# Finding the perimeter of 2D shapes

## Prior learning

- Can identify and describe the properties of 2D shapes.
- Can use a ruler to accurately measure straight lines.

## Learn

- Explain that the perimeter of a shape is the distance around its edge. A nice visualisation is to imagine that you are an ant walking around a small shape, or you yourself are walking around a large shape. Using the textbook examples on page 64 as a starting point, demonstrate how to add side lengths together to find the perimeter. It is useful to cover irregular shapes at this point – if anything this makes the concept more obvious.
- Next, return to the regular shapes listed at the top of page 64 in the textbook – triangle, square, rectangle, pentagon, hexagon and circle. Draw examples of these shapes on the board and write side lengths on them as appropriate. Work with the children to calculate the perimeter of each shape. Ask: *What is difficult about finding the perimeter of a circle?* Consider how it might be found.
- *100 Maths Lessons Year 3, Autumn 1, Week 5, Lessons 4 and 5* focus on the perimeter of 2D shapes.

## Talk maths

- Provide children with a range of shapes and ask them to explain to each other how they would find the perimeter of each. Some children might notice the link to multiplication for regular shapes, and more confident learners can be challenged to find the perimeter of composite shapes formed by joining two regular shapes together.

## Activities

- The textbook questions are easy enough to adapt to create more questions if desired by adjusting either/both sizes and units of length.
- The *Year 3 Practice Book* activity 'Measuring 2D shapes' challenges children to create shapes from a limited number of facts and then to find the perimeters.

## Problems

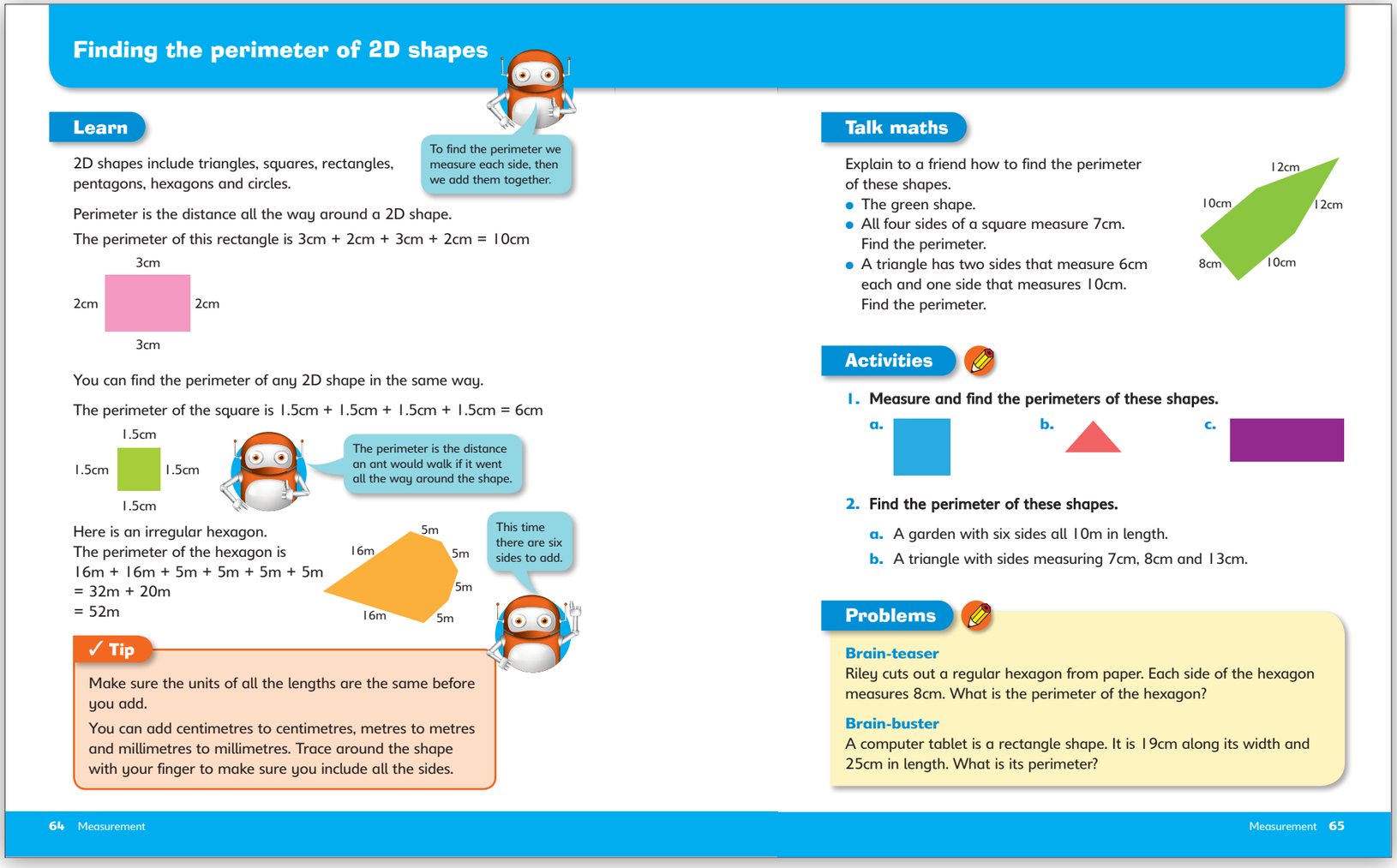
- Once children have completed the problems, challenge them to measure and calculate the perimeters of a range of items in the classroom or school. They can tabulate these, listing length, width and perimeter for each one, and ensuring the correct units are used.

