

Max's Magnificent Pattern Quest

Learning objective: To develop spatial awareness, logical deduction, and pattern recognition skills through visual reasoning tasks.

Max the monkey has been busy creating visual puzzles! Use your sharp eyes to spot the sequences, identify the odd one out, and rotate shapes in your mind. Read each question carefully before choosing your answer.

Answer Key: 1.C, 2.True, 3.B, 4.False, 5.C, 6.Rotate, 7.D, 8.True, 9.B, 10.A. Extension guidance: Encourage students to explain the specific transformation (e.g., 90-degree clockwise turn, reflection across a vertical axis).

Word bank: Sequence · Rotate · Reflect · Symmetry · Pattern · Visualise · Logical · Deduce

1. 1. Look at this sequence: A square, a triangle, a circle, a square, a triangle... What comes next? A) Square B) Triangle C) Circle* D) Hexagon (1 mark)

2. 2. True or False: If you reflect a shape across a vertical line of symmetry, the shape changes its total area. (Answer: False) (1 mark)

3. 3. Which of these shapes does not belong in the group? A) Square B) Circle* C) Rectangle D) Rhombus (Reason: Circle has no straight edges) (1 mark)

4. 4. True or False: Rotating a shape 360 degrees returns it to its original orientation. (Answer: True) (1 mark)

5. 5. If a shape is shaded on the left, and then shifts to the right in the next box, where is it likely to be next? A) Middle B) Top C) Left* D) Bottom (1 mark)

6. 6. Fill in the blank: To turn a shape on its side without changing its size or shape, you must _____ it. (1 mark)

7. 7. Identify the odd one out: A) Square B) Cube C) Sphere D) Triangle* (Reason: Triangle is 2D, others are 3D) (1 mark)

8. 8. True or False: A pattern that repeats every three shapes is called a 'ternary sequence'. (Answer: True) (1 mark)

9. 9. If you have a £2 coin and a £1 coin, and you arrange them in a sequence with a 50p coin, which shape property could you use to sort them? A) Colour B) Size* C) Texture D) Weight (1 mark)

10. 10. Which is the mirror image of the letter 'A'? A) A* B) V C) U D) O (1 mark)

Draw: Draw a pattern that uses three different shapes and two different colours, ensuring the pattern repeats at least twice. Then, draw what the sequence would look like if it were reflected in a mirror.



Extension challenge: Greater Depth Questions: 1. Explain why a circle has infinite lines of symmetry while a square has only four. 2. Compare and contrast reflection and rotation: how do they change the position of a shape? 3. Justify your answer: If a sequence follows a 90-degree clockwise rotation, what would the fifth shape look like if the first shape is an 'L'? 4. What might happen to a pattern if you applied both a reflection and a rotation simultaneously? 5. Create a complex sequence using symbols and challenge a partner to identify the rule. 6. Design a 3D object and explain how its cross-sections would look if cut horizontally versus vertically.