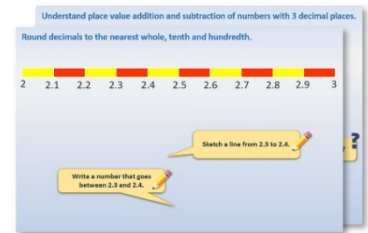


# Week 11, Day 4

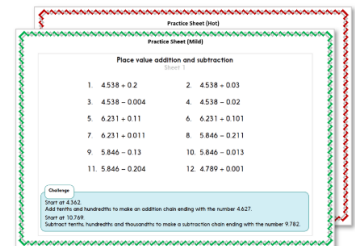
## Find the perimeter of rectilinear shapes

Each day covers one maths topic. It should take you about 1 hour or just a little more.

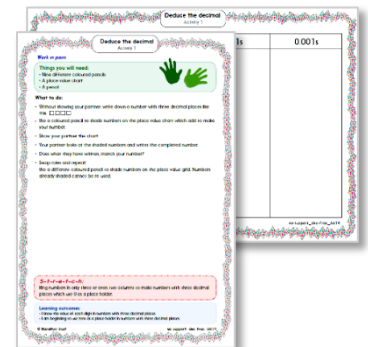
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



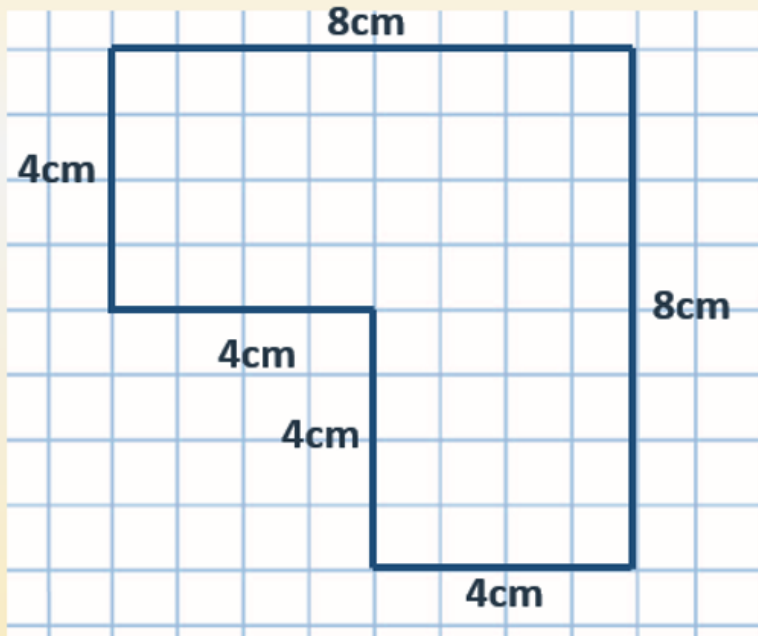
3. Finding it tricky? That's OK... have a go with a grown-up at **A Bit Stuck?**



4. Think you've cracked it? Whizzed through the Practice Sheets? Have a go at the **Investigation...**

## Learning Reminders

Find the perimeter of rectilinear shapes.



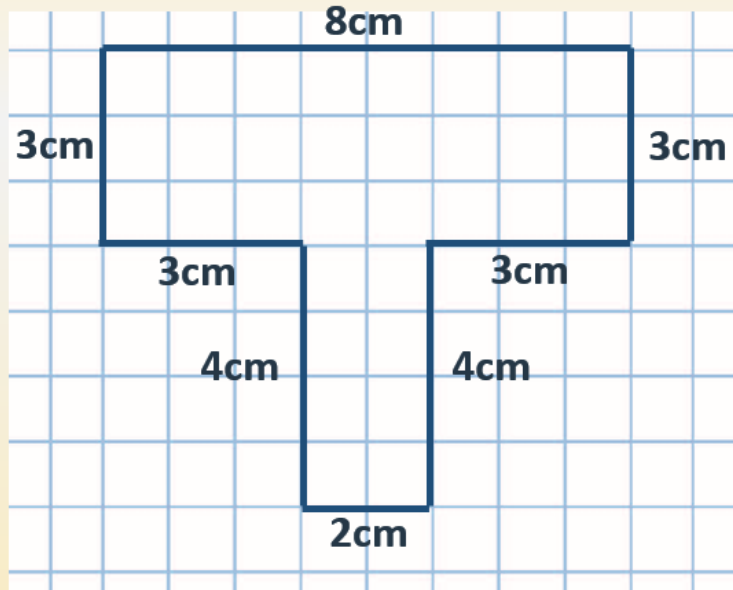
Remember that perimeter is the distance around a shape that an ant would walk if it walked all the way round the outside.

