

Exploring Geometric Shapes and Patterns

Chapter 7: Shapes and Patterns · Topic 1

Key Concept

A polygon is a closed shape made of straight sides - triangles, squares, pentagons, and hexagons are all polygons with different numbers of sides.

Regular polygons have all sides and angles equal, like a square (regular) versus a rectangle (not regular, since not all sides are equal).

Geometric patterns often use repeated polygons, like tessellations, which are patterns made of shapes fitting together perfectly without gaps.

Exploring shapes and patterns helps us appreciate geometry's role in art, architecture, and design, while strengthening our spatial reasoning skills.

Quick Revision Notes

- A polygon is a closed shape with straight sides.
- Triangles, squares, pentagons and hexagons are polygons.
- Regular polygons have equal sides and angles.
- A square is regular; a rectangle is not.
- Tessellations are patterns of shapes fitting without gaps.
- Geometric patterns appear in art and architecture.
- Exploring shapes strengthens spatial reasoning.
- Polygons are named by their number of sides.

Practice Questions

- 1 Find and name five polygons around you.
- 2 Check if a shape is regular by measuring its sides.
- 3 Create a simple tessellation pattern.
- 4 Find a geometric pattern in architecture or art.
- 5 Draw a pentagon and a hexagon.
- 6 Discuss why tessellations have no gaps.