

Max's Mathematical Squares: A Year 5 Challenge

Learning objective: To recognise, identify, and apply square numbers up to 12×12 , and understand the relationship between area and square numbers.

Use these flashcards to test your knowledge of square numbers. Max the Monkey has prepared these to help you master the patterns hidden within multiplication. Read the front, think of the answer, and flip to check your logic!

What is the definition of a square number?

A square number is the product of an integer multiplied by itself (e.g., $3 \times 3 = 9$).

What is the square of 4?

16 ($4 \times 4 = 16$).

If a square has a side length of 7cm, what is its area?

49cm^2 ($7 \times 7 = 49$).

Which square number is equal to 81?

9 ($9 \times 9 = 81$).

Is 20 a square number? Justify your answer.

No. There is no whole number that can be multiplied by itself to equal 20.

What is 12 squared (12^2)?

144.

Max has 36 square tiles. Can he arrange them into a perfect square shape?

Yes, because 36 is a square number (6×6).

What is the next square number after 25?

36.

Explain the relationship between a square's area and the term 'square number'.

The area of a square is calculated by side $\times$ side; because the sides are equal, the area is always a square number.

Calculate: $10^2 + 2^2$

104 ($100 + 4 = 104$).

If a square has an area of 64m^2 , what is the length of one side?

8m.

True or False: All square numbers are even. Justify your answer.

False. For example, $3 \times 3 = 9$ and $5 \times 5 = 25$, which are both odd.