Varied Fluency
Step 1: Shapes – Same Area

National Curriculum Objectives:

Mathematics Year 6: (6M7a) Recognise that shapes with the same areas can have different perimeters and vice versa

Differentiation:

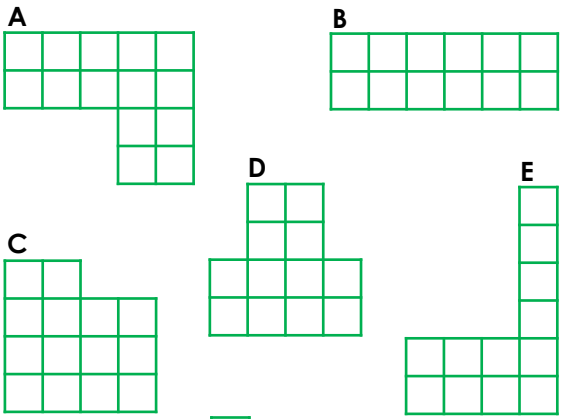
Developing Questions to support finding and drawing rectilinear shapes with the same area. Whole numbers only, using known multiplication facts within 12 x 12.
Expected Questions to support finding and drawing rectilinear shapes with the same area. Includes conversions (mm to cm).
Greater Depth Questions to support finding and drawing rectilinear shapes with the same area. Includes conversions (mm to cm, cm to m and mm to m).

More Perimeter, Area and Volume resources.

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

Shapes – Same Area

1a. Circle all rectilinear shapes with an area of 12cm².

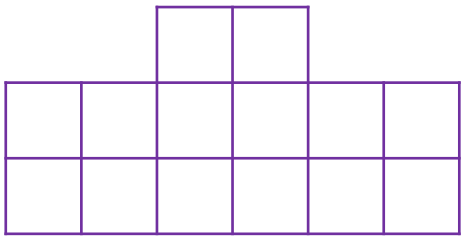


D

VF

2a. Draw a different rectilinear shape to the one below with the same area.

= 1cm²



D

VF

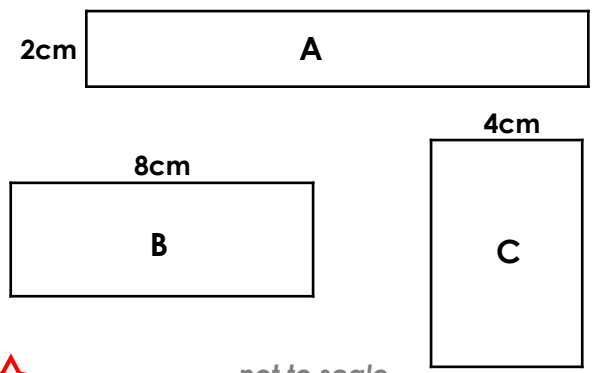
3a. Using 1cm² squared paper, draw 2 different rectangles each with an area of 18cm².

Label the lengths of each side.

D

VF

4a. All of these rectangles have an area of 24cm². Complete the missing lengths.



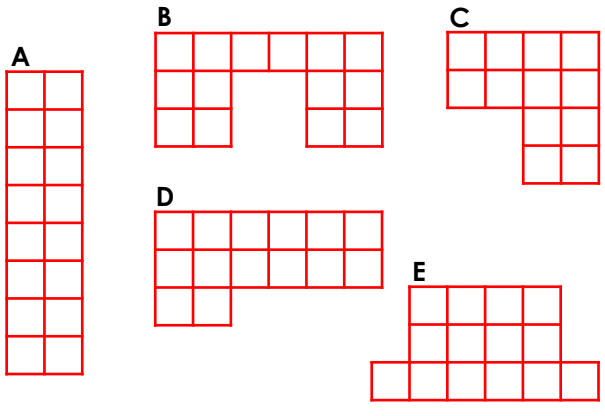
not to scale

D

VF

Shapes – Same Area

1b. Circle all rectilinear shapes with an area of 14cm².

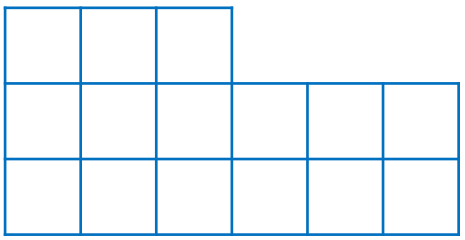


D

VF

2b. Draw a different rectilinear shape to the one below with the same area.

