Max’s Magnificent Shape Hunt

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

Read the information below about Max the monkey’s shape collection and use your maths skills to answer the questions. Remember to check for right angles and lines of symmetry!

Max the monkey is organising his collection of jungle treasures. He has found several interesting objects. He has a square tile that he uses to balance his fruit, which has four equal sides and four right angles. He also has a triangular leaf that is an equilateral triangle, meaning all three sides are the same length. Max loves looking for lines of symmetry; he noticed that his favourite hexagonal honeycomb piece has six lines of symmetry! When looking at his wooden blocks, he found a cuboid that has 8 vertices and 12 edges. Max is currently trying to build a pattern using only quadrilaterals that have at least one pair of parallel sides.

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

1. Max has a square tile. How many lines of symmetry does a square have? Explain how you know. (2 marks)

2. Look at the hexagon Max found. If a hexagon has 6 sides, how many vertices does it have? (1 mark)

3. Max has a shape with four sides, two pairs of parallel sides, and four right angles. What is the name of this shape? (1 mark)

4. Why is an equilateral triangle different from a scalene triangle? (2 marks)

5. Max finds a shape with one angle that is smaller than a right angle (an acute angle). Is it possible for a square to have an acute angle? Why or why not? (2 marks)

Draw: Draw a composite shape made up of one rectangle and one triangle. Label all the right angles you can find in your drawing.

Extension challenge: Max wants to create a pattern using only shapes with rotational symmetry. Can you draw a sequence of three shapes that follow a pattern based on their number of sides?