Max’s Geometry Garden

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

Read the story below and use your knowledge of geometry to answer the questions. Make sure to look carefully at the properties of the shapes mentioned.

Max the monkey was busy redesigning his garden. He wanted everything to be perfectly mathematical! He started by laying out a square flowerbed. He noted that all four sides were equal in length and the corners met at perfect right-angles. Next, he added a wooden path in the shape of a parallelogram. Max measured it carefully; he noticed that the opposite sides were parallel, but there were no right-angles to be found. Finally, he built a small triangular birdhouse. He chose a scalene triangle shape, ensuring that every side was a different length. Max felt very proud of his garden, as every shape had its own special set of properties.

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

1. Max describes his flowerbed as a square. Explain why a square is a special type of quadrilateral. (2 marks)

2. What is the difference between the lines in Max’s square flowerbed and the lines in his parallelogram path? (2 marks)

3. If Max wants to add a new sign that is a regular pentagon, how many sides and vertices will it have? (2 marks)

4. Why can’t Max’s triangular birdhouse have any parallel lines? (2 marks)

5. Max finds a stone shaped like a rectangle. If the perimeter is 20cm and one side is 6cm, what is the length of the other side? (2 marks)

Draw: Draw Max’s garden layout. Include the square flowerbed, the parallelogram path, and the triangular birdhouse. Label the parallel lines with arrows and mark the right-angles with a small square symbol.

Extension challenge: Max wants to build a new pond in the shape of a regular hexagon. Can you calculate the sum of the interior angles of a hexagon, or explain how many triangles you could fit inside it if you drew lines from one vertex to all others?