

Max's Magnificent Maths Shape Challenge

Learning objective: To identify, describe, and classify 2D and 3D shapes, including calculating missing angles and understanding properties of polygons.

Max the monkey is obsessed with patterns! Join him as he explores the geometry of the jungle. Answer these 10 questions to prove you are a master of shapes.

Answer Key: 1. C (180°), 2. True, 3. False (it has 5), 4. B (Reflex), 5. Trapezium, 6. True, 7. 135°, 8. A (4), 9. False (they are parallel), 10. Cube. Extension: Explain that a square is a regular polygon because all sides and angles are equal, whereas a rectangle is irregular as sides are not all equal.

Word bank: polygon · reflex · parallel · perpendicular · vertices · congruent · isosceles · quadrilateral

1. 1. Max is measuring triangles. What is the total sum of angles in any triangle? A) 90°, B) 360°, C) 180°, D) 270° (1 mark)

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

3. 3. True or False: A pentagon has 6 sides. (1 mark)

4. 4. What is the name of an angle that is greater than 180° but less than 360°? A) Obtuse, B) Reflex, C) Acute, D) Straight (1 mark)

5. 5. I am a quadrilateral with only one pair of parallel sides. What am I? (1 mark)

6. 6. True or False: A regular polygon has all sides and interior angles equal. (1 mark)

7. 7. If one angle in a triangle is 45° and another is 90°, what is the size of the third angle? (1 mark)

8. 8. How many lines of symmetry does a regular square have? A) 4, B) 2, C) 1, D) 0 (1 mark)

9. 9. True or False: The opposite sides of a parallelogram are perpendicular. (1 mark)

10. 10. Which 3D shape has 6 square faces, 8 vertices, and 12 edges? (1 mark)

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



Extension challenge: 1. Justify why a circle is not considered a polygon. 2. Compare and contrast a rhombus and a kite; what properties do they share? 3. Explain what might happen to the internal angles of a triangle if you were to increase one side length while keeping the others fixed. 4. If you have a regular hexagon, how many triangles can you divide it into by drawing lines from one vertex to all others? 5. Why is a square a special type of rectangle? 6. Describe how you would calculate the perimeter of a compound shape made of two squares joined together, given that each side of the squares is 5cm.