Max’s Magnificent Shape Hunt

Learning objective: To identify, describe, and classify 2D and 3D shapes, including identifying lines of symmetry and measuring angles.

Read the clues provided by Max the monkey and answer the questions below. Remember to use your knowledge of vertices, edges, and faces.

Max the monkey is exploring the local park to find shapes for his maths project. He finds a rectangular sign that has two pairs of parallel sides. Next, he spots a square-based pyramid sitting on a bench. He notices that the pyramid has five faces and five vertices. Finally, he looks at a circular pond and thinks about how its properties differ from a polygon. Max needs your help to finish his report!

Word bank: polygon · symmetry · acute · obtuse · vertex · parallel · perpendicular

1. Max finds a shape with 4 equal sides and 4 right angles. What is the name of this shape, and how many lines of symmetry does it have? (2 marks)

2. Look at the square-based pyramid Max found. How many edges does it have in total? (1 mark)

3. Max draws an angle that is smaller than a right angle. What is the mathematical name for this type of angle? (1 mark)

4. A regular hexagon has how many vertices and how many sides? (2 marks)

5. Max buys a triangular prism from a craft stall for £4.50. If he pays with a £10 note, how much change should he receive? Explain why a triangular prism is not a polygon. (3 marks)

Draw: Draw a shape that has exactly two lines of symmetry and label the vertices.

Extension challenge: Max wants to build a 3D structure using 8 cubes. Can you write a list of instructions for how many faces, edges, and vertices a single cube has, and then predict how many faces a shape made of two joined cubes would have?