

Max's Mathematical Square Hunt

Learning objective: To identify, calculate, and apply knowledge of square numbers up to 12×12 , and recognise square numbers as the area of a square.

Join Max the monkey on his mathematical adventure! Read each question carefully. For multiple-choice questions, select the correct letter. For True/False and short-answer questions, write your response clearly.

Answer Key: 1. B (16); 2. True; 3. 25; 4. A (144); 5. False (81 is 9×9); 6. 100; 7. C (49); 8. True; 9. 1; 10. 121.
Greater Depth Reasoning: Square numbers are formed by multiplying an integer by itself. A square with side length 5cm has an area of 25cm^2 because $5 \times 5 = 25$.

Word bank: Square number · Product · Area · Integer · Dimensions · Calculation

1. Max finds 4 piles of coconuts with 4 coconuts in each. How many coconuts does he have in total? A) 8, B) 16*, C) 12, D) 20 (1 mark)

2. True or False: The number 36 is a square number because $6 \times 6 = 36$. (1 mark)

3. What is the square of 5? (1 mark)

4. Which of these is the square of 12? A) 144*, B) 120, C) 140, D) 169 (1 mark)

5. True or False: 80 is a square number. (1 mark)

6. Max arranges his pebbles into a square grid that is 10 pebbles long and 10 pebbles wide. How many pebbles are there in total? (1 mark)

7. Which of these is a square number? A) 10, B) 20, C) 49*, D) 50 (1 mark)

8. True or False: A square with a side length of £3 (if we treat the side as a value) would have an area represented by the square number 9. (1 mark)

9. What is the smallest square number greater than zero? (1 mark)

10. If Max has 11 rows of 11 bananas, what square number represents his total? (1 mark)

Draw: Draw a 4x4 grid of squares and label the total number of squares as a 'square number'.



Extension challenge: 1. Explain why a rectangle with sides of 4cm and 6cm cannot be a square number. 2. Compare and contrast a prime number and a square number; can a number ever be both? 3. Justify your answer: If you double the side length of a square, does the total area double? Prove it with an example. 4. What might happen if we tried to arrange 20 items into a perfect square? 5. Create a sequence of the first six square numbers. 6. If a square garden has an area of 100m^2 , how much would it cost to fence if the fencing costs £5 per metre?