



# Geometry: Properties of Shape

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
G	<p><b>1G-1</b> Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.</p> <p style="text-align: right;">→</p>	<p><b>2G-1</b> Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.</p> <p style="text-align: right;">→</p>	<p><b>3G-1</b> Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.</p>		<p><b>5G-1</b> Compare angles, estimate and measure angles in degrees (<math>^{\circ}</math>) and draw angles of a given size.</p>	
G					<p><b>5G-2</b> Compare areas and calculate the area of rectangles (including squares) using standard units.</p>	
	<p><b>1G-2</b> Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.</p> <p style="text-align: right;">→</p>		<p><b>3G-2</b> Draw polygons by joining marked points, and identify parallel and perpendicular sides.</p> <p style="text-align: right;">→</p>	<p><b>4G-1</b> Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.</p> <p style="text-align: right;">→</p>		<p><b>6G-1</b> Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.</p>
				<p><b>4G-2</b> Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.</p>		
				<p><b>4G-3</b> Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.</p>		



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IDENTIFYING SHAPES AND THIER PROPERTIES					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>recognise and name common 2-D and 3-D shapes, including:</p> <ul style="list-style-type: none"> <li>* 2-D shapes [e.g. rectangles (including squares), circles and triangles]</li> <li>* 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].</li> </ul>	<p>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p>		<p>identify lines of symmetry in 2-D shapes presented in different orientations</p>	<p>identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p>	<p>recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing)</p>
	<p>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</p>				<p>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p>
	<p>identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]</p>				
DRAWING AND CONSTRUCTING					
		<p>draw 2-D shapes and make 3-D shapes using modelling materials;</p>	<p>complete a simple symmetric figure with</p>	<p>draw given angles, and measure them in degrees (<math>^{\circ}</math>)</p>	<p>draw 2-D shapes using given dimensions and angles</p>



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		recognise 3-D shapes in different orientations and describe them	respect to a specific line of symmetry		recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)
COMPARING AND CLASSIFYING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	use the properties of rectangles to deduce related facts and find missing lengths and angles  distinguish between regular and irregular polygons based on reasoning about equal sides and angles	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
ANGLES					
		recognise angles as a property of shape or a description of a turn		know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	
		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	identify acute and obtuse angles and compare and order angles up to two right angles by size	identify: * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°)	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles



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		greater than or less than a right angle		* other multiples of 90°	
		identify horizontal and vertical lines and pairs of perpendicular and parallel lines			

## Stem Sentences and Generalisations

### 2D shape:

The \_\_\_\_ has \_\_\_\_ corners and \_\_\_\_ sides.

The \_\_\_\_ has \_\_\_\_ sets of parallel/ perpendicular/ symmetrical lines.

Reference to straight/ curved sides.

Reference to regular and irregular:

The \_\_\_\_ is regular because it has \_\_\_\_ equal sides and angles.

The \_\_\_\_ is irregular because \_\_\_\_\_.

$(N - 2) \times 180 =$  total angles in shape.

### 3D shape:

The \_\_\_\_ has \_\_\_\_ faces, \_\_\_\_ edges and \_\_\_\_ vertices.



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## Misconceptions

[Misconceptions - Subject Folders - Google Drive](#)