Max’s Mathematical Mystery: The Missing Values

Learning objective: To solve missing number problems and understand simple algebraic equations using inverse operations.

Help Max the monkey solve these number puzzles! Read each problem carefully, find the missing value (represented by a symbol or a question mark), and show your working out.

Max the monkey is organising his jungle shop. He likes to keep his fruit balanced on his scales so that both sides weigh the same. He uses maths to work out how many pieces of fruit are in each basket. If a basket has a question mark on it, Max uses his knowledge of addition, subtraction, multiplication, and division to find the missing number. Remember, if you add something to one side, you must add it to the other to keep the scale balanced!

Word bank: Equation · Inverse · Variable · Operation · Balance

1. Max has 15 bananas. He adds some more from a secret box and now he has 24. Write an equation using 'b' for the missing bananas: 15 + b = 24. What is the value of b? (2 marks)

2. Max puts 4 bunches of grapes on a scale. Each bunch costs £3. The total price is represented by 'p'. Write the equation and solve for p: 4 x £3 = p. (2 marks)

3. Max has a bag of 30 limes. He shares them equally into 5 baskets. Let 'm' be the number of limes in each basket. Solve the equation: 5 x m = 30. (2 marks)

4. Max finds a mystery bag of coconuts. He knows that 12 + ? = 20. What is the mystery number? (1 mark)

5. Max has £10. He buys a pineapple for £4 and some mangoes for £m. He has £2 left. Write an equation to represent this: £10 - £4 - m = £2. What is the value of m? (3 marks)

Draw: Draw a set of balance scales. On one side, draw 5 apples and a box with a question mark. On the other side, draw 12 apples. Label the drawing with the equation: 5 + ? = 12.

Extension challenge: Max has a super-challenge: If 2 x a = 10, and a + b = 12, can you work out the value of 'b'? Explain how you found your answer.