= 1cm²



D

VF

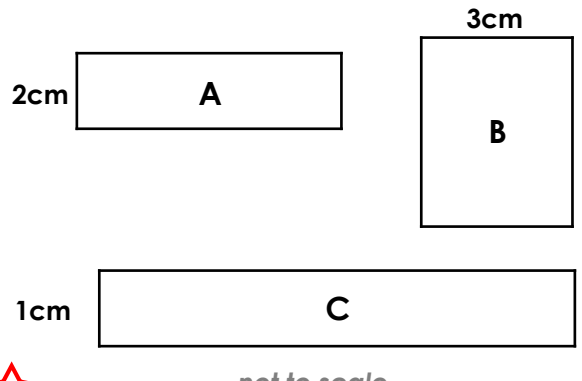
3b. Using 1cm² squared paper, draw 2 different rectangles each with an area of 12cm².

Label the lengths of each side.

D

VF

4b. All of these rectangles have an area of 18cm². Complete the missing lengths.



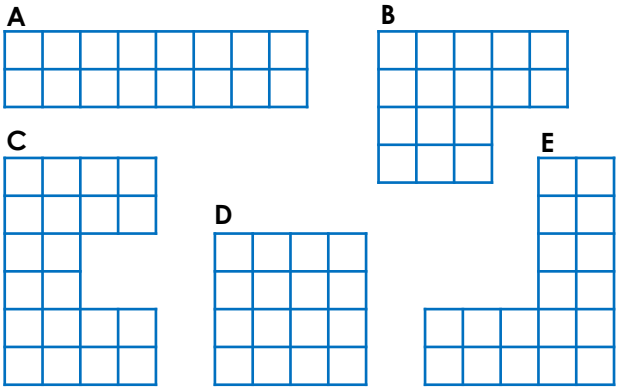
not to scale

D

VF

Shapes – Same Area

5a. Circle all rectilinear shapes with an area of 16cm².

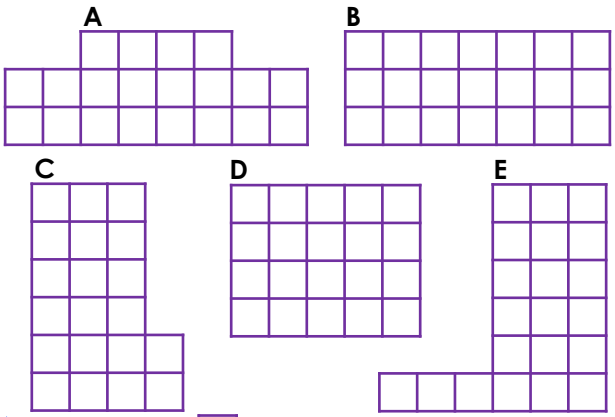


= 1cm²

VF

Shapes – Same Area

5b. Circle all rectilinear shapes with an area of 20cm².

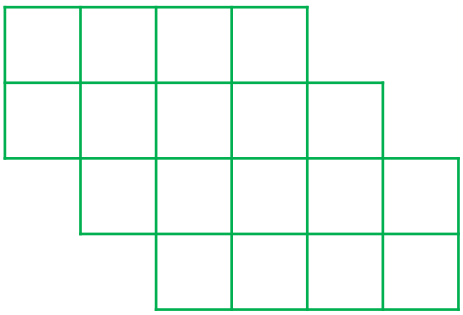


= 1cm²

VF

6a. Draw a different rectilinear shape to the one below with the same area.

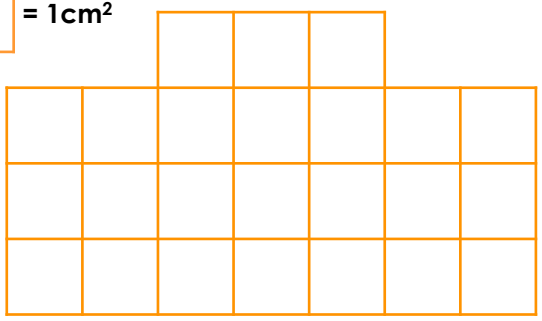
= 1cm²



VF

6b. Draw a different rectilinear shape to the one below with the same area.

= 1cm²



VF

7a. Using 1cm² squared paper, draw 3 different rectangles with a combined area totalling 24cm².

Label the lengths of each side so that one conversion takes place per shape .

