

Max's Geometry Detective Log

Learning objective: To identify, describe, and compare properties of 2D shapes, including quadrilaterals and triangles, and classify angles as acute, obtuse, or right angles.

Max the monkey has found some mysterious shapes scattered around the classroom! Use this log to act as a geometry detective. Measure the angles, count the sides, and justify why each shape belongs to its specific family.

Word bank: quadrilateral · parallel · perpendicular · acute · obtuse · isosceles · scalene · symmetry · vertices

1. Shape Analysis: Identify a 2D shape you have found. State its name and list its geometric properties, such as the number of sides, vertices, and whether it has any lines of symmetry. (3 marks)

2. Angle Investigation: Describe the angles found inside your chosen shape. Are they acute, obtuse, or right angles? Explain how you know. (3 marks)

3. Comparison: Compare a square and a rhombus. Identify one similarity and one difference in their properties. Justify your answer using mathematical vocabulary. (4 marks)

4. Logical Reasoning: Max claims that all rectangles are quadrilaterals, but not all quadrilaterals are rectangles. Explain why he is correct. (3 marks)

5. Hypothesis: What might happen to the properties of a triangle if you were to change one of its internal angles from acute to obtuse? Describe the change. (3 marks)

6. Creative Design: If you were to draw a complex shape with at least two pairs of parallel lines and at least one reflex angle, what would it look like? Describe your shape. (4 marks)

Extension challenge: Design a 'Geometry Treasure Map' on a separate sheet. Include at least four different 2D shapes as landmarks. Write a set of instructions for a friend to follow that uses precise geometric language (e.g., 'walk parallel to the triangle's base', 'turn 90 degrees at the vertex of the square').