Max’s Coordinate Quest

Learning objective: To identify, describe and represent the position of a point following reflections or translations on all four quadrants of the coordinate plane.

Help Max the monkey solve these coordinate puzzles! Remember: always go along the corridor (x-axis) before you go up or down the stairs (y-axis).

Answer Key: 1. (3, 2) - C; 2. (0, 0) - True; 3. (5, -4); 4. (-2, 3) - B; 5. False (it is a horizontal line); 6. (-3, -1); 7. 4; 8. (2, 5); 9. True; 10. (4, -2).

Word bank: x-axis · y-axis · origin · quadrant · translate · reflect · coordinate · integer

1. Max is standing at (3, 2). If he moves 0 units horizontally and 0 units vertically, where is he? A) (0, 0) B) (2, 3) C) (3, 2)* D) (3, 0) (1 mark)

2. True or False: The point (0, 0) is known as the origin. (1 mark)

3. If a point is at (5, 2) and is translated 6 units down, what are the new coordinates? (1 mark)

4. Which coordinate represents a point in the second quadrant? A) (2, 2) B) (-2, 3)* C) (2, -3) D) (-2, -3) (1 mark)

5. True or False: A line where all points have the same y-coordinate is a vertical line. (1 mark)

6. Reflect the point (3, -1) across the y-axis. What is the new coordinate? (1 mark)

7. How many quadrants are there on a standard Cartesian coordinate plane? (1 mark)

8. Max starts at (-2, 5). He moves 4 units to the right. What is his new x-coordinate? (1 mark)

9. True or False: The x-axis is the horizontal line on a coordinate grid. (1 mark)

10. If you reflect the point (-4, -2) across the y-axis, what is the new coordinate? (1 mark)

Draw: Draw a 4-quadrant coordinate grid and plot a triangle with vertices at (1, 1), (3, 1), and (2, 4). Label the x-axis and y-axis.

Extension challenge: Max has £10.00 to spend on bananas. If each banana costs £0.50, and he places his bananas on a grid where the cost is the x-coordinate and the number of bananas is the y-coordinate, plot the points for buying 1, 2, 5, and 10 bananas.