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. Whole numbers and decimals to 1dp (0.5) are used for the length and width of the sides.
Greater Depth Questions to support finding and drawing rectilinear shapes with the same area. Whole numbers and decimals to 2 dp are used for the length and width of the sides. Includes conversions (mm to cm, cm to m and mm to m).

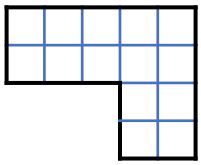
More Perimeter, Area and Volume resources.

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

Shapes – Same Area

1a. Circle the shapes with an area of $12cm^2$.

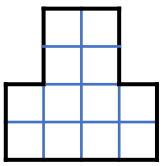
A.



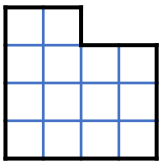
B.

not to scale

C.



D.

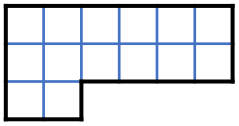


D = $1cm^2$

VF

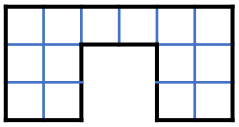
1b. Circle the shapes with an area of $14cm^2$.

A.



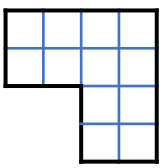
B.

not to scale



C.

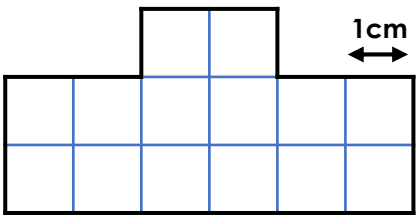
D.



D = $1cm^2$

VF

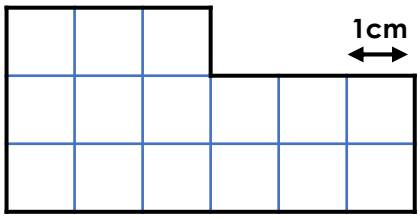
2a. Draw a different rectilinear shape to the one below with the same area.



not to scale

VF

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



not to scale

VF

3a. Using $1cm^2$ squared paper, draw 2 different rectangles with an area of $18cm^2$.

Label the lengths of each side.

VF

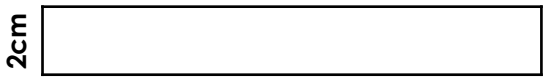
3b. Using $1cm^2$ squared paper, draw 2 different rectangles with an area of $12cm^2$.

Label the lengths of each side.

VF

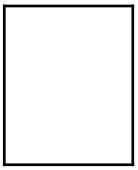
4a. All of these rectangles have an area of $24cm^2$.

A



B

C



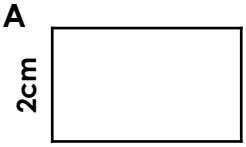
Complete the missing lengths.

not to scale

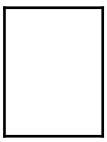
VF

4b. All of these rectangles have an area of $18cm^2$.

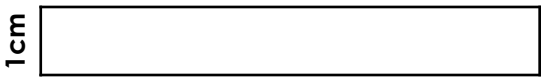
A



B



C



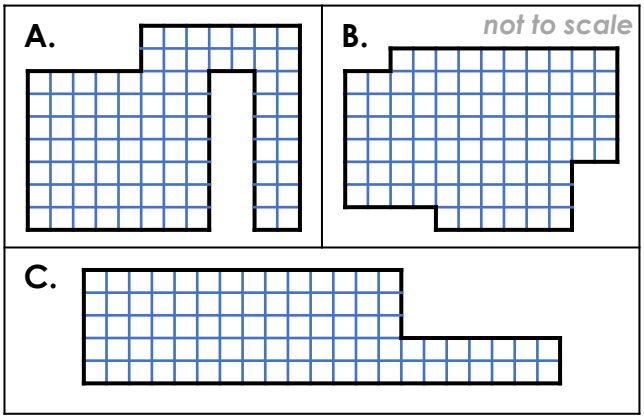
Complete the missing lengths.

not to scale

VF

Shapes – Same Area

5a. Circle the shapes with an area of 84cm².

