

Mathematics NUMBER Assessment Grid

Assessment areas	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Number and place value</b>	<ul style="list-style-type: none"> <li>Count reliably with numbers 1 to 20, place them in order and say which number is one more or one less than a given number (ELG 11)</li> </ul>	<ul style="list-style-type: none"> <li>Read and write numbers from 1 to 20 in numerals and words</li> <li>Count forwards and backwards, read and write with numbers to 100</li> <li>Count reliably in multiples of 2, 5, 10</li> </ul>	<ul style="list-style-type: none"> <li>Read and write numbers to 100 in numerals and words</li> <li>Compare numbers to 100 using <math>&lt;</math> <math>&gt;</math> <math>=</math> signs</li> <li>Count reliably in steps of 2, 3, 5, 10 from any number forwards/ backwards</li> <li>Understand the place value of each digit in a two-digit number</li> </ul>	<ul style="list-style-type: none"> <li>Read, write and use numbers up to 1000 in numerals and words</li> <li>Count in multiples of 4, 8, 50 and 100</li> <li>Understand the place value of each digit in a three-digit number and find 10 or 100 more / less than a number</li> </ul>	<ul style="list-style-type: none"> <li>Read Roman numerals to 100</li> <li>Count in multiples of 6, 7, 9, 25 and 1000</li> <li>Understand the place value of each digit in a four-digit number and find 1000 more/ less than a given number</li> <li>Round numbers to nearest 10, 100 or 1000</li> <li>Begin to recognise negative numbers</li> </ul>	<ul style="list-style-type: none"> <li>Read Roman numerals to 1000</li> <li>Read, write and use numbers to at least 1 000 000</li> <li>Count forwards/ backwards and round in powers of 10</li> <li>Begin to interpret negative numbers in context</li> </ul>	<ul style="list-style-type: none"> <li>Read, write and use numbers up to 10 000 000</li> <li>Round any whole number to differing degrees of accuracy</li> <li>Calculate intervals across zero when problem solving</li> <li>Use negative numbers in context and problem solving</li> </ul>
<b>Addition and subtraction</b>	<ul style="list-style-type: none"> <li>Using quantities and objects, add and subtract two single-digit numbers and count on or back to find the answer (ELG 11)</li> </ul>	<ul style="list-style-type: none"> <li>Begin to use and understand signs <math>+</math> <math>-</math> <math>=</math></li> <li>Know number bonds to 20 and begin to use related facts</li> <li>Solve one-step addition/ subtraction problems; including simple missing number problems</li> </ul>	<ul style="list-style-type: none"> <li>Use mental recall of addition/ subtraction facts to 20 and derive related facts up to 100</li> <li>Begin to use knowledge of inverse relationship for addition/ subtraction to check calculations</li> <li>Solve addition/ subtraction problems using both mental and written methods</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract numbers mentally; including 3-digits</li> <li>Add and subtract numbers up to 3-digits using formal written methods</li> <li>Begin to estimate and check answers to calculations using a range of strategies</li> <li>Solve addition/ subtraction problems; including the use of number facts</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract numbers mentally using known facts</li> <li>Add and subtract numbers up to 4-digits using formal written methods</li> <li>Routinely estimate and check answers to calculations using a range of strategies</li> <li>Solve two-step addition/ subtraction problems; choosing appropriate operations</li> </ul>	<ul style="list-style-type: none"> <li>Accurately add and subtract mentally, and using formal written methods</li> <li>Routinely check answers to calculations; including by rounding</li> <li>Solve multi-step addition/ subtraction problems; choosing appropriate operations</li> </ul>	<ul style="list-style-type: none"> <li>Mentally calculate mixed operations</li> <li>Solve multi-step problems involving addition/ subtraction</li> <li>Use efficient formal written methods for multiplication and division; interpret remainders</li> <li>Solve problems involving all four operations and estimate to check answers</li> <li>Identify and use common factors and multiples</li> <li>Identify prime numbers</li> </ul>
