

⭐D

Not to scale R

2b. The perimeter of this shape is 26cm.
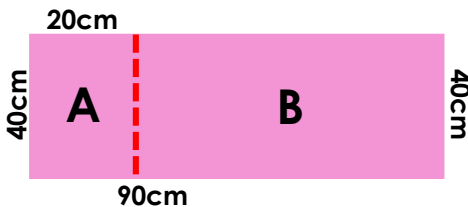
7cm

A   A

A   A

7cm

What is the possible length of the side marked A? Prove it.

⭐D

Not to scale R

3a. Theo cuts along the dotted line. He thinks the new perimeters are:
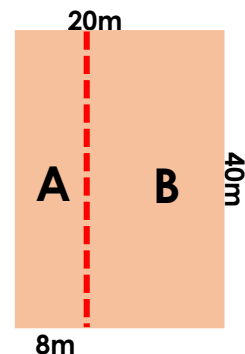A = 120cm and B = 220cm.

20cm
40cm   A   B   40cm
90cm

Is Theo correct? Prove it.

⭐D

Not to scale R

3b. Annis cuts along the dotted line. She thinks the new perimeters are:
A = 94m and 104m.

20m
A   B   40m
8m

Is Annis correct? Prove it.

⭐D

Not to scale R

classroomsecrets.co.uk

Reasoning and Problem Solving – Measure Perimeter – Year 5 Developing

Measure Perimeter

Measure Perimeter

4a. Use the shapes below to create a compound rectilinear shape.

9m
2m

2m
2m

2m
3m

Calculate the perimeter of your shape.

Now use the same shapes to create a compound rectilinear shape with a shorter perimeter.

Not to scale   PS

4b. Use the shapes below to create a compound rectilinear shape.

7m
6m

8m
6.5m

8m
3m

Calculate the perimeter of your shape.

Now use the same shapes to create a compound rectilinear shape with a longer perimeter.

Not to scale   PS

5a. The perimeter of this shape is 64m.

A   11.5m
10m   4m
B
11.5m

What are the possible lengths for side A and for side B? Prove it.

Not to scale   R

5b. The perimeter of this shape is 98cm.

12cm
← A
15cm
B

What are the possible lengths for side A and for side B? Prove it.

Not to scale   R

6a. Orla cuts along the dotted line. She thinks the new perimeters are:
A = 22cm and B = 36cm.

3cm
9cm   7cm
A   B   4.5cm
1.5cm

Is Orla correct? Prove it.

Not to scale   R

6b. Ronnie cuts along the dotted line. He thinks the new perimeters are:
A = 119m and B = 91m.

45m
A   B   30m
15.5m

Is Ronnie correct? Prove it.

Not to scale   R

classroomsecrets.co.uk

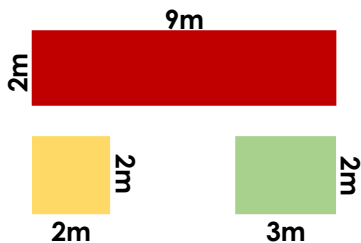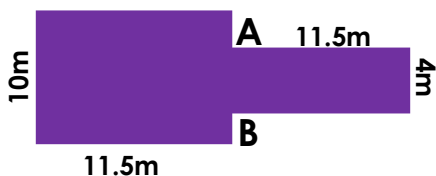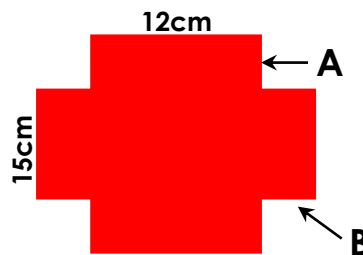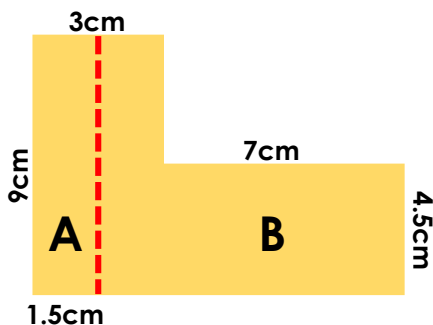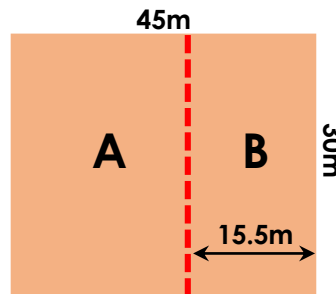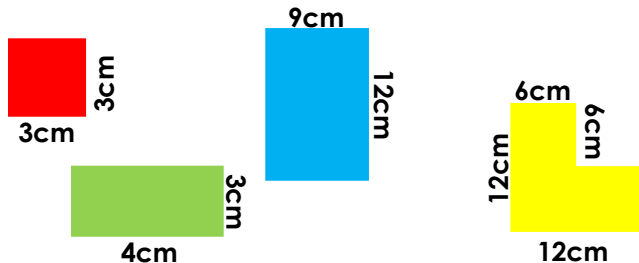**Reasoning and Problem Solving –Measure Perimeter – Year 5 Expected**

