Year 3 Non-Verbal Reasoning Assessment: Patterns and Logic

Learning objective: To identify, describe, and complete visual patterns and logical sequences using spatial awareness.

Read each question carefully. Use a pencil to complete the sequences and answer the questions. You have 30 minutes to complete this assessment.

Max the monkey loves to find patterns in the jungle. He uses his sharp eyes to spot how shapes change, turn, and grow. Help Max solve these visual puzzles by looking closely at how the shapes move and change.

Word bank: rotate · sequence · symmetry · pattern · reflect · clockwise

1. Look at this sequence: A triangle pointing up, a triangle pointing right, a triangle pointing down. What is the next shape in the sequence and which way does it point? (2 marks)

2. If a square is rotated 90 degrees clockwise, does its appearance change? Explain your reasoning using the word 'symmetry'. (3 marks)

3. In a line of shapes, a circle is followed by a square, then a circle, then a square. If the pattern continues, what are the next two shapes? Draw them below. (2 marks)

4. Zara the zebra has a pattern on her scarf: Stripe, dot, stripe, dot, stripe. If the pattern continues for 10 shapes in total, how many stripes will there be? Show your working out. (4 marks)

5. Look at a capital letter 'A'. If you draw a line of symmetry down the middle, are the two sides identical? Describe why or why not. (4 marks)

6. Kit the fox is building a pattern using coins. He uses a £1 coin, then a 50p coin, then a £1 coin, then a 50p coin. If he adds four more coins to the sequence, what will the total value of these four new coins be? Show your calculation. (5 marks)

7. Explain the rule for this sequence: 2, 4, 8, 16. How would you describe the way these numbers grow? (5 marks)

Draw: Draw a shape that has exactly two lines of symmetry. Label the lines of symmetry with a dotted line.

Extension challenge: Total: /25