<b>Multiplication and division</b>	<ul style="list-style-type: none"> <li>Solve problems, including doubling, halving and sharing (ELG 11)</li> </ul>	<ul style="list-style-type: none"> <li>Solve one-step multiplication/ division problems; including use of arrays</li> </ul>	<ul style="list-style-type: none"> <li>Use mental recall of multiplication/ division facts for 2, 5, 10</li> <li>Recognise odd and even numbers</li> <li>Begin to use and understand signs <math>\times</math> <math>\div</math> <math>=</math></li> <li>Solve multiplication/ division problems; including use of arrays and repeated addition</li> </ul>	<ul style="list-style-type: none"> <li>Use mental recall of multiplication/ division facts for 3, 4, 8</li> <li>Begin to use formal written methods to calculate larger multiplications</li> <li>Solve multiplication/ division problems; including simple scaling and correspondence problems</li> </ul>	<ul style="list-style-type: none"> <li>Know and use mental recall of multiplication/ division facts up to 12 X12 to derive facts</li> <li>Use factor pairs to support mental calculations</li> <li>Use formal written method to multiply</li> <li>Solve multiplication/ addition problems; including applying the rules of arithmetic and two-step problems</li> </ul>	<ul style="list-style-type: none"> <li>Use known facts to mentally multiply and divide</li> <li>Use formal long and short written methods for multiplication and division; include decimal numbers and interpret remainders</li> <li>Recognise and use prime numbers and prime factors</li> <li>Solve multiplication/ division problems; including recognition and application of factors, multiples, squares, cubes</li> </ul>	
<b>Fractions (including decimals and percentages)</b>		<ul style="list-style-type: none"> <li>Begin to recognise and find halves and quarters of an object, shape or quantity</li> </ul>	<ul style="list-style-type: none"> <li>Find and record fractions <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math>, <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</li> <li>Begin to recognise simple equivalent fractions</li> </ul>	<ul style="list-style-type: none"> <li>Understand and use unit and non-unit fractions of objects and numbers; including tenths</li> <li>Recognise equivalent fractions with small denominators</li> <li>Begin to compare and order fractions</li> <li>Begin to calculate simple addition and subtraction of fractions; within one whole</li> </ul>	<ul style="list-style-type: none"> <li>Understand and use hundredths</li> <li>Begin to recognise decimal and fraction equivalents</li> <li>Calculate simple addition and subtraction of fractions; beyond one whole</li> <li>Divide by 10/100 and understand the value of the resulting decimal numbers</li> <li>Solve fraction and decimal problems in context; including rounding and comparing up to two decimal places</li> </ul>	<ul style="list-style-type: none"> <li>Recognise, compare and order fractions; including mixed numbers and improper fractions</li> <li>Calculate addition and subtraction of fractions; including different denominators</li> <li>Begin to multiply fractions</li> <li>Recognise, compare and round decimals; up to 3 decimal places</li> <li>Begin to understand decimal numbers as fractions</li> <li>Solve problems involving simple percentage and decimal equivalents</li> </ul>	<ul style="list-style-type: none"> <li>Simplify, compare and order a range of fractions</li> <li>Use equivalence to add and subtract fractions</li> <li>Multiply and divide proper fractions</li> <li>Understand the relationship of division and fractions</li> <li>Recognise and calculate numbers with three decimal places</li> <li>Use equivalences between simple fractions, decimals and percentages</li> </ul>
<b>Ratio and proportion</b>							When solving problems: <ul style="list-style-type: none"> <li>Apply multiplication and division facts to calculate proportionality in a range of contexts</li> <li>Accurately calculate and use percentages</li> <li>Understand scale factor</li> </ul>
<b>Algebra</b>							<ul style="list-style-type: none"> <li>Use and generate simple formulae using symbols and letters</li> <li>Generate linear number sequences</li> <li>Find different possibilities for the variables within equations</li> </ul>

