Max’s Magnificent Maths Lab: The Cube Number Challenge

Learning objective: To identify, calculate, and apply knowledge of cube numbers up to 12 cubed.

Help Max the monkey solve his latest maths puzzle! Use this fact-file to define what a cube number is, record your calculations, and solve Max's challenges. Remember: a cube number is a number multiplied by itself three times (n × n × n).

Word bank: Product · Multiplier · Three-dimensional · Volume · Calculate · Integer · Equation

1. The Definition: Explain in your own words what a cube number is and why it is called a 'cube'. (2 marks)

2. The Calculation: Max has a pile of 64 identical blocks. If he builds a perfect cube, how many blocks are in each row, column, and layer? Show your working out. (2 marks)

3. The Pattern: List the first five cube numbers. Which one is the smallest? Which one is the largest? (2 marks)

4. The Comparison: Is 100 a cube number? Explain how you know using your knowledge of multiplication. (3 marks)

5. The Puzzle: Max wants to buy 5 small wooden cubes that each cost £2.00 to build a larger structure. If he needs to calculate the total cost for 5^3 cubes, how much money will he spend in total? (3 marks)

Extension challenge: Challenge: Max is thinking of a cube number that is greater than 100 but less than 500. Can you identify which number it is and write the equation to prove it?