

Geometry, measures and statistics - Key Performance Indicators - learning objectives

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Measures</b>					
<p>Compare and describe practical problems for lengths and heights; e.g., long/short, longer/shorter, tall/short, double/half</p> <p>Solve practical problems for lengths and heights; e.g., long/short, longer/shorter, tall/short, double/half</p> <p>Compare and describe practical problems for mass/weight; e.g., heavy/light, heavier than, lighter than</p> <p>Solve practical problems for mass/weight; e.g., heavy/light, heavier than, lighter than</p> <p>Compare and describe practical problems for capacity and volume;</p>		<p>Measure and compare lengths (m/cm/mm)</p> <p>Add and subtract lengths (m/cm/mm)</p> <p>Measure and compare mass (kg/g)</p> <p>Add and subtract mass (kg/g)</p> <p>Measure and compare volume/capacity (l/ml)</p> <p>Add and subtract volume/capacity (l/ml)</p>	<p>Convert between different units of measure for length</p> <p>Convert between different units of measure for mass</p> <p>Convert between different units of measure for volume / capacity</p>	<p>Convert between different units of metric measure kilometre and metre centimetre and millimetre</p> <p>Convert between different units of metric measure Kilogram and gram</p> <p>Convert between different units of metric measure litre and millilitre</p> <p>(m2)</p>	<p>Use, read, write and convert between standard units, converting measurements of length from a smaller unit of measure to a larger unit, and vice versa using decimal notation up to three decimal places</p> <p>Use, read, write and convert between standard units, converting measurements of mass from a smaller unit of measure to a larger unit, and vice versa using decimal notation up to three decimal places</p> <p>Use, read, write and convert between standard units, converting measurements of</p>

<p>e.g., full/empty, more than, less than, half, half full, quarter</p> <p>Solve practical problems for capacity and volume; e.g., full/empty, more than, less than, half, half full, quarter</p> <p>Compare and describe practical problems for time; e.g., quicker, slower, earlier, later</p> <p><b>Time</b> Solve practical problems for time; e.g., quicker, slower, earlier, later</p> <p>Tell the time to the hour Tell the time to half past the hour</p> <p>Draw hands on a clock face to show the hour</p> <p>Draw hands on a clock face to show the half hour</p>	<p><b>Money</b> Solve simple problems in a practical context involving addition of money of the same unit</p> <p>Solve simple problems in a practical context involving subtraction of money of the same unit</p> <p>Solve simple problems in a practical context including giving change</p>	<p><b>Money</b> Add amounts of money to give change, using both £ and p in practical contexts</p> <p>Subtract amounts of money to give change, using both £ and p in practical contexts</p> <p><b>Time</b> Tell the time from an analogue clock</p> <p>Tell the time from a 12-hour clock</p> <p>Tell the time from 24-hour clock</p> <p>Write the time from an analogue clock</p> <p>Write the time from a 12-hour clock</p> <p>Write the time from 24-hour clock</p>	<p><b>Money</b> Convert between different units of measure for money</p> <p><b>Time</b> Convert between different units of measure for time</p>		<p>volume from a smaller unit of measure to a larger unit, and vice versa using decimal notation up to three decimal places</p> <p>Use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa using decimal notation up to three decimal places</p>
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Geometry	Properties	of shape			
<p>Recognise and name common 2-D shapes e.g., rectangles (including squares), circles and triangles.</p> <p>Recognise and name common 3-D shapes, including e.g., cuboids (including cubes), pyramids and spheres.</p>	<p>Compare and sort common 2-D shapes and everyday objects</p> <p>Compare and sort common 3-D shapes and everyday objects</p>	<p>Identify right angles</p> <p>Recognises that two right angles make a half-turn</p> <p>Recognise that three make three quarters of a turn</p> <p>Recognise four make a complete turn</p> <p>Identify whether angles are greater than or less than a right angle</p>	<p>Compare geometric shapes, including quadrilaterals and triangles, based on their properties</p> <p>Compare geometric shapes, including quadrilaterals and triangles, based on their size</p> <p>Classify geometric shapes, including quadrilaterals and triangles, based on their properties</p> <p>Identify geometric shapes, including quadrilaterals and triangles, based on their size</p> <p>Identify lines of symmetry in two dimensional shapes</p> <p>Identify lines of symmetry presented in different orientations</p>	<p>Draw given angles and measures them in degrees (0)</p> <p>Distinguish between regular and irregular polygons</p> <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles</p> <p>Measure the perimeter of composite rectilinear shapes in centimetres</p> <p>Measure the perimeter of composite rectilinear shapes in metres</p> <p>Calculate the perimeter of composite rectilinear shapes in centimetres</p> <p>Calculate the perimeter of</p>	<p>Compare geometric shapes based on their properties and sizes</p> <p>Classify geometric shapes based on their properties and sizes</p> <p>Find unknown angles in any triangle</p> <p>Find unknown angles in any quadrilateral</p> <p>Find unknown angles in any regular polygon</p>

