Max’s Magnificent Mirror Patterns

Learning objective: To identify, describe and represent the position of a shape following a reflection, and to identify lines of symmetry in 2D shapes.

Help Max the monkey solve his maths puzzles by looking at symmetry. Use a ruler to help you draw accurate lines of symmetry and reflections.

Max the monkey is helping his friends decorate their jungle clubhouse. He noticed that many shapes in nature have perfect balance. If you fold a shape along a line of symmetry, both halves match exactly. This is called a reflection. Some shapes have one line of symmetry, while others, like a regular square, have four! Max wants to make sure the clubhouse patterns are perfectly balanced so they look tidy and beautiful.

Word bank: Symmetry · Reflection · Mirror line · Horizontal · Vertical · Diagonal · Congruent

1. Max has a square tile. Draw all the lines of symmetry on a square and explain why a square has more than one line of symmetry. (2 marks)

2. Look at the letter 'A'. Does it have a horizontal or vertical line of symmetry? Explain your choice. (2 marks)

3. If a shape is reflected across a vertical mirror line, what happens to the distance between the shape and the line on the other side? (2 marks)

4. Max draws a scalene triangle. How many lines of symmetry does it have? Justify your answer. (2 marks)

5. A pattern costs £4.50 to print. If Max wants to reflect this pattern to create a symmetrical design, he needs to print two of them. What is the total cost for the two prints? (1 mark)

Draw: Draw a 5x5 grid. In the left side of the grid, draw a simple shape (like a triangle or a lightning bolt). Draw a vertical mirror line in the centre of the grid and draw the correct reflection of your shape on the right side.

Extension challenge: Research regular polygons. Can you find out the rule for how many lines of symmetry a regular polygon has based on the number of sides it possesses?