

# Geometry: Properties of Shapes

## IDENTIFYING SHAPES AND THEIR PROPERTIES

| EIFS  | Year 1  | Year 2  | Year 3 | Year 4  | Year 5  | Year 6   |
|---|---|---|--------|---|---|--|
| <p><b>Mathematics: Shape, space &amp; measure</b><br/><b>30-50 months</b></p> <ul style="list-style-type: none"> <li>Shows an interest in shape and space by playing with shapes or making arrangements with objects.</li> <li>Shows awareness of similarities of shapes in the environment.</li> <li>Uses positional language.</li> <li>Shows interest in shape by sustained construction activity or by talking about shapes or arrangements.</li> <li>Shows interest in shapes in the environment.</li> <li>Uses shapes appropriately for tasks.</li> <li>Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall'.</li> </ul> <p><b>40-60 months</b></p> <ul style="list-style-type: none"> <li>Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes.</li> <li>Selects a particular named shape.</li> <li>Uses familiar objects and common shapes to create and recreate patterns and build models</li> </ul> | <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>    |        |   |   |  |
| <p><b>Early Learning Goal</b><br/>Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.</p>  |   |   |        |   |   |  |

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| DRAWING AND CONSTRUCTING  |        |   |   |  |  |  |
|---------------------------|--------|---|---|--|--|--|
|                           |        |   | 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 ( $^{\circ}$ )                                      | draw 2-D shapes using given dimensions and angles  |
|                           |        |   |   |  |  | recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)                         |
| COMPARING AND CLASSIFYING |        |   |   |  |  |  |
| EYFS                      | 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       | compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons |
|                           |        |   |   |  | distinguish between regular and irregular polygons based on reasoning about equal sides and angles |  |
| 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          |  |

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|  |  |   |   |   |   |
|--|--|---|---|---|---|
|  |  | <p>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</p> | <p>identify acute and obtuse angles and compare and order angles up to two right angles by size</p> | <p>identify:</p> <ul style="list-style-type: none"> <li>* angles at a point and one whole turn (total <math>360^\circ</math>)</li> <li>* angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total <math>180^\circ</math>)</li> <li>* other multiples of <math>90^\circ</math></li> </ul> | <p>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</p> |
|  |  | <p>identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p>   |   |   |   |