				<p>composite rectilinear shapes in metres</p> <p>Compare the area of rectangles (including squares), and including, square centimetres (cm<sup>2</sup>)</p> <p>Compare the area of rectangles (including squares), and including square metres (m<sup>2</sup>)</p> <p>Calculates the area of rectangles (including squares), and including square centimetres (cm<sup>2</sup>)</p> <p>Calculates the area of rectangles (including squares) standard units, square metres</p>	
<b>Geometry</b>	<b>Position</b>	<b>and direction</b>			
	<p>Use mathematical vocabulary to describe position</p> <p>Use mathematical vocabulary to describe direction</p>		<p>Plot specified points and draw sides to complete a given polygon</p>		<p>Draw simple shapes on the coordinate plane</p> <p>Reflect simple shapes in the axis.</p>

	<p>Use mathematical vocabulary to describe movement</p> <p>Use mathematical vocabulary to describe movement in a straight line</p> <p>Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns clockwise</p> <p>Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns anti-clockwise</p>				<p>Translate simple shapes on the coordinate plane</p> <p>Translate simple shapes in the axis</p>
<b>Statistics</b>					
	<p>Answer questions about totalling categorical data</p> <p>Answer questions about comparing categorical data</p>	<p>Interpret data using bar charts</p> <p>Interpret data using pictograms</p>	<p>Solve comparison problems using information presented in bar charts</p> <p>Solve comparison problems using</p>	<p>Complete tables</p> <p>Complete timetables</p> <p>Read tables</p> <p>Read timetables</p>	<p>Interpret pie charts</p> <p>Interpret line graphs</p> <p>Construct pie charts</p> <p>Construct line graphs</p>

	<p>Ask questions about totalling categorical data</p> <p>Ask questions about comparing categorical data</p>	<p>Interpret data using tables</p> <p>Present data using bar charts</p> <p>Present data using pictograms</p> <p>Present data using tables</p>	<p>information presented in pictograms</p> <p>Solve comparison problems using information presented in tables</p> <p>Solve sum and difference problems using information presented in bar charts</p> <p>Solve sum and difference problems using information presented in pictograms</p> <p>Solve sum and difference problems using information presented in tables</p>	<p>Interpret information in tables</p> <p>Interpret information in timetables</p>	<p>Use pie charts to solve problems</p> <p>Use line graphs to solve problems</p> <p>Calculate the mean as an average</p> <p>Interpret the mean as an average</p>
<p><b>Year 6 only</b> <b>Ratio and proportion</b></p>	<p>Solve problems involving the calculation of percentages e.g. of measures, such as 15% of 360.</p>	<p><b>Year 6 only</b> <b>Algebra</b></p>	<p>Use simple formulae - perimeter of a rectangle</p> <p>Use simple formulae - perimeter of a triangle</p> <p>Use simple formulae - area of a rectangle</p>		

	<p>Solve problems involving the calculation of percentages and the use of percentages for comparison</p> <p>Solve problems involving unequal sharing and grouping using knowledge of multiples.</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions</p>		Use simple formulae - area of a triangle		
Skills vocabulary					
<p>Compare</p> <p>Solve</p> <p>Draw</p> <p>Recognise</p>	<p>Compare</p> <p>Solve</p> <p>Use</p> <p>Distinguish</p> <p>Answer</p> <p>Ask</p>	<p>Measure</p> <p>Tell</p> <p>Identify</p> <p>Write</p> <p>Recognise</p> <p>Interpret</p>	<p>Convert</p> <p>Compare</p> <p>Identify</p> <p>Plot</p> <p>Solve</p>	<p>Convert</p> <p>Measure</p> <p>Calculate</p> <p>Compare</p> <p>Draw</p> <p>Distinguish</p>	<p>Use</p> <p>Read</p> <p>Write</p> <p>Convert</p> <p>Compare</p> <p>Classify</p>

		Present		Complete Read Interpret	Find Draw Reflect Translate Interpret Construct Calculate Solve
Naming vocabulary					

20 days PPA per year - is it enough? - Can an odd week term have a short SSM unit?

Time by Y3 - priority for KS2 that all pupils tell the time - Unit at beginning of the year/odd week after xmas?

Statistics - Graph a week in early bird / built into a maths lesson / science

Y6 ratio / algebra part of a standard teaching cycle - short unit

Y5 - perimeter / area - Short unit

Measures application used throughout numeracy sessions as context for problem solving