Max’s Mathematical Square Hunt

Learning objective: To identify, calculate, and apply square numbers up to 12 squared (12^2).

Help Max the monkey solve his square number puzzles! Use the definitions to fill in the boxes, show your calculations clearly, and solve the word problems at the bottom. Remember: a square number is the result of multiplying a whole number by itself.

Word bank: Square number · Product · Multiply · Array · Index notation · Factor

1. The Definition of a Square: Explain in your own words what happens to a number when it is squared. Give an example using the number 4. (2 marks)

2. Max’s Calculation Table: List the first six square numbers (starting from 1^2) and write the multiplication calculation used to find each one. (3 marks)

3. Pattern Recognition: Zara the zebra has noticed that square numbers can be drawn as dots in a square shape. If you have a square with 7 dots along each side, how many dots are there in total? Show your working. (2 marks)

4. The Market Stall Challenge: A farmer is arranging oranges into a perfect square display. He has 81 oranges. How many oranges must he place along each side of his square? (2 marks)

5. Budgeting with Squares: Max wants to buy square tiles that cost £1 each. If he needs to cover a square floor area that is 9 tiles wide by 9 tiles long, how much will the tiles cost in total? (2 marks)

Extension challenge: Challenge: Can you identify which numbers between 1 and 100 are NOT square numbers? Choose three of them and explain why they do not fit the rule.