

Max's Mind-Bending Pattern Challenge

Learning objective: To develop spatial awareness and logical deduction skills by identifying sequences, analogies, and rotations in non-verbal patterns.

Max the monkey has been busy creating puzzles! Use your logic to spot the patterns. For multiple-choice questions, select the best option.

Answer Key: 1.C, 2.True, 3.B, 4.Clockwise, 5.D, 6.False, 7.A, 8.Rotation, 9.C, 10.B. Explanation: Non-verbal reasoning tests your ability to spot relationships between shapes and patterns without using words.

Word bank: Rotation · Sequence · Reflection · Symmetry · Analogy · Spatial · Orientation · Transformation

1. 1. Look at this sequence: A triangle, a square, a pentagon. What comes next? A) A circle, B) A line, C) A hexagon*, D) A star. (1 mark)

2. 2. True or False: If a shape is rotated 360 degrees, it returns to its original orientation. True/False? (1 mark)

3. 3. Which shape is the odd one out? A) Square, B) Circle*, C) Rectangle, D) Rhombus (Hint: Consider vertices). (1 mark)

4. 4. If a shape turns 90 degrees to the right, is it turning clockwise or anti-clockwise? (1 mark)

5. 5. Which figure completes the analogy? Square is to Cube as Circle is to... A) Triangle, B) Oval, C) Ring, D) Sphere*. (1 mark)

6. 6. True or False: A reflection creates a shape that is identical in size but horizontally flipped. (1 mark)

7. 7. If you have a pattern of: Up arrow, Down arrow, Up arrow... what is the next symbol? A) Down arrow*, B) Up arrow, C) Left arrow, D) Right arrow. (1 mark)

8. 8. What is the mathematical term for turning a shape around a central point? (1 mark)

9. 9. Identify the missing piece in this grid of patterns: A) Shaded square*, B) Empty circle, C) Line, D) Cross. (1 mark)

10. 10. If a shape has a vertical line of symmetry, which side is the mirror image of the other? A) Top/Bottom, B) Left/Right*, C) Corner/Corner, D) None. (1 mark)

Draw: Draw a complex shape that has at least two lines of symmetry, then draw its reflection on the right side of the page.



Extension challenge: Max challenges you: 1. Explain why a circle has infinite lines of symmetry while a square only has four. 2. Compare and contrast a rotation with a reflection; how do they change the object's position? 3. Justify why the 'odd one out' in question 3 is the correct choice based on geometric properties. 4. What might happen to a pattern if it was reflected twice? 5. Create your own 3-step sequence pattern and ask a partner to solve it. 6. If a 2D shape is rotated 180 degrees, does its area change? Justify your answer.