

Geometry: Properties of Shape

Identifying shapes and their properties.					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Recognise and name common 2-D shapes: rectangles, squares, triangles and circles</p> <p>To recognise and name 3-D shapes: cubes, cuboids, pyramids, sphere, cones, cylinders.</p> <p>To know how many faces a 3D shape has.</p> <p>To know that 3D shapes are made up of 2D shapes.</p>	<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 and describe the properties of 3-D shapes, including the number of edges, vertices and faces</p>	<p>To identify horizontal and vertical lines of symmetry in 2D shapes.</p> <p>To recognize parallel and perpendicular lines in 2D shapes.</p> <p>To identify and describe the properties of 2d shapes including number of sides, lines of symmetry, angles and length of sides, parallel and perpendicular lines.</p> <p>To identify and describe the properties of 3D shapes including number of edges, vertices and faces.</p> <p>To recognize a trapezium, parallelogram, kite and rhombus</p>	<p>Recall of 2D shapes and 3D shape names and properties.</p> <p>To know the properties of triangles- equilateral, scalene, right angled triangle and isosceles.</p> <p>To identify quadrilaterals</p> <p>To recognise and know the properties of a trapezium, a rhombus, kite and a parallelogram</p> <p>To identify regular and irregular polygons.</p> <p>To identify any line of symmetry in any direction.</p>	<p>Recall of 2D shapes including rhombus, trapezium and parallelogram and kite and 3D shape names and properties.</p> <p>To identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p>	<p>Recall of 2D shapes and 3D shape names and properties.</p> <p>To know that the centre of a circle is the point that is an equal distance from every part of the edge of the circle.</p> <p>To know that the radius is half of the diameter.</p>
Key vocabulary: shapes and properties.					
<p>Cube, cylinder, cuboid, pyramid, cone, sphere properties, flat faces, curved surface, Triangles, squares,</p>	<p>Cube, cuboid, sphere, pyramid, cylinder, square, rectangle, triangle, circle, cone, different prisms</p> <p>Pentagon, hexagon, heptagon, octagon, vertices, vertex, symmetrical, vertical lines of symmetry</p>	<p>Horizontal lines of symmetry, vertical lines of symmetry, Cube, cuboid, sphere, pyramid, cylinder, square, rectangle, triangle, circle, cone, different prisms, symmetrical</p>	<p>Horizontal lines of symmetry, vertical lines of symmetry, Cube, cuboid, sphere, pyramid, cylinder, square, rectangle, triangle, circle, cone, different prisms, symmetrical</p>	<p>Horizontal lines of symmetry, vertical lines of symmetry, Cube, cuboid, sphere, pyramid, cylinder, square, rectangle, triangle, circle, cone, different prisms, symmetrical</p> <p>Pentagon, hexagon, heptagon, octagon, vertices, vertex,</p> <p>Faces, curved surface base</p>	<p>Horizontal lines of symmetry, vertical lines of symmetry, Cube, cuboid, sphere, pyramid, cylinder, square, rectangle, triangle, circle, cone, different prisms, symmetrical</p> <p>Pentagon, hexagon, heptagon, octagon, vertices, vertex,</p>

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rectangles, circles.	Faces, curved surface base	Pentagon, hexagon, heptagon, octagon, vertices, vertex, Faces, curved surface base Parallel, perpendicular parallelogram rhombus trapezium kite	Pentagon, hexagon, heptagon, octagon, vertices, vertex, Faces, curved surface base Parallel, perpendicular Rhombus. Parallelogram, Trapezium Kite Quadrilateral Equilateral triangle Scalene triangle Isosceles triangle Polygon Irregular Regular	Parallel, perpendicular Rhombus. Parallelogram, Trapezium Kite Quadrilateral Equilateral triangle	Faces, curved surface base Parallel, perpendicular Rhombus. Parallelogram, Trapezium Kite Quadrilateral Equilateral triangle Radius Diameter Circumference
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Drawing and constructing.