We can 'walk' like the ant round the sides of this rectilinear shape adding the lengths as we go...

Check that the **perimeter** is 32cm.

## Learning Reminders

Find the perimeter of rectilinear shapes.



Now check this one, adding the side lengths of all of the sides.

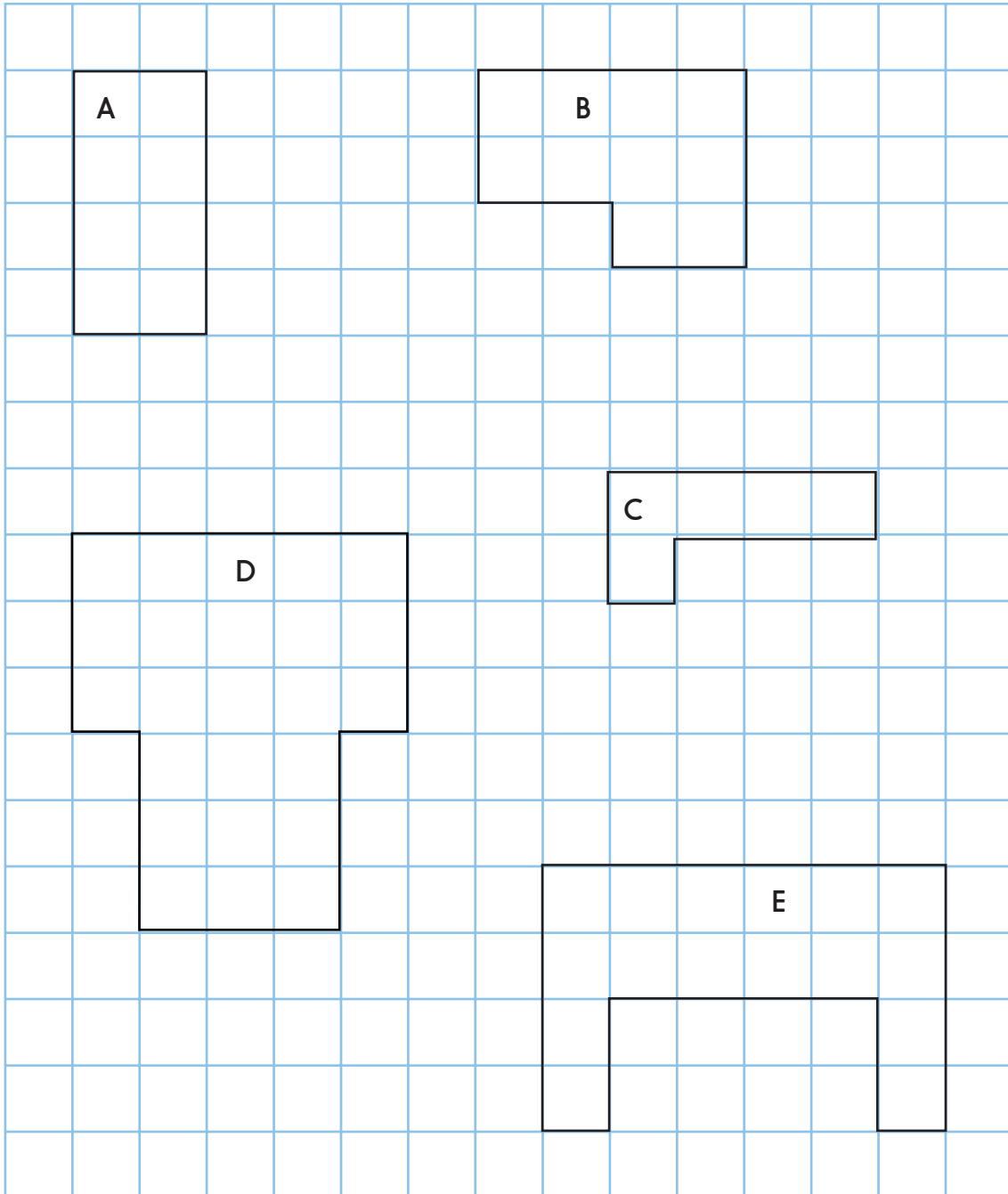
The **perimeter** is 30 cm this time.