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<b>Measurement</b>	<ul style="list-style-type: none"> <li>Use everyday language to talk about size, weight, capacity, distance, time to compare quantities and objects to solve problems (ELG 12)</li> </ul>	<ul style="list-style-type: none"> <li>Solve practical problems for length and height; mass/weight; capacity and volume; time</li> <li>Use measuring skills to record lengths and heights; mass/weight; capacity and volume; time (hours, minutes, seconds)</li> <li>Know the value of different denominations of coins and notes</li> <li>Use appropriate language to sequence events in a chronological order</li> <li>Understand how to tell the time to the nearest hour/ half past the hour</li> </ul>	<ul style="list-style-type: none"> <li>Be able to use appropriate standard units to estimate and measure to the nearest appropriate unit: including length (m/cm), mass (kg/g), temperature (°C), capacity (litres/ml)</li> <li>Use &gt;, &lt; and = to compare and order length, mass, volume/capacity</li> <li>Use the symbols for pounds (£) and pence (p)</li> <li>Begin to combine amounts of money to make a particular value and calculate change</li> <li>Understand how to tell the time to five minutes, including quarter past/to the hour and be able to draw these on a clock face</li> <li>Know the number of minutes in an hour and the number of hours in a day, and compare and sequence intervals of time</li> </ul>	<ul style="list-style-type: none"> <li>Use the appropriate units of length (m/ cm/ mm), mass (kg/g) and volume/capacity (l/ml) to measure, compare, add and subtract</li> <li>Understand how to measure the perimeter of simple 2-D shapes</li> <li>Solve practical problems for adding and subtracting amounts of money, using both £ and p to give change</li> <li>Understand how to tell and record the time; including for analogue, 12-hour, 24-hour and clocks with Roman numerals</li> <li>Use the terms o'clock, a.m./p.m., morning, afternoon, noon and midnight</li> <li>Know a range of equivalent units of time</li> <li>Use known facts to compare the duration of events</li> </ul>	<ul style="list-style-type: none"> <li>Know how to convert units of measure (e.g. km to m, hour to minutes)</li> <li>Know how to measure and calculate the perimeter of rectilinear figures (cm/ m)</li> <li>Use counting to find the area of rectilinear shapes</li> <li>Solve problems using a different range of measures; including money</li> <li>Use the units of time to convert between analogue and digital clocks</li> <li>Solve problems using conversion between units of time</li> </ul>	<ul style="list-style-type: none"> <li>Know how to convert units of metric measure (e.g. km to m, kg to g, l to ml)</li> <li>Recognise approximate equivalences between metric units and common imperial units (e.g. inches, pints, pounds)</li> <li>Know how to measure and calculate the perimeter of composite rectilinear shapes (cm/ m)</li> <li>Use estimating, calculating and comparing to find the area of rectangles (including squares) and estimate to find the area of irregular shapes</li> <li>Use practical resources to estimate volume and capacity</li> <li>When solving problems convert between units of time</li> <li>When solving problems use all four operations to solve problems involving measures using decimal notation and scaling</li> </ul>	<ul style="list-style-type: none"> <li>When solving problems that require the calculation and conversion of units of measures, use decimal notation up to three decimal places</li> <li>Know how to convert between miles and km</li> <li>Investigate the relationship between area and perimeter identifying examples where the same area can have the same perimeter and vice versa</li> <li>Use the formulae for area and volume of shapes</li> <li>Know how to calculate the area of parallelograms and triangles</li> <li>Be able to calculate, estimate and compare the volume of cubes and cuboids using standard units (cm<sup>3</sup>, m<sup>3</sup>)</li> </ul>
<b>Geometry – properties of shape</b>	<ul style="list-style-type: none"> <li>Recognise, create and describe patterns</li> <li>Explore characteristics of everyday objects and shapes and use mathematical language to describe them (ELG 12)</li> </ul>	<ul style="list-style-type: none"> <li>Begin to recognise 2-D shapes; including rectangles, circles and triangles</li> <li>Begin to recognise 3-D shapes; including cuboids, pyramids and spheres</li> </ul>	<ul style="list-style-type: none"> <li>Begin to compare and sort common 2-D and 3-D shapes</li> <li>Use number of sides and knowledge of lines of symmetry in a vertical line to identify and describe the properties of 2-D