

Square numbers and number patterns

MODULE 2 · OPERATIONS AND COMPUTATIONAL FLUENCY NUMBER

A **square number** is a number times itself. We write it with a small ², which means 'to the power of 2'.

$$\rightarrow 5^2 = 5 \times 5 = 25.$$

→ The first squares: 1, 4, 9, 16, 25, 36...

	× 5
5	25

Total: 25

FIND 6² AND 9²

1 $6^2 = 6 \times 6 = 36.$

2 $9^2 = 9 \times 9 = 81.$

3 A square number is the area of a square with that side length.

WARM-UP

1 Cian is planning the new herb patch in the school garden on grid paper. He marks out a square plot that is 3 squares wide and 3 squares long. How many small grid squares does the herb patch cover in total, written as 3²?

What is 3 squared? (3²)

2 At the 5th class summer fair stall, Oisín runs a spin-the-wheel game where the score is 3 squared (3²). What is the score on his wheel?

What is 3 squared? (3²)

3 Aoife is designing a small square mosaic for the school library wall. The mosaic is 3 tiles wide and 3 tiles tall. How many tiles does she need altogether, written as 3²?

What is 3 squared? (3²)

4 Sean and his 5th class plant 87 lettuce seeds in the school polytunnel in March. By the end of April, 19 of the seedlings have been eaten by slugs. How many seedlings are still growing?

$$87 - 19 = ?$$

PRACTICE

1 The caretaker paints a square hopscotch grid on the yard with 10 squares along each side. What is 10², the total number of small squares in the grid?

What is 10 squared? (10²)

2 For an art-and-maths lesson, Oisín draws a treasure map with a square grid of buried gems. The grid has 7 rows and 7 columns, with one gem in each square. How many gems are on the map in total, written as 7²?

What is 7 squared? (7²)

CHALLENGE

1 Cian is helping the teacher set up a square sticker grid on the 5th class noticeboard. The grid has 12 stickers along each side, with 12 rows in total. How many stickers does Cian need to fill the grid, written as 12²?

What is 12 squared? (12²)

2 The school's sponsored read-a-thon set a target of 8528 pages for 5th class to read between Halloween and Christmas. By the start of the sleepover fundraiser night, the class had read 3386 pages. How many pages are left to reach the target?