Max’s Geometric Garden Adventure

Learning objective: To identify, describe, and classify 2D shapes based on their properties, including parallel and perpendicular lines.

Read about Max the monkey’s garden project below. Use your knowledge of 2D shapes to answer the questions. Remember to look for right angles, parallel sides, and equal lengths!

Max the monkey is designing a new vegetable patch in his garden. He wants to plant his carrots in a perfect square, his peas in a rectangle, and his prize-winning pumpkins in a rhombus. Max has measured his garden beds carefully. He knows that his square bed has four equal sides and four right angles. His rectangular pea patch has two pairs of parallel sides and four right angles. Max is very careful to make sure all his lines are straight so his garden looks neat and tidy for his friends to visit.

Word bank: parallel · perpendicular · quadrilateral · polygon · vertex · right angle

1. Max says his square garden bed has four right angles. How can you prove a shape has a right angle? (2 marks)

2. Look at the rectangle pea patch. What is the difference between parallel lines and perpendicular lines? (2 marks)

3. Max wants to add a triangular patch for his radishes. If it is an equilateral triangle, what do we know about its side lengths? (1 mark)

4. Is a rhombus a quadrilateral? Explain why using the mathematical definition of a quadrilateral. (2 marks)

5. If Max buys a decorative fence for his square garden and each side is 3 metres long, what is the total length of fencing he needs in metres? (1 mark)

Draw: Draw a composite shape that combines a square and a triangle, then label the parallel lines with arrows and the right angles with small squares.

Extension challenge: Challenge: If Max has £20 to spend on seeds and each packet costs £2.50, how many packets can he buy? If he uses these packets to fill his garden, draw a design showing how he could arrange these packets into a symmetrical pattern.