

Max's Magnificent Geometry Challenge

Learning objective: To identify, describe, and compare properties of 2D and 3D shapes, including angles and lines of symmetry.

Join Max the monkey as he explores the geometry of the jungle! Read each question carefully. For multiple-choice questions, select the correct letter. For True/False and short-answer questions, write your response clearly.

Answer Key: 1.C, 2.True, 3.Perpendicular, 4.B, 5.False, 6.Obtuse, 7.True, 8.A, 9.Reflex, 10.Polygons. Note: Ensure students use a ruler for drawing tasks.

Word bank: acute · obtuse · reflex · parallel · perpendicular · symmetry · polygon · vertex · quadrilateral · irregular

1. 1. Max is looking at a triangle with all sides of different lengths. What is this called? A) Equilateral B) Isosceles C) Scalene D) Square (1 mark)

2. 2. True or False: A square is always a type of rectangle. (1 mark)

3. 3. What do we call lines that meet at a 90-degree angle? (1 word) (1 mark)

4. 4. Which of these shapes has exactly four lines of symmetry? A) Triangle B) Square C) Parallelogram D) Pentagon (1 mark)

5. 5. True or False: A regular hexagon has internal angles that are all different sizes. (1 mark)

6. 6. An angle that is greater than 90 degrees but less than 180 degrees is called a(n) _____ angle. (1 mark)

7. 7. True or False: A cuboid has 8 vertices. (1 mark)

8. 8. Which shape would you get if you rotated a right-angled triangle 360 degrees around its vertical side? A) Cone B) Sphere C) Cylinder D) Pyramid (1 mark)

9. 9. An angle that is greater than 180 degrees is known as a _____ angle. (1 mark)

10. 10. Shapes with straight sides that are closed are collectively known as what? (1 word) (1 mark)

Draw: Draw a composite shape made of a rectangle and a triangle. Label the parallel lines with arrows and mark one acute angle with a small arc.



Extension challenge: 1. Explain why a circle does not have any vertices. 2. Compare and contrast a rhombus and a square; how are their properties similar and how do they differ? 3. Justify your answer: Can an obtuse triangle also be a right-angled triangle? 4. What might happen to the properties of a shape if you were to translate it across a coordinate grid? 5. If a regular polygon has an interior angle of 108 degrees, calculate how many sides it has. 6. Design a pattern using only irregular polygons and describe the geometric rules you used to create it.