Take care not to miss any of the sides, you can tick off each side as you walk along it.

## Practice Sheet Mild

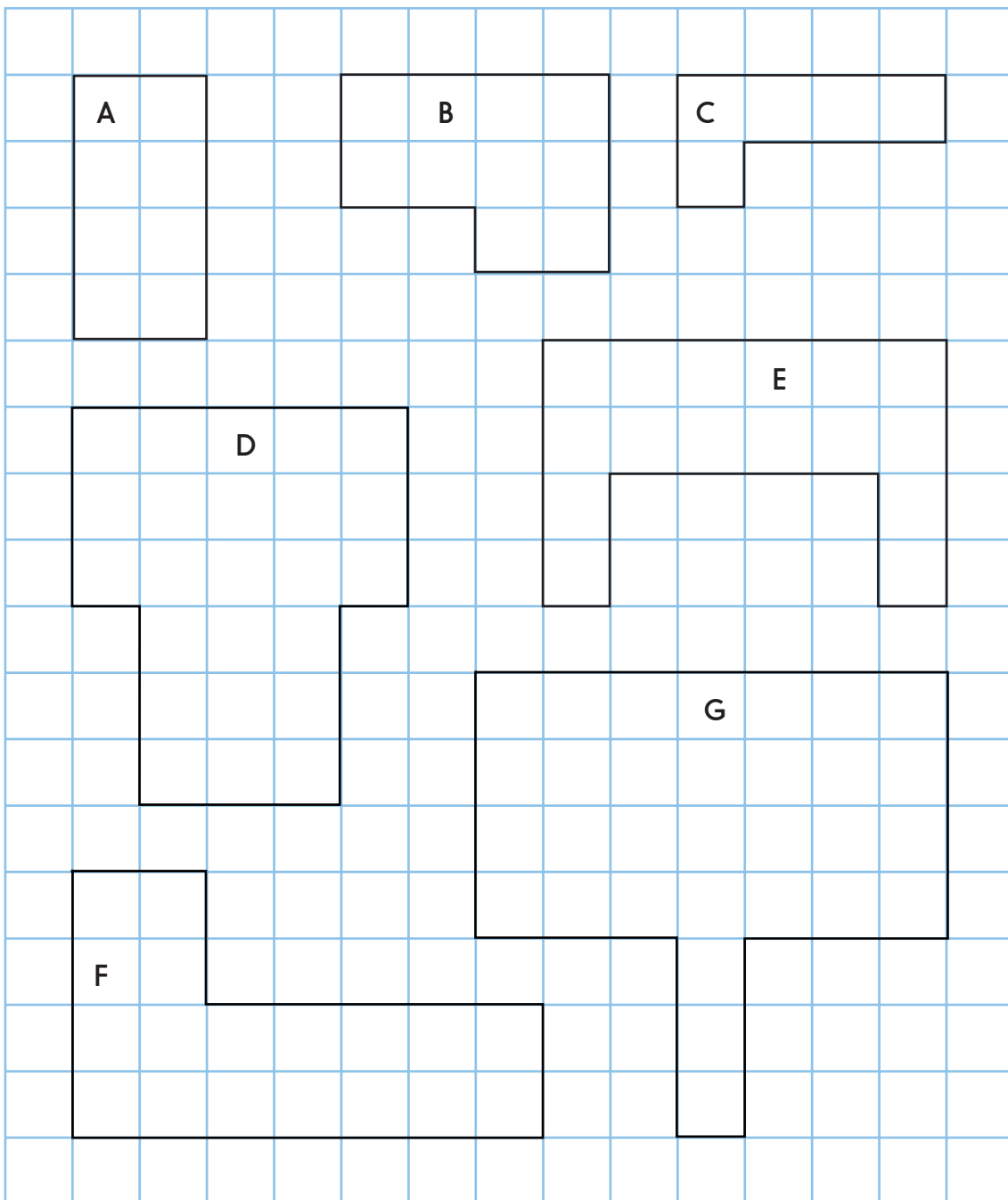
### Perimeters

Label these shapes to show the length of each side in centimetres. Then find the perimeter of each shape. Which has the greatest perimeter?



## Practice Sheet Hot Perimeters

Which of these shapes has the greatest perimeter?  
Find the perimeter of these shapes.  
Write the perimeter in each shape.



