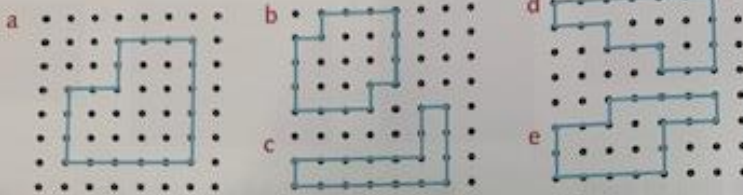Maths B

# Finding area

Find the area of rectangles and other shapes by counting squares
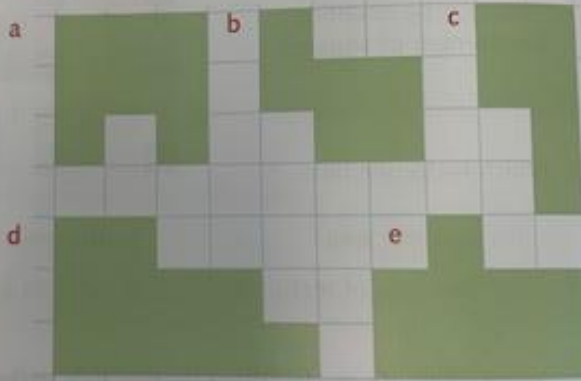
**Challenge 1**

Find the area of each shape on the pinboard by counting the number of squares.



a    b    d    c    e

**Challenge 2**

Count the number of green squares in each shape and write its area. Don't forget the unit in your answers.



a    b    c    d    e

Draw these rectangles on 1 cm squared paper. Below each one, write its area.

a    6 cm long and 2 cm wide

b    7 cm long and 4 cm wide

c    9 cm long and 5 cm wide

**You will need:**
- 1 cm squared paper
- ruler
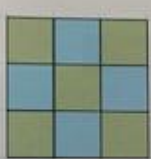
**Example**



Area = 15 square cm

Day 2

Can I use multiplication to calculate the area of rectangles?



**Calculating area**

Use multiplication to calculate the area of rectangles

Each small square is 1 square cm.
Calculate the area of these rectangles.

a    b    c

Example

2 rows of 2 squares
Area = 2 × 2 square cm
     = 4 square cm

Each small square is 1 square cm.
Calculate the area of these rectangles.

a    b
c    d    e

Example

3 rows of 3 squares
Area = 3 × 3 square cm
     = 9 square cm

Draw squares A to D on 1cm square dot paper.

a  Find the area of each square.

b  Draw the next two squares in the pattern.
   Label them E and F.

c  Find the area of squares E and F.

d  Predict the areas of squares G and H.

e  Check your predictions by drawing the squares.

You will need:
• 1 cm square dot paper
• ruler

A   B   C   D

# AREA & PERIMETER
## ─── WORDED PROBLEMS ───

Answer the questions below, giving the **area** <u>and</u> the **perimeter**. Use your whiteboards to make jottings.

1. A rectangular field measures 10ft by 3ft.  What is the area? What is the perimeter?

**Area** _____    **Perimeter** _____

2. A Square shaped room measures 8m on one side. What is the area? What is the perimeter?

**Area** _____    **Perimeter** _____

3. Mary wants new carpet for her dining room. The room is a rectangle and measures 12ft by 6ft. What is the area? What is the perimeter?

**Area** _____    **Perimeter** _____

4. Larry needs new curtains. His window is a rectangle, and measures 2m by 1.5m. What is the area? What is the perimeter?

**Area** _____    **Perimeter** _____

5. If the area of a square is 100cm$^2$, what is the length of each side? What is the perimeter?

**Length of each side** _____    **Perimeter** _____

6. If a rectangular football pitch has sides measuring 20m and 18m, what is the area? What is the perimeter?

**Area** _____    **Perimeter** _____

## <u>NOW</u>

On your whiteboard, write three worded problems for your partner. Remember to include area and perimeter.

Day 4:

# Area — 2

It would take a long time to count up the squares to find the area of a big rectangle. You can cheat though — you'll just need your multiplication skills...

## Example

Work out the area of the rectangle below.

2 cm
4 cm

The rectangle is made from 2 rows of 4 squares.
Area = 2 × 4 = 8 cm²

### Set A

How many centimetre squares fit inside the shapes below?

① 3 cm, 3 cm
② 2 cm, 6 cm
③ 7 cm, 4 cm

What is the area of these squares?

⑦ Width = 3 cm
⑧ Width = 4 cm
⑨ Width = 6 cm

Work out the area of these shapes:

④ 5 cm, 5 cm
⑤ 7 cm, 12 cm
⑥ 5 cm, 8 cm, 5 cm

⑩ Copy and complete the table:

| Length | Width | Rectangle area |
|---|---|---|
| 5 cm | 4 cm | 20 cm² |
| 7 cm | 2 cm | |
| 9 cm | 8 cm | |

### Set B

Work out the area of these shapes:

① 8 cm, 10 cm
② 9 cm, 12 cm
③ 12 cm, 4 cm, 4 cm

Calculate the area of a square of width:

⑥ 7 cm
⑦ 8 cm
⑧ 9 cm

Use a ruler to measure and find the area of these shapes:

④
⑤

⑨ Which of the shapes below have the same area?

A 6 cm
B — a square of width 5 cm
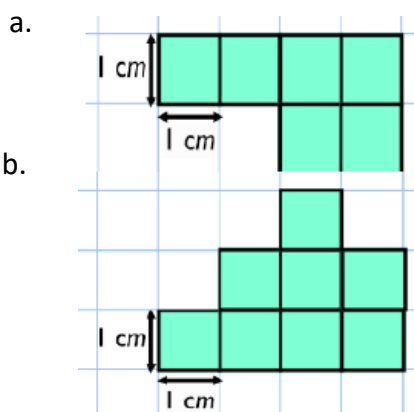C 3 cm, 8 cm
9 cm
D 4 cm
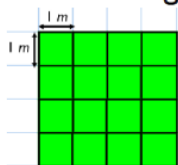E 2 cm, 4.5 cm

Day 5:



## Challenge 1
### Varied Fluency

1. Work out the area of these shapes and write your measurements in cm2.

a.



b.

2. Farmer Greg and Farmer Brian are measuring their fields in square metres. Whose is bigger?

Farmer Greg

Farmer Brian



## Challenge 2
### Reasoning and Problem Solving

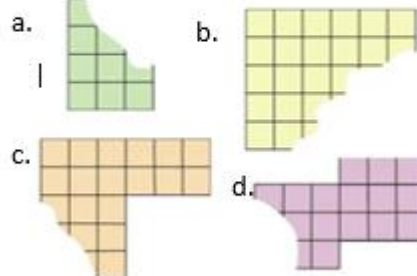A bite has been taken out of this chocolate bar. The bar was a rectangle.



Can you find the area of the bar before the bite was taken?

## Challenge 2
### Reasoning and Problem Solving

Order these shapes from largest to smallest

a.

b.

c.

d.



## Challenge 3
### Reasoning and Problem Solving



Look at the shapes. Can you spot the pattern and explain how the area is changing each time?

Can you predict what the area of the 6th shape in this sequence would be?