

Year 4 Assessment: Exploring Symmetry

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

Read each question carefully. Use a ruler for drawing lines of symmetry. Max the Monkey is here to help you solve these mathematical puzzles!

Max the Monkey is decorating his treehouse with geometric patterns. He wants everything to be perfectly balanced. Zara the Zebra has helped him identify shapes that look the same on both sides. To be symmetrical, a shape must be able to be folded so that the two halves match exactly.

Word bank: Symmetry · Line of symmetry · Reflect · Horizontal · Vertical · Diagonal · Irregular

1. Define what a 'line of symmetry' is in your own words. (2 marks)

2. Look at a square and an irregular pentagon. Which one has more lines of symmetry? Explain your reasoning. (3 marks)

3. Max has a rectangular sign for his treehouse. Draw the rectangular sign and indicate every possible line of symmetry using a dashed line. (3 marks)

4. If a shape has a vertical line of symmetry, how does the left side compare to the right side? Use the word 'reflection' in your answer. (3 marks)

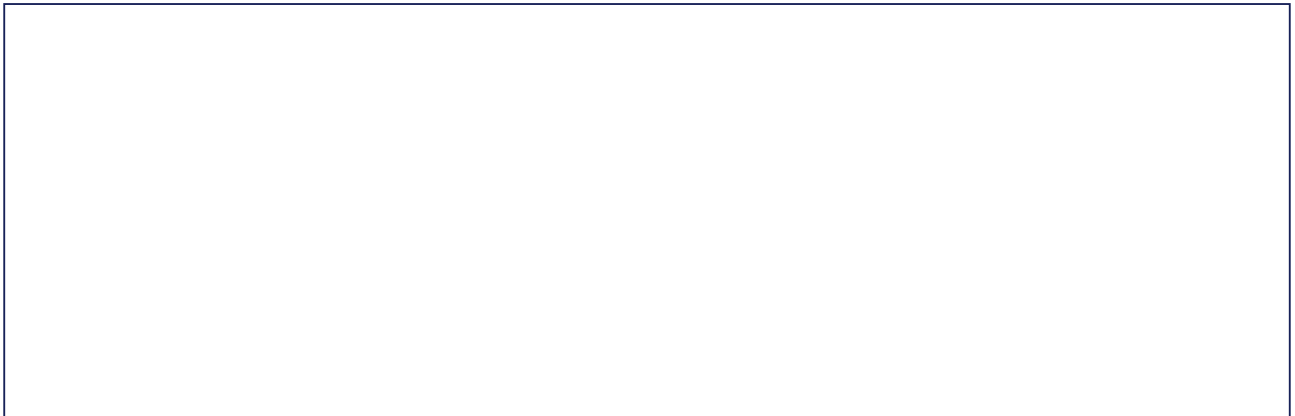
5. A shopkeeper sells patterned tiles. A tile costs £4.50. If the tile has two lines of symmetry, and you buy 4 tiles, how much do you spend in total? Show your working. (4 marks)

6. Zara the Zebra is creating an art piece. Explain why a circle has an infinite number of lines of symmetry, but a scalene triangle has zero. Use mathematical vocabulary to support your answer. (5 marks)

7. Identify one capital letter of the alphabet that has a horizontal line of symmetry and one that has a vertical line of symmetry. (2 marks)

8. Can a shape have symmetry but not be a regular polygon? Give one example. (3 marks)

Draw: Draw a 6x6 grid. Shade in squares to create a pattern that has exactly one vertical line of symmetry.



Extension challenge: Total: /25