

Mastering Geometry with Max the Monkey

Learning objective: To identify, describe, and classify 2D and 3D shapes, including regular and irregular polygons, and understand angles and lines.

Read the front of the flashcard to test your knowledge of geometry. Flip to check your understanding of the definitions and mathematical properties. Use these for independent revision or to quiz a partner.

What is the definition of a regular polygon?

A polygon where all sides are of equal length and all interior angles are equal.

How many degrees are in a full turn?

360 degrees.

Define a reflex angle.

An angle that is greater than 180 degrees but less than 360 degrees.

What are perpendicular lines?

Two lines that meet at a right angle (90 degrees).

What is the sum of angles in a triangle?

180 degrees.

Compare a square and a rhombus. How are they similar and different?

Both are quadrilaterals with four equal sides, but a square must have four 90-degree angles, whereas a rhombus does not have to.

What is a vertex?

A point where two or more edges of a 3D shape meet, or where two sides of a 2D shape meet.

Explain why a rectangle is a parallelogram but a parallelogram is not always a rectangle.

A rectangle meets the criteria of a parallelogram (two pairs of parallel sides), but a parallelogram does not necessarily have the four 90-degree angles required to be a rectangle.

What is the difference between an acute and an obtuse angle?

An acute angle is less than 90 degrees; an obtuse angle is greater than 90 degrees but less than 180 degrees.

How would you justify that a shape is an irregular polygon?

You can justify this by showing that the sides are not all of equal length, or the interior angles are not all equal.

If a shape is translated on a coordinate grid, what happens to its properties?

The position of the shape changes, but its size, orientation, and interior angles remain exactly the same.

What might happen to the internal angles of a polygon if you add more sides while keeping it regular?

As the number of sides increases, the size of each interior angle increases, getting closer and closer to 180 degrees.