Max’s Magnificent Symmetry Challenge

Learning objective: To identify, describe, and complete 2D shapes with line symmetry, and recognize lines of symmetry in 2D shapes presented in different orientations.

Use these flashcards to test your knowledge of symmetry. Max the Monkey has prepared these challenges to help you become a master of patterns and balance!

What is a line of symmetry?

An imaginary line where you can fold a shape in half so that both halves match perfectly.

If a shape is asymmetrical, what does this mean?

It means the shape does not have any lines of symmetry and cannot be folded to match perfectly.

How many lines of symmetry does a regular square have?

A square has 4 lines of symmetry (two diagonal, one horizontal, and one vertical).

True or False: A scalene triangle has at least one line of symmetry.

False. A scalene triangle has no lines of symmetry because all sides are different lengths.

What is the difference between a horizontal and a vertical line of symmetry?

A vertical line goes from top to bottom, while a horizontal line goes from left to right.

Max has a regular pentagon. How many lines of symmetry does it have?

A regular pentagon has 5 lines of symmetry.

Explain why a circle has an infinite number of lines of symmetry.

Because any line drawn through the center of a circle will divide it into two identical mirror-image halves.

Compare and contrast a rectangle and a square regarding their lines of symmetry.

A square has 4 lines of symmetry, while a rectangle only has 2 (vertical and horizontal). They both share the same axes of symmetry, but the rectangle lacks the diagonal symmetry of the square.

Justify your answer: Does the letter 'H' have a line of symmetry?

Yes, it has two: one vertical line down the center and one horizontal line across the middle.

What might happen if you reflect a shape across a diagonal line of symmetry?

The shape will appear to rotate or tilt as it is mirrored across that angled axis.

Max buys a patterned tile for £2.50. If the pattern is symmetrical, what is the minimum number of lines of symmetry it could have?

1 line of symmetry (if the pattern is mirrored on either side).

Why do some shapes have different numbers of lines of symmetry?

It depends on the number of equal sides and equal interior angles the shape possesses; the more regular the shape, the more lines of symmetry it typically has.