



Geometry: Properties of Shapes

IDENTIFYING SHAPES AND THEIR PROPERTIES

Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>talk about and explore 2D (circle, rectangle, triangle) and 3D shapes (cuboid) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'.</p> <p>select shapes appropriately: flat surfaces for a building, a triangular pattern for a roof, etc.</p> <p>combine shapes to make new ones e.g. an arch, a bigger triangle</p>	<p>explore characteristics of everyday objects and 2D (circle, rectangle, triangle) and 3D shapes (cuboid) and use mathematical language to describe them</p> <p>compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.</p>	<p>recognise and name common 2-D and 3-D shapes including in different orientations:</p> <ul style="list-style-type: none"> * 2-D shapes [rectangle, square, circle and triangle] * 3-D shapes [cuboid, cube, cone, cylinder, and sphere]. <p>relate everyday objects to known 2-D and 3-D shapes</p>	<p>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line [hexagon, pentagon, octagon]</p> <p>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces [square based pyramid,</p>	<p>identify and describe the properties of 2-D shapes [inc. equilateral triangle, right angle triangle, semi circle] including the number of sides and line symmetry in a vertical line</p> <p>recognise 3-D shapes in different orientations and describe them [pentagonal-based pyramid, hexagonal-based pyramid, pentagonal prism, hexagonal prism, octagonal prism]</p> <p>understand the difference between a prism and a pyramid.</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 and describe simple 3-D shapes including nets</p> <p>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p>



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			<i>triangular based pyramid, triangular prism]</i>				
			identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				
DRAWING AND CONSTRUCTING							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
combine shapes to make new ones e.g. an arch, a bigger triangle	compose and decompose shapes so that children can recognise a shape can have other shapes within it			draw 2-D shapes and make 3-D shapes using modelling materials	complete a simple symmetric figure with respect to a specific line of symmetry	draw given angles [multiples of 10°], and measure them in degrees (°)	draw 2-D shapes using given dimensions and angles
							build simple 3-D shapes including making nets
COMPARING AND CLASSIFYING							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.	relate everyday objects to known 2-D and 3-D shapes	compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals [<i>trapezium, parallelogram, rhombus</i>] and triangles [<i>equilateral, right angle, isosceles,</i>	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



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					<i>scalene</i>], based on their properties and sizes		
ANGLES							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			recognise a right angle	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 greater than or less than a right angle	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 $\frac{1}{2}$ a turn (total 180°) * other multiples of 90°	recognise angles where they meet at a point, are on a straight line or are vertically opposite and find missing angles linked to these
				identify horizontal and vertical lines and pairs of perpendicular and parallel lines		measure angles in degrees	find unknown angles in any triangle, quadrilateral or regular polygons