## YR3 Knowledge Organiser - Geometry

#### **Key Concepts**

- Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them
- Recognise angles as a property of shape or a description of a turn
- Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle
- Identify horizontal and vertical lines and pairs of perpendicular and parallel lines

### Key Vocabulary

- angle
- acute / right / obtuse
- horizontal
- vertical
- parallel
- perpendicular
- symmetry
- faces
- edges
- vertices

#### **Turns and Angles**

Angles are a measure of turn. A right angle is a quarter turn, two right angles make a half-turn, three make three quarters of a turn and four make a complete turn.



An angle is created when two straight lines meet at a point. They can be found in many different orientations.



Angles have different names depending on their size.

An **acute** angle is **smaller** than a right angle.

An **obtuse** angle is **larger** than a right angle.



#### **Angles in Shapes**

Angles are also a property of shape.



"A rectangle has four right angles. A trapezium has two acute angles and two obtuse angles."

### **Horizontal and Vertical Lines**

A line that runs from left to right is called a horizontal line.

A line that runs straight up and down is called a vertical line.

Horizontal and vertical lines can be found in many different shapes.



"Shape 1 has six sides which are horizontal lines and six sides which are vertical lines. Shape 2 has two sides which are horizontal lines and three sides which are vertical lines."



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### Symmetry

Some shapes have a horizontal line of symmetry. Others have a vertical line of symmetry. Some have both and others have none at all!



#### **Parallel and Perpendicular Lines**

Lines that never meet are called parallel. The arrow notation is used to represent parallel lines.

parallel

perpendicular

Lines that meet at a right angle are called perpendicular lines. The right angle notation is used to show perpendicular lines.

Parallel and perpendicular lines can be identified in shapes.



Parallel and perpendicular lines can also be found in everyday objects in our environment.

#### **2D Shapes**

Properties including types of angles, lines, symmetry and lengths of sides can be used to describe 2D shapes.



The shape has one set of parallel lines and two sets of perpendicular lines.

It has two right angles, one acute angle and one obtuse angle.

It has no lines of symmetry.

This understanding of properties can also be used to help identify shapes from a given description.



"My shape has two pairs of parallel sides."

"Jerru's shape could be a square, a rectangle, a rhombus or a parallelogram."

Additional information, such as the types of angles or length of sides can help to find the exact shape.





Modelling materials can also be used to create 3D shapes using knowledge of known properties.





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### **3D Shapes**

Properties including the number of edges, faces, vertices and curved surfaces can be used to describe 2D shapes.

