

Max the Math Monkey's Symmetry Safari

Learning objective: To identify, describe, and draw lines of symmetry in 2D shapes and patterns.

Help Max the Math Monkey find the hidden patterns in the jungle! Read each question carefully and circle the correct answer or write your response in the space provided.

Answer Key: 1) C, 2) True, 3) 4, 4) False, 5) B, 6) True, 7) A, 8) 0, 9) C, 10) False. Greater Depth

Explanations: Q11) A shape has reflective symmetry if one half is a mirror image of the other. Q12) A scalene triangle cannot have a line of symmetry because all sides and angles are different. Q13) A regular polygon has as many lines of symmetry as it has sides.

Word bank: Symmetry · Line of symmetry · Reflection · Vertical · Horizontal · Asymmetrical · Polygon

1. 1. Which of these shapes has exactly one vertical line of symmetry? A) A circle, B) A regular hexagon, C) An isosceles triangle, D) A parallelogram. (1 mark) (1 mark)

2. 2. True or False: A square has four lines of symmetry. (1 mark) (1 mark)

3. 3. How many lines of symmetry does a regular rhombus have? (1 mark) (1 mark)

4. 4. True or False: If you fold a shape along a line of symmetry, the two halves will not match exactly. (1 mark) (1 mark)

5. 5. Which capital letter has a horizontal line of symmetry? A) A, B) B, C) F, D) L. (1 mark) (1 mark)

6. 6. True or False: A shape that does not have any lines of symmetry is called asymmetrical. (1 mark) (1 mark)

7. 7. Which of these patterns shows reflection? A) A butterfly's wings, B) A row of footprints, C) A swirling river, D) A scattered pile of leaves. (1 mark) (1 mark)

8. 8. How many lines of symmetry does a scalene triangle have? (1 mark) (1 mark)

9. 9. A regular hexagon has how many lines of symmetry? A) 3, B) 5, C) 6, D) 8. (1 mark) (1 mark)

10. 10. True or False: A rectangle has more lines of symmetry than a square. (1 mark) (1 mark)

Draw: Max the Math Monkey has found a beautiful butterfly wing. Draw the other half of the butterfly wing so that the completed insect has a perfect vertical line of symmetry down the center.



Extension challenge: 11. Explain why a circle is said to have an infinite number of lines of symmetry. 12. Compare and contrast a square and a rectangle regarding their lines of symmetry; why does the square have more? 13. Justify why a regular polygon will always have the same number of lines of symmetry as it has sides. 14. What might happen to the symmetry of a shape if you rotate it by 90 degrees? 15. Create your own complex symmetrical pattern using a grid and describe its lines of symmetry. 16. If a shape costs £5.00 to print and you need to cut it along its line of symmetry to make two equal halves, how much does each half 'cost' in terms of its area?