## Curriculum objectives

- To measure the perimeter of simple 2D shapes.

## Success criteria

- I can find the perimeter of 2D shapes.



### Finding the perimeter of 2D shapes

#### Learn

2D shapes include triangles, squares, rectangles, pentagons, hexagons and circles.

To find the perimeter we measure each side, then we add them together.

Perimeter is the distance all the way around a 2D shape.

The perimeter of this rectangle is 3cm + 2cm + 3cm + 2cm = 10cm

3cm, 2cm, 2cm, 3cm

You can find the perimeter of any 2D shape in the same way.

The perimeter of the square is 1.5cm + 1.5cm + 1.5cm + 1.5cm = 6cm

1.5cm, 1.5cm, 1.5cm, 1.5cm

The perimeter is the distance an ant would walk if it went all the way around the shape.

Here is an irregular hexagon.
The perimeter of the hexagon is
16m + 16m + 5m + 5m + 5m + 5m
= 32m + 20m
= 52m

16m, 16m, 5m, 5m, 5m, 5m

This time there are six sides to add.

**✓ Tip**

Make sure the units of all the lengths are the same before you add.

You can add centimetres to centimetres, metres to metres and millimetres to millimetres. Trace around the shape with your finger to make sure you include all the sides.

#### Talk maths

Explain to a friend how to find the perimeter of these shapes.

- The green shape.
- All four sides of a square measure 7cm. Find the perimeter.
- A triangle has two sides that measure 6cm each and one side that measures 10cm. Find the perimeter.

12cm, 10cm, 12cm, 8cm, 10cm

#### Activities

1. **Measure and find the perimeters of these shapes.**

a. b. c.

2. **Find the perimeter of these shapes.**

   a. A garden with six sides all 10m in length.

   b. A triangle with sides measuring 7cm, 8cm and 13cm.

#### Problems

**Brain-teaser**
Riley cuts out a regular hexagon from paper. Each side of the hexagon measures 8cm. What is the perimeter of the hexagon?

**Brain-buster**
A computer tablet is a rectangle shape. It is 19cm along its width and 25cm in length. What is its perimeter?





## 100 Maths Lessons Year 3 links:

- Autumn 1, Week 5 (pages 32–37): find the perimeter of simple 2D shapes

## Year 3 Practice Book links:

- (page 108): Measuring 2D shapes