Max’s Shape-Shifting Maths Adventure

Learning objective: To identify, describe, and compare 2D and 3D shapes, including properties such as vertices, edges, and lines of symmetry.

Help Max the monkey solve his shape puzzles! Read the definitions carefully and answer the questions below. Remember to look for features like parallel lines, symmetry, and the number of faces on 3D objects.

Max the monkey is organising his jungle storage shed. He has found various objects that remind him of shapes. He has a square tile, a triangular prism block, a hexagonal honeycomb piece, and a circular dinner plate. Max wants to make sure he knows exactly how many vertices and edges each item has so he can label them perfectly. He also needs to check which of his flat, 2D shapes have lines of symmetry so he can decorate them for his maths display.

Word bank: Vertex · Symmetry · Parallel · Polygon · Face · Edge · Perpendicular

1. Max has a regular hexagon. How many vertices does it have, and how many lines of symmetry can you draw on it? (2 marks)

2. Max is looking at a triangular prism. How many faces does it have in total? (2 marks)

3. Explain the difference between a parallel line and a perpendicular line. You may draw a small diagram to help your explanation. (2 marks)

4. A shape has 4 sides of equal length, but no right angles. What is the name of this 2D shape? (1 mark)

5. Max finds a cylinder. Does it have any vertices? Explain your reasoning. (2 marks)

Draw: Draw a composite 2D shape made up of a rectangle and a triangle, then draw all the possible lines of symmetry on your new shape.

Extension challenge: Max has a challenge for you: Can you name a 3D shape that has 8 vertices and 6 square faces? Once named, describe how many edges it has.