Measure Perimeter

7a. Use the shapes below to create a compound rectilinear shape.

Calculate the perimeter of your shape.

Now use the same shapes to create a compound rectilinear shape with a longer perimeter.

Not to scale

PS

Measure Perimeter

7b. Use the shapes below to create a compound rectilinear shape.

Calculate the perimeter of your shape.

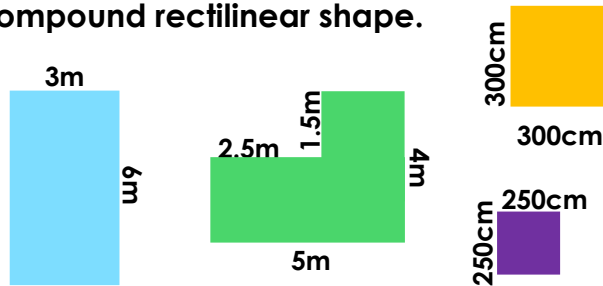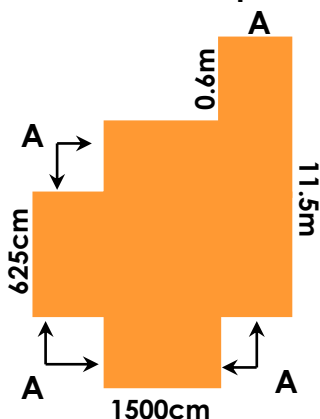Now use the same shapes to create a compound rectilinear shape with a shorter perimeter.

Not to scale

PS

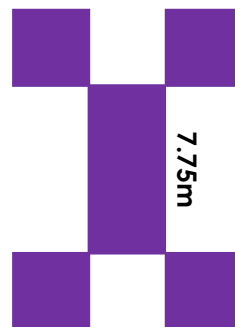**8a.** The perimeter of this shape is 69m.

The sides labelled A are of equal length. What is the length of A? Prove it.

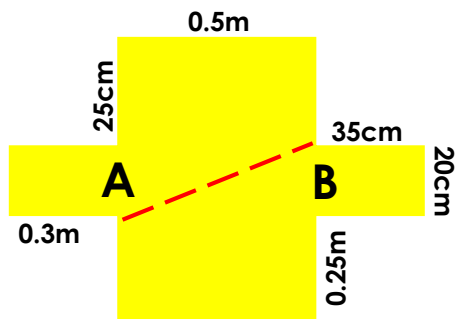*Not to scale*

R

8b. The perimeter of this shape is 5,870cm.

All of the unknown measurements are equal. What is unknown length? Prove it.