shapes</li> <li>Use number of edges, vertices and faces to describe 3-D shapes</li> <li>Begin to identify 2-D shapes on the surface of 3-D shapes</li> </ul>	<ul style="list-style-type: none"> <li>Accurately draw 2-D shapes</li> <li>Recognise 3-D shapes in different orientations</li> <li>Know that angles are a property of shapes and can be used to describe turns</li> <li>Accurately recognise right angles; including a complete turn</li> <li>Begin to identify whether angles are greater or less than a right angle</li> <li>Begin to use the terms horizontal and vertical lines &amp; perpendicular and parallel to describe pairs of lines</li> </ul>	<ul style="list-style-type: none"> <li>Use the properties of shape to compare and classify geometric shapes</li> <li>Understand and use the terms acute and obtuse to identify angles</li> <li>Make observations to order angles up to two right angles by size</li> <li>Recognise lines of symmetry in 2-D shapes presented in different orientations</li> </ul>	<ul style="list-style-type: none"> <li>Use the terms acute, obtuse and reflex to estimate and compare angles</li> <li>Know how to identify 3-D shapes from 2-D representations</li> <li>Accurately draw and measure angles in degrees (°)</li> <li>Know how to use the properties of rectangles to find missing lengths and angles</li> <li>Use knowledge of sides and angles to distinguish between regular and irregular polygons</li> </ul>	<ul style="list-style-type: none"> <li>Use given dimensions and angles to draw 2-D shapes</li> <li>Construct 3-D shapes including making nets</li> <li>Know how to find unknown angles in triangles, quadrilaterals and regular polygons</li> <li>Solve missing angle problems on straight lines</li> <li>Use the knowledge of shape properties to classify geometric shapes</li> <li>Know and use the parts of circles (radius, diameter and circumference)</li> </ul>
<b>Geometry – position and direction</b>	<ul style="list-style-type: none"> <li>Use everyday language to talk about position and distance to solve problems (ELG 12)</li> </ul>	<ul style="list-style-type: none"> <li>Use whole, half, quarter and three quarter turns to describe position, of objects, direction of travel and movement</li> </ul>	<ul style="list-style-type: none"> <li>Begin to produce patterns and sequences using mathematical objects</li> <li>Begin to understand the concept of angles and rotation, including right angles for quarter, half and three-quarter turns</li> <li>Understand and use the terms clockwise and anti-clockwise</li> </ul>		<ul style="list-style-type: none"> <li>Know how to use co-ordinates to describe position in the first quadrant and plot specified points</li> <li>Use knowledge of co-ordinates and shape to complete a given polygon</li> <li>Use translation horizontally and vertically to describe movement</li> </ul>	<ul style="list-style-type: none"> <li>Know how to successfully reflect and translate shapes</li> </ul>	<ul style="list-style-type: none"> <li>Know how to use co-ordinates to describe position in all four quadrants and plot specified points</li> <li>Know how to draw and translate shapes on the coordinate plane</li> <li>Know how to reflect simple shapes in the axes of a coordinate plane</li> </ul>
<b>Statistics</b>			<ul style="list-style-type: none"> <li>Understand and know how to construct simple pictograms, tally charts, block diagrams and simple tables</li> <li>Begin to answer questions by counting/ sorting, and about totalling/ comparing categorical data</li> </ul>	<ul style="list-style-type: none"> <li>Use bar charts, pictograms and tables to present and interpret data</li> <li>Use information in scaled bar charts, pictograms and tables to solve one-step and two-step questions</li> </ul>	<ul style="list-style-type: none"> <li>Use bar charts and time graphs to present discrete/ continuous data</li> <li>Use bar charts, pictograms, tables and other graphs to solve comparison, sum and difference problems</li> </ul>	<ul style="list-style-type: none"> <li>Use line graphs to solve comparison, sum and difference problems</li> <li>Identify the necessary information in tables (including timetables) and be able to complete them</li> </ul>	<ul style="list-style-type: none"> <li>Know how to construct a pie chart and line graph</li> <li>Use pie charts and line graphs to solve problems</li> <li>Understand the term mean as an average and be able to calculate it</li> </ul>