### Challenge

Georgia says, 'Finding these perimeters was easy! I did  $2 \times$  the sum of the longest side and width of each shape. Like for shape C, I did  $2 \times (4 + 2)$ .' Does this strategy work? Does it work for all of the shapes?

## Practice Sheets Answers

### Perimeters (mild)

$$A = 12\text{cm}$$

$$B = 14\text{cm}$$

$$C = 12\text{cm}$$

$$D = 22\text{cm}$$

$$E = 24\text{cm, and has the largest perimeter}$$

### Perimeters (hot)

$$A = 12\text{cm}$$

$$B = 14\text{cm}$$

$$C = 12\text{cm}$$

$$D = 22\text{cm}$$

$$E = 24\text{cm}$$

$$F = 22\text{cm}$$

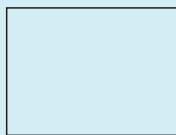
$$G = 28\text{cm}$$

Shape G has the largest perimeter.

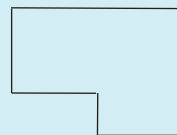
### Challenge

This works for all shapes, except E.

The strategy works when a corner has been 'pushed in', e.g.



has the same perimeter as



## A Bit Stuck?

### Calculating the perimeter of rectangles by doubling

Calculate the perimeters of these rectangles from the length of two sides. Remember to find the total and double.

Complete the table as far as you can, starting with bronze.

Length of long side	Length of short side	Total of sides given	Double the total to find the perimeter
5cm	3cm		
6cm	2cm		
8cm	4cm		
12cm	8cm		
15cm	10cm		
20cm	5cm		
28cm	22cm		
64cm	36cm		

Do any of the rectangles have the same perimeter?

## A Bit Stuck? Answers

Calculating the perimeter of rectangles by doubling

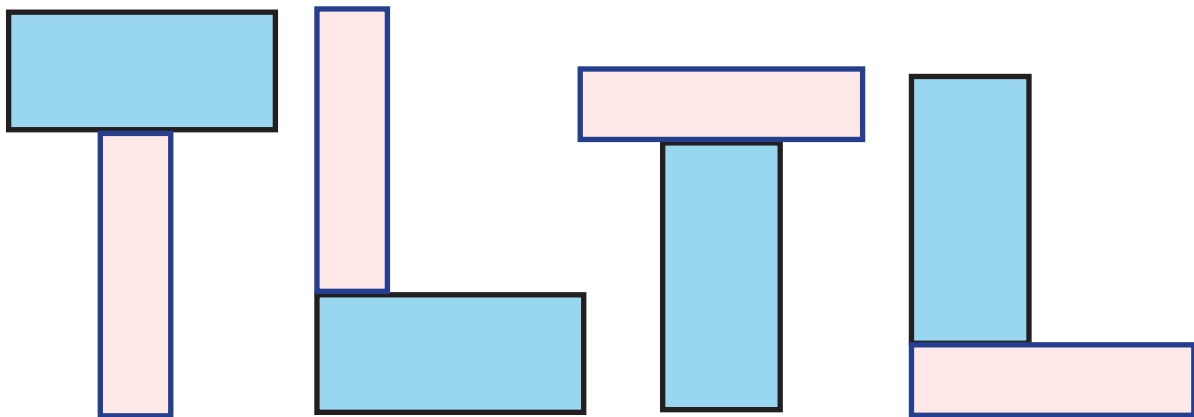
Length of long side	Length of short side	Total of sides given	Double the total to find the perimeter
5cm	3cm	8cm	16cm
6cm	2cm	8cm	16cm
8cm	4cm	12cm	24cm
12cm	8cm	20cm	40cm
15cm	10cm	25cm	50cm
20cm	5cm	25cm	50cm
28cm	22cm	50cm	100cm
64cm	36cm	100cm	200cm



## Investigation

### Re-arranging rectangles

- Draw 8 different rectangles on  $\text{cm}^2$  paper, and carefully cut them out.
- Find the perimeter of each rectangle.
- Choose two rectangles to put together to make two 'T' shapes and two 'L' shapes.



- Find the perimeter of the four new shapes.
- Can you guess any of the new perimeters before calculating?
- Is there a link between the perimeters of the two original rectangles in each shape and the perimeter of the combined shape?
- Can you write a rule or generalisation to describe this pattern?

# Investigation

## Re-arranging rectangles

