

## Square numbers and number patterns

### WHAT THIS LESSON TEACHES

A square number is made when a whole number is multiplied by itself, forming a perfect square array of dots.

→  $5 \times 5 = 25$ , so 25 is a square number.

→ 7 squared means  $7 \times 7 = 49$ .

### MODEL THIS ON THE BOARD

#### FINDING A SQUARE NUMBER

- 1 Count the side length of the square array of dots.
- 2 Multiply that side length by itself to get the total dots.
- 3 Write it as  $n \text{ squared} = n \times n = \text{total}$ .

### ANSWER KEY

c) 36

Q1: 49

Q2: 64

Q3: 25

Q4: 225

Q5: 484

Q6: 169

a) **Always** — By definition, square numbers form exact  $n$ -by- $n$  grids.

b) **Always** — Because 6 squared is 36, following 5 squared.

c) **Sometimes** — They are even only when the side length is even.

d) **Never** — Gaps between consecutive squares are always odd numbers.

### EXTENSION SHEET · STRETCH ANSWERS

S1: 144

S2: 100

S3: 49