

## Goose Green Geometry, Position, Direction and Movement Progression

Position, direction and movement	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Recognise how to make a full turn and a half turn	Describe position, direction and movement, including half, quarter and three-quarter turns	Use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and Anti-clockwise)		Describe positions on a 2-D grid as coordinates in the first quadrant	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	Describe positions on the full coordinate grid (all four quadrants)
		Investigate whether patterns can continue indefinitely in a circle. Linking different items to make a connecting pattern such as a necklace can provoke discussion				Describe movements between positions as translations of a given unit to the left/right and up/down		Draw and translate simple shapes on the coordinate plane, and reflect them in the axes
	Explore a growing pattern, e.g. 'There was an Old Lady who Swallowed a	Explore representing these diagrammatically – to see a	Explore creating a pattern around a given space. In these sorts of activities,			Plot specified points and draw sides to complete a given polygon		

	Fly', or 'A Squash and a Squeeze'.	staircase pattern, for example	children have the additional challenge of recognising if their pattern can 'work' – fit into the given space					
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Identifying shapes and their properties	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Practice even distribution of objects	Explore and represent patterns within numbers up to 10, including evens and odds, doubles	Recognize and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. Rectangles (including squares), circles and triangles]	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line		Identify lines of symmetry in 2-D shapes presented in different orientations	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Recognize, describe and build simple 3-D shapes, including making nets
	Select, rotate and manipulate shapes to develop spatial reasoning see if they tessellate	Create patterns with objects	* 3-D shapes [e.g. Cuboids (including cubes), pyramids and spheres]	Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces				Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

		Compose and decompose shapes so that children can recognize a shape can have other shapes within it just as a number can		Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				
<b>Comparing and classifying</b>	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Select rotate and manipulate shapes in order to develop spatial reasoning skills	Recognize pattern, order and arrange combinations of mathematical objects in patterns and sequences	Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	Complete a simple symmetric figure with respect to a specific line of symmetry	Draw given angles, and measure them in degrees (°)	Draw 2-D shapes using given dimensions and angles
								Build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)

Comparing and classifying	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<p>Presenting patterns with deliberate errors, including extra, missing and swapped items, e.g. Red cube, blue cube, red cube, blue cube, red cube, red cube, blue cube – identifying there is an extra item and fixing it by removing the extra red cube, putting in an extra blue cube, or swapping the final cubes</p>	<p>Compare and sort common 2-D and 3-D shapes and everyday objects</p>		<p>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</p>	<p>Use the properties of rectangles to deduce related facts and find missing lengths and angles</p>	<p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</p>

		<p>Accessing a range of patterns to copy. For example, using the plastic bears: big, small, big, small, big...</p> <p>footwear: shoe, welly, shoe, welly..., actions and sounds: jump, twirl, jump, twirl, jump... or clap, stamp, clap, stamp...</p>					Distinguish between regular and irregular polygons based on reasoning about equal sides and angles	
<b>Angles</b>	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					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: <ul style="list-style-type: none"> <li>* Angles at a point and one whole turn (total 360°)</li> <li>* Angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total 180°)</li> <li>* Other multiples of 90°</li> </ul>	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
					Identify horizontal and vertical lines and pairs of perpendicular and parallel lines			