

Max's Coordinate Map Adventure

Learning objective: To describe positions on a 2-D grid as coordinates in the first quadrant and plot points using (x, y) notation.

Max the monkey has hidden treasures all over his jungle grid! Use your knowledge of coordinates to help him map his findings. Remember the golden rule of coordinates: 'Along the corridor (x-axis) and then up the stairs (y-axis)!' Use a pencil and ruler to plot the points accurately.

Word bank: x-axis · y-axis · origin · coordinate · horizontal · vertical · plot · position · quadrant

1. Identify the Treasure: Max has placed a shiny gold coin at coordinate (3, 5). Describe the steps you took to locate this position on the grid and explain why you must move along the x-axis before the y-axis. (3 marks)

2. Plotting the Path: Max wants to hide a banana at (7, 2) and a mango at (2, 8). Plot these points on your grid and label them clearly. Justify why these two coordinates represent completely different locations despite using the same numbers. (3 marks)

3. Calculating Distance: If Max moves from the banana at (7, 2) to the gold coin at (3, 5), how many squares does he move horizontally and how many squares does he move vertically? Show your working out. (3 marks)

4. Compare and Contrast: Compare the coordinates (4, 1) and (1, 4). How does the orientation of the point change when the x and y values are swapped? Explain the effect this has on the final position. (3 marks)

5. Problem Solving: Max says he is standing at a point where the x-coordinate is double the y-coordinate. If he is at (8, 4), is he correct? What might happen if he mistakenly swapped them to (4, 8)? (3 marks)

6. Creative Extension: Design your own treasure map on a 10x10 grid. Create a list of three clues using coordinates that lead a friend to a 'hidden prize'. Why is it important to be precise when giving coordinate directions? (4 marks)

Extension challenge: Challenge: Investigate shapes on a coordinate plane. If you plot the points (2, 2), (6, 2), (6, 5), and (2, 5), what shape have you created? Justify your answer by calculating the side lengths using the grid units.