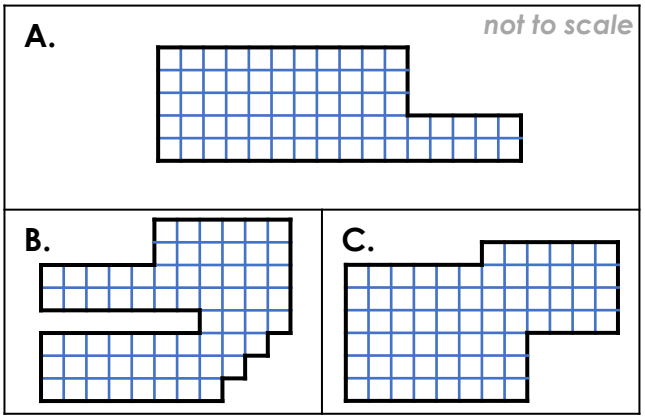


□ = 1cm²

VF

Shapes – Same Area

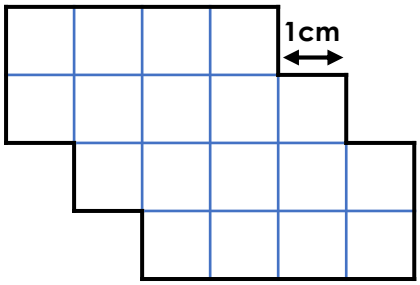
5b. Circle the shapes with an area of 65cm².



□ = 1cm²

VF

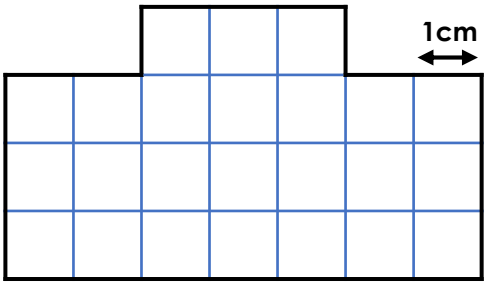
6a. Draw a different rectilinear shape to the one below with the same area.



not to scale

VF

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



not to scale

VF

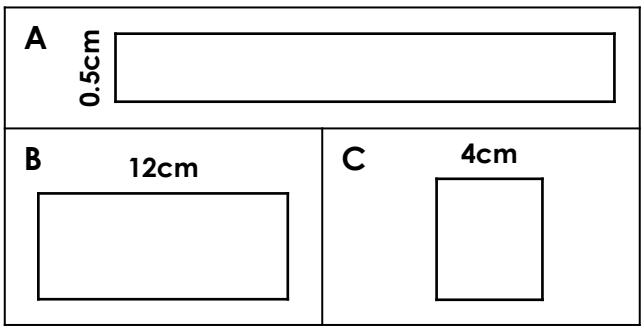
7a. Using 1cm² squared paper, draw 3 different rectangles with a combined area of 24cm².
One of your rectangles must have a side measurement ending in .5cm.

VF

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

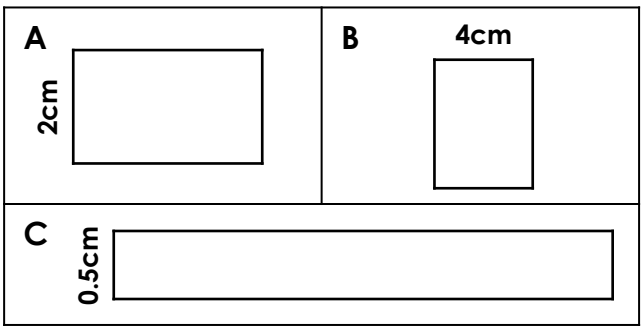


Complete the missing lengths.

not to scale

VF

8b. All of these rectangles have an area of 32cm².



Complete the missing lengths.

not to scale

VF

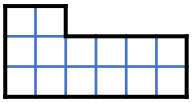
Shapes – Same Area

9a. Circle the shapes with an area of $20cm^2$.

