# Square numbers

Mathematics

Mr Maseko
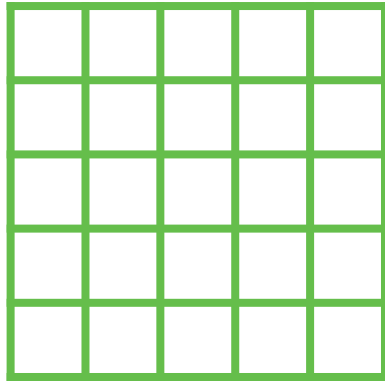
# **Try this**

A **square number** is the result of multiplying an integer by itself

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

You can build an array
with 25 square tile

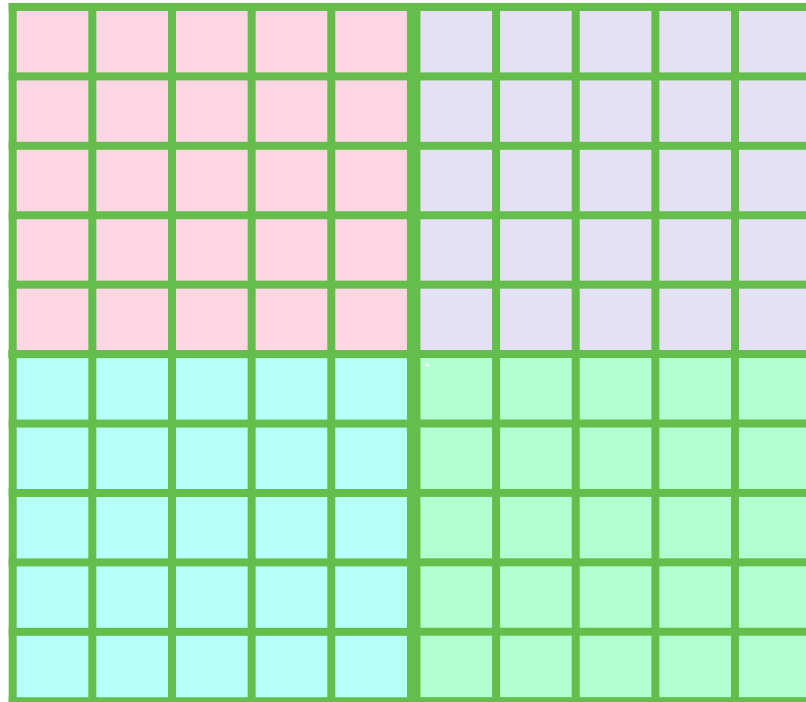List 3 more square numbers and draw an array for each one.

What happens when you multiply a square number by 4?
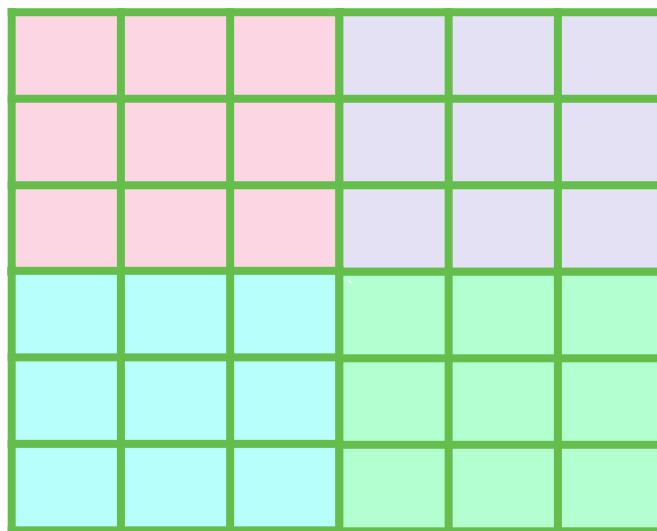
# Connect

## Multiplying a square number by 4

25 x 4 = 5 x 5 x 2 x 2 = 5 x 2 x 5 x 2 = 10 x 10

# Connect

## Multiplying a square number by 4

$$9 \times 4 = 3 \times 3 \times 2 \times 2 = 3 \times 2 \times 3 \times 2 = 6 \times 6$$

# Independent task

1) List the first 10 square numbers?

2) Calculate $10^2 - 4^2$

3) Write 64 as the product of 2 square numbers both greater than 1.

4) These numbers have been arranged so that each pair of **adjacent numbers** sums to a square number. 3, 6, 19, 30, 6, 58

Make you own line of six numbers that have the same property

# Explore

1) Write other calculations and draw diagrams that show that Anton is correct.

2) Is there a way we can show this is true every time we multiply a square number by another square number?
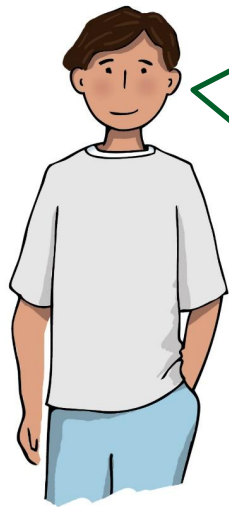
9 x 4 = 36

If I multiply a square number by another square number, the answer will be a square number.