

## Assessment Criteria – Key Stage 1 and 2 mathematics

Year 1					
Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions (incl. decimals & percentages)	Measurement	Geometry – properties of space position & direction
<ul style="list-style-type: none"> <li>• Read, write (numerals) and represent using models images, numbers to 100</li> <li>• Count forwards and backwards in ones across 100</li> <li>• Count in multiples of twos, fives and tens.</li> <li>• Find one more or less than a given number</li> <li>• Write numbers to twenty in numerals and words</li> </ul>	<ul style="list-style-type: none"> <li>• Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs</li> <li>• Represent and use number bonds and related subtraction facts within 20</li> <li>• Add and subtract one-digit and two-digit numbers to 20, including zero</li> <li>• Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \square - 9</math></li> </ul>	<ul style="list-style-type: none"> <li>• Use concrete objects to solve one step problems in multiplication and division using concrete objects, numbers and quantities</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise, find and name halves and quarters of shapes and quantities</li> </ul>	<ul style="list-style-type: none"> <li>• Use language to compare and order length; mass; capacity; time</li> <li>