Not to scale

R

9a. Patrick cuts along the 50cm dotted line. He thinks the new perimeters are:
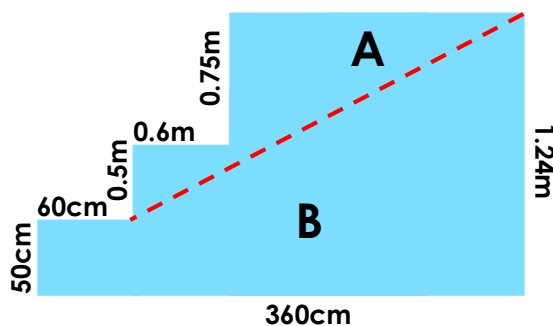A = 2.05m and B = 2.3m.

Is Patrick correct? Prove it.

Not to scale

R

9b. Phillipa cuts along the 1.85m dotted line. She thinks the new perimeters are:
A = 6.1m and B = 7.79m.

Is Phillipa correct? Prove it.

Not to scale

R

---

classroomsecrets.co.uk

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

Reasoning and Problem Solving
Measure Perimeter

Reasoning and Problem Solving
Measure Perimeter

Developing

1a. Various answers, for example:

Perimeter = 16m
Children should also compare with a neighbour.
2a. A = 5m. The two given sides have a sum of 8m. The remaining perimeter (10m) is shared over 2 equal sides, therefore each side is 5m.
3a. Theo is correct because:
A = 40cm + 40cm + 20cm + 20cm = 120 cm
B = 70cm + 70cm + 40cm + 40cm = 220cm

Expected

4a. Various answers, for example:

Perimeter = 30m   Perimeter = 26m
5a. The perimeter that can be worked out from the measurements provided is 60cm. Therefore, the combined total for A and B must be 4m. Various possible answers, for example:
A = 1.5m and B = 2.5m.
6a. Orla is incorrect because:
A = 9cm + 9cm + 1.5cm + 1.5cm = 21cm
B = 3cm – 1.5cm = 1.5cm and 9cm – 4.5cm = 4.5cm
Therefore, 1.5cm + 4.5cm + 7cm + 4.5cm + 7cm + 1.5cm + 9cm = 35cm

Greater Depth

7a. Various answers, for example:

Perimeter = 72cm   Perimeter = 86cm
8a. A = 2.95m (295cm)
7 unknown sides
6.25m + 15.0m + 0.6m + 11.5m + 15.0m = 48.35m
69m – 48.35m = 20.65m
20.65m (2,065cm) ÷ 7 = 2.95m (295cm)
9a. Patrick is incorrect because:
A = 50cm + 20cm + 30cm + 25cm + 50cm + 25cm = 200cm = 2m
B = 50cm + 35cm + 20cm + 35cm + 25cm + 50cm + 25cm = 240cm = 2.4m

Developing

1b. Various answers for example:

Perimeter = 72cm
Children should also compare with a neighbour.
2b. A = 3cm. The two given sides have a sum of 14cm. The remaining perimeter (12cm) is shared over 4 equal sides, therefore each side is 3cm.
3b. Annis is incorrect because:
A = 8m + 8m + 40m + 40m = 96m
B = (20m – 8m = 12m) 12m + 12m + 40m + 40m = 104m

Expected

4b. Various answers, for example:

Perimeter = 47m   Perimeter = 57m
5b. The perimeter that can be worked out from the measurements provided is 54cm. Therefore, the combined total for A and B must be 11cm. Various possible answers, for example:
A = 4.5cm and B = 6.5cm.
6b. Ronnie is correct because:
A = (45m – 15m = 29.5m) 29.5m + 29.5m + 30 + 30 = 119m
B = 15.5m + 15.5m + 30m + 30m = 91m

Greater Depth

7b. Various answers, for example:

Perimeter = 43m   Perimeter = 41m
8b. Each side = 240cm (2.4m)
18 unknown sides
7.75m x 2 = 15.5m (1,550cm)
5,870cm – 1,550cm = 4,320cm
4,320cm ÷ 18 = 240cm
9b. Phillipa is correct because:
A = (60cm + 60cm = 120cm) and (360cm – 120cm = 240cm)
Therefore, 185cm + 50cm + 60cm + 75cm + 240cm = 610cm = 6.1m
B = 185cm + 124cm + 360cm + 50cm + 60cm = 779cm = 7.79m