		To measure and draw straight lines accurately in centimetres and millimetres. To draw 2D shapes accurately including regular and irregular shapes. To make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.	To complete a simple symmetric figure with respect to a specific line of symmetry	To draw an angle accurately To draw simple 2D shapes accurately using a protractor.	To draw 2D shapes accurately using a protractor and involving the conversion of cm and mm. To know which nets will fold to make a cube. To explore and build nets of other 3D shapes.
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Comparing and Classifying

To sort 2D and 3D shapes according to simple properties.	To compare and sort common 2-D shapes and everyday objects according to simple properties but also		To compare and classify geometric shapes, including quadrilaterals	To use the properties of rectangles to deduce related facts and find missing lengths and angles To distinguish between regular and	To classify angles.
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	<p>more formal properties such as number of vertices, lines of symmetry and sides.</p> <p>To compare and sort common 3D shapes according to vertices, edges, faces.</p>		<p>and triangles, based on their properties and sizes</p>	<p>irregular polygons based on reasoning about equal sides and angles</p>	
Patterns					
<p>To create patterns with 2-D and 3-D shapes. To recognise the rule within a pattern and use this to continue it in any direction.</p>	<p>To use their understanding of 2-D and 3-D shapes to identify and create patterns.</p> <p>To know what not just the next shape would be but shapes further along the pattern.</p> <p>To know the different between symmetrical patterns and repeated patterns.</p>				<p>To explore how many triangles polygons with a greater number of sides can be split into using a vertex of the polygon.</p>
Angles					
	<p>Describing turns as a quarter, half, three quarter and full turn.</p>	<p>To recognise angles as a property of shape or a description of a turn.</p> <p>To recognise angles as describing the size of a turn</p> <p>To know that greater angles make a greater turn.</p> <p>To know that two right angles are equal to one half turn, three right angles are equal to three-</p>	<p>To identify acute and obtuse angles and compare and order angles up to two right angles by size.</p> <p>To know a quarter turn, this angle is called a right angle.</p> <p>To know that any angle that is less than a right angle is called an acute angle</p>	<p>To know that degrees is a unit of measure for turn, including the degree symbol</p> <p>To know the fact that there are 360° in a full turn, and therefore 180° in half a turn, 90° in a quarter turn (or right angle) and 270° in a three-quarter turn.</p> <p>To classify an angle as acute, obtuse or reflex by comparing them to right angles and straight lines.</p> <p>To classify angles numerically.</p>	<p>To measure angles accurately with a protractor.</p> <p>To calculate missing angles from given information.</p> <p>To know that vertically opposite angles are equal</p> <p>To know that interior angles in a triangle sum to 180°</p> <p>To work out unknown angles in triangles and used the inverse operation to check answers.</p>

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		quarters of a turn and four right angles are equal to a full turn. To compare angles.	To know that an angle greater than a right angle, but less than a half turn, is called an obtuse angle.	To estimate the size of an angle. To use a protractor to measure angles up to 180° To know that angles around a point sum to 360° To know that angles on a straight line add up to 180° To calculate missing lengths and angles in shapes.	To know that angles in an equilateral triangle are always 60° To know that 2 angles in an isosceles triangle are always equal To solve missing angle problems To know that any quadrilateral can be split into two triangles, the sum of the interior angles is twice that of a triangle.
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Key Vocabulary

	Quarter turn, half turn, three quarter turn, full turn, clockwise, anti clockwise	Angle, Clockwise, anti clockwise, right angle, acute, obtuse	Angle, Clockwise, anti clockwise, right angle, acute, obtuse	Degrees, protractor Angle, Clockwise, anti clockwise, right angle, acute, obtuse, reflex	Degrees, protractor Angle, Clockwise, anti clockwise, right angle, acute, obtuse, reflex, interior
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Ready to Progress

1G-1 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. 1G-2 Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating	2G-1 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.	3G-1 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. 3G-2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.	4G-2 Identify regular polygons, including equilateral triangles and squares, as those in which the sidelengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. 4G-3 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	5G-1 Compare angles, estimate and measure angles in degrees ($^\circ$) and draw angles of a given size.	6G-1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.
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shapes to place them in particular orientations.			to a specified line of symmetry.		
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