Max’s Pattern Puzzles: Non-Verbal Reasoning Challenge

Learning objective: To develop spatial awareness and logical deduction skills by identifying sequences and transformations in geometric patterns.

Look closely at the shapes, rotations, and shading in each sequence. Max the monkey has spotted a pattern in his jungle puzzles! Choose the correct option that completes the sequence based on the logical rule provided.

Max is organising his collection of jungle shapes. He has noticed that every sequence follows a strict rule. Sometimes the shape rotates 90 degrees clockwise, sometimes it reflects across a vertical axis, and sometimes the shading moves from one section to another. To solve these, you must look at how the shape changes from the first box to the second, and apply that same rule to the third box to find the answer.

Word bank: rotation · symmetry · sequence · transformation · clockwise · anticlockwise · geometric · reflection

1. If a square with a shaded triangle in the top-right corner rotates 90 degrees clockwise, where will the shaded triangle be in the next step? Describe the new position. (2 marks)

2. A sequence shows a circle, then a hexagon, then an octagon. If the number of sides increases by two each time, what shape would come next and why? (2 marks)

3. Max has a shape that reflects across a vertical line. If the original shape has a dot on the left side, where will the dot be after the reflection? (2 marks)

4. In a sequence, a triangle turns from pointing upwards to pointing downwards. If this is a 180-degree turn, what happens if the triangle turns another 180 degrees? (2 marks)

5. Look at a pattern where a shaded square moves one position clockwise around a 2x2 grid. If it starts in the top-left, where will it be after three moves? (2 marks)

Draw: Draw a 3-step sequence where a simple shape (like a star) rotates 90 degrees clockwise in each step. Label the rotation for each stage.

Extension challenge: Create your own 'odd one out' puzzle using four different geometric shapes. Three must share a common property (e.g., all have line symmetry), and one must be different. Explain why your chosen shape is the odd one out.