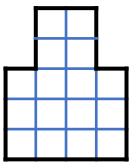
A.

B.

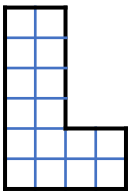
not to scale



C.



D.



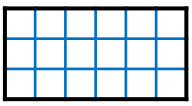
GD

□ = $1.25cm^2$

VF

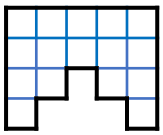
9b. Circle the shapes with an area of $2.7cm^2$.

A.

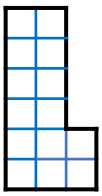


B.

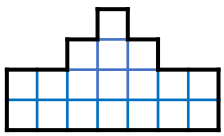
not to scale



C.



D.

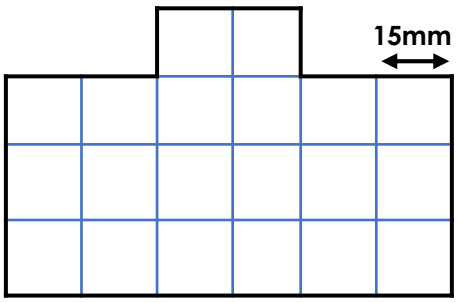


GD

□ = $15mm^2$

VF

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

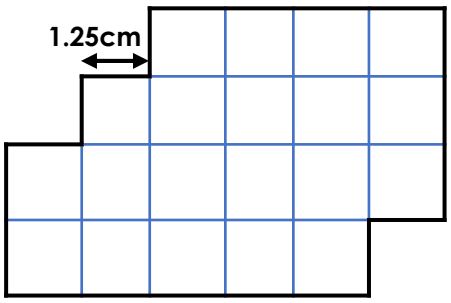


GD

not to scale

VF

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



GD

not to scale

VF

11a. Using $1cm^2$ squared paper, draw a composite rectilinear shape with an area of $36cm^2$. Include a length of 15mm.

Label the lengths of each side so that a conversion takes place.

GD

VF

11b. Using $1cm^2$ squared paper, draw a composite rectilinear shape with an area of $24cm^2$. Include a length of 25mm.

Label the lengths of each side so that a conversion takes place.

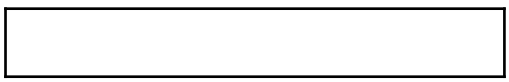
GD

VF

12a. All of these rectangles have an area of $75cm^2$. Complete the missing lengths.

A

1.5cm

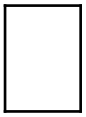


B

0.15m

C

25mm



Complete the missing lengths.

GD

not to scale

VF

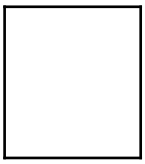
12b. All of these rectangles have an area of $60cm^2$. Complete the missing lengths.

A

0.12m

B

40cm



C

25mm

Complete the missing lengths.

GD

not to scale

VF

Varied Fluency
Shapes – Same Area

Developing

1a. B and C

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. 4cm

Expected

5a. A, B and C

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 side includes a half measurement. For example: 1.5cm x 16cm.

8a. A. 72cm; B. 3cm; C. 9cm

Greater Depth

9a. A, C and D

10a. Any rectilinear shape with an area of 3cm^2 (when square measures 15mm).

11a. Any composite rectilinear shapes with an area of 36cm^2, where a conversion has taken place and where one side measures 15mm. For example: 6cm x 15mm + 30mm x 9cm = 36cm^2.

12a. A. 50cm; B. 5cm; C. 30cm

Varied Fluency
Shapes – Same Area

Developing

1b. A, B and C

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 and B

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 5mm.

8b. A. 16cm; B. 8cm; C. 64cm

Greater Depth

9b. A and D

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

11b. Any composite rectilinear shapes with an area of 24cm^2, where a conversion has taken place and where one side measures 25mm. For example: 255mm x 6cm + 3cm x 30mm = 24cm^2.

12b. A. 5cm; B. 1.5cm; C. 24cm