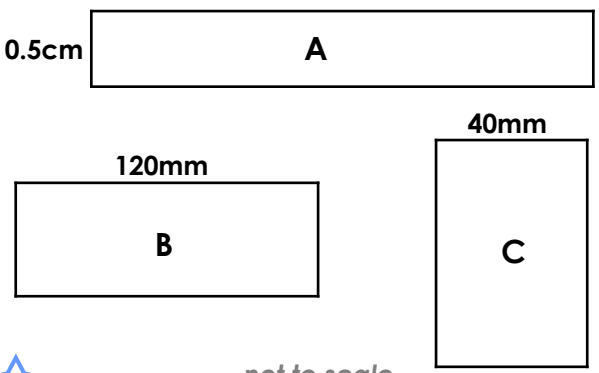
VF

7b. Using 1cm² squared paper, draw 3 different rectangles with a combined area totalling 20cm².

Label the lengths of each side so that one conversion takes place per shape.

VF

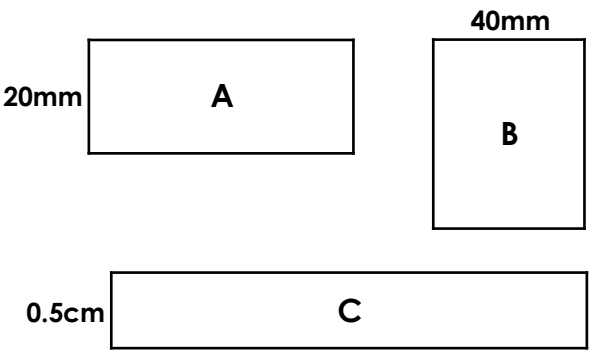
8a. All of these rectangles have an area of 36cm². Complete the missing lengths.



not to scale

VF

8b. All of these rectangles have an area of 32cm². Complete the missing lengths.

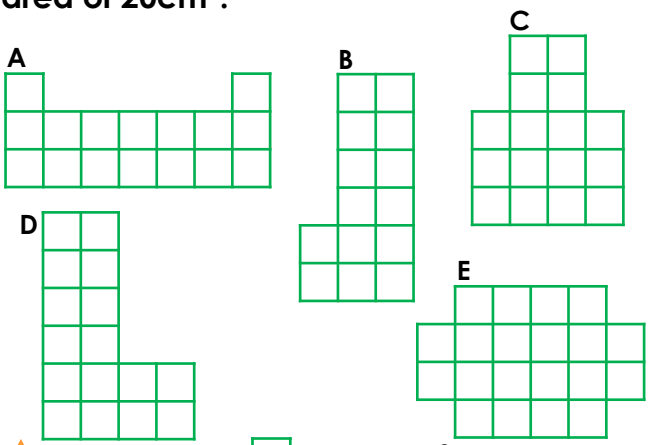


not to scale

VF

Shapes – Same Area

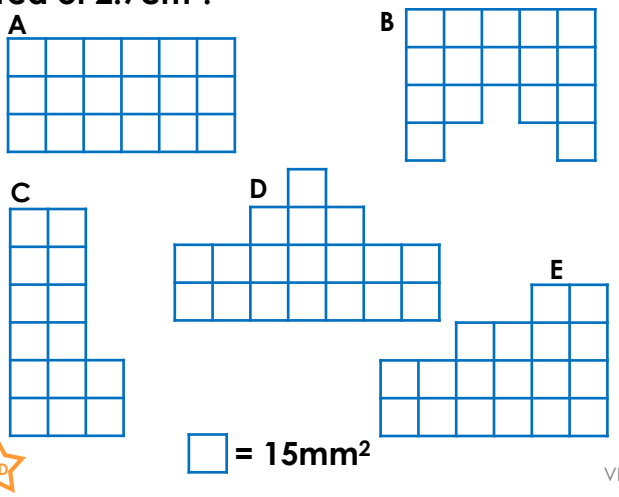
9a. Circle all rectilinear shapes with an area of 20cm².



□ = 1.25cm²

GD VF

9b. Circle all rectilinear shapes with an area of 2.7cm².

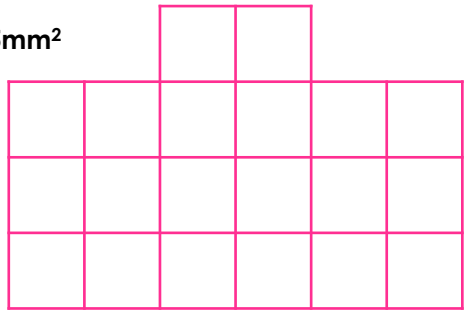


□ = 15mm²

GD VF

10a. Draw a different rectilinear shape to the one below with the same area.

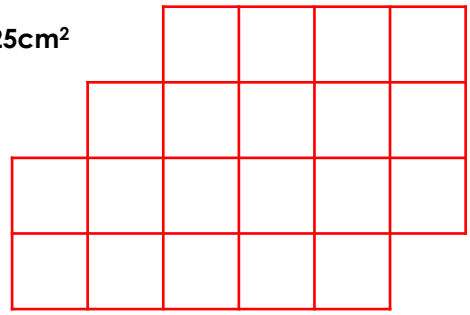
□ = 15mm²



GD VF

10b. Draw a different rectilinear shape to the one below with the same area.

□ = 1.25cm²



GD VF

11a. Using 1cm² squared paper, draw a composite rectilinear shape with an area of 360mm². Include a length of 1.5cm.

Label the lengths of each side so that at least two conversions take place.

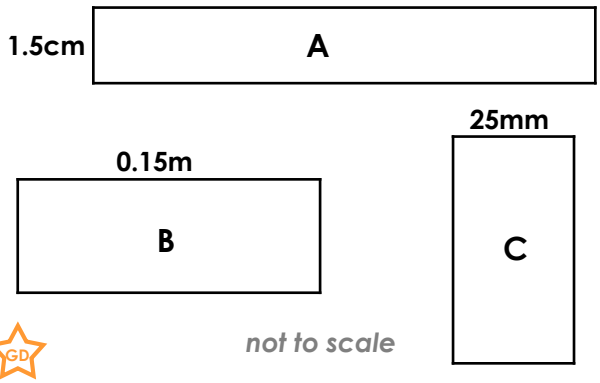
GD VF

11b. Using 1cm² squared paper, draw a composite rectilinear shape with an area of 24cm². Include a length of 25mm.

Label the lengths of each side so that at least two conversions take place.

GD VF

12a. All of these rectangles have an area of 75cm². Complete the missing lengths. Write the lengths in mm, cm and m.



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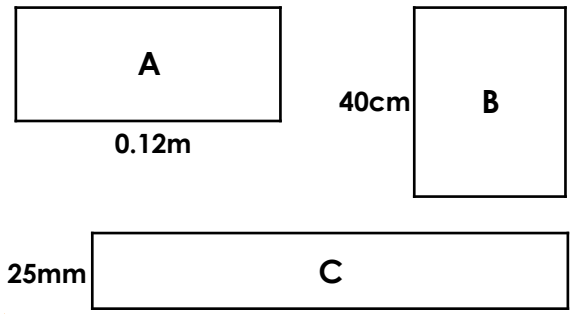
GD VF

12b. All of these rectangles have an area of 60cm². Complete the missing lengths. Write the lengths in mm, cm and m.



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GD VF

Varied Fluency
Shapes – Same Area

Developing

1a. B, D and E

2a. Any rectilinear shape with an area of 14cm^2.

3a. Any rectangles with an area of 18cm^2. For example: 1cm x 18cm; 2cm x 9cm; 3cm x 6cm.

4a. A = 12cm; B = 3cm; C = 6cm

Expected

5a. A, B and D

6a. Any rectilinear shape with an area of 18cm^2.

7a. Any combination of 3 rectangles with a combined area of 24cm^2 and where at least one conversion takes place. For example: 3cm x 30mm; 5cm x 2cm; 100mm x 0.5cm.

8a. A = 72cm; B = 30mm/3cm;
C = 90mm/9cm

Greater Depth

9a. A, C and D

10a. Any rectilinear shape with an area of 3.0cm^2.

11a. Any composite rectilinear shapes with an area of 360mm^2, where at least two conversions have taken place and where one side measures 1.5cm.

12a. A = 50cm/500mm/0.5m
B = 0.05m/5cm/50mm
C = 300mm/30cm/0.3m

Varied Fluency
Shapes – Same Area

Developing

1b. B, D and E

2b. Any rectilinear shape with an area of 15cm^2.

3b. Any rectangles with an area of 12cm^2. For example: 1cm x 12cm; 2cm x 6cm; 3cm x 4cm.

4b. A = 9cm; B = 6cm; C = 18cm

Expected

5b. A, C and D

6b. Any rectilinear shape with an area of 24cm^2.

7b. Any combination of 3 rectangles with a combined area of 20cm^2 and where at least one conversion takes place. For example: 3cm x 20mm; 2cm x 15mm; 22cm x 0.5cm.

8b. A = 160mm/16cm; B = 80mm/8cm;
C = 64cm

Greater Depth

9b. A, D and E

10b. Any rectilinear shape with an area of 25cm^2.

11b. Any composite rectilinear shapes with an area of 24cm^2, where at least two conversions have taken place and where one side measures 25mm.

12b. A = 0.05m/5cm/50mm
B = 1.5cm/15mm/0.015m
C = 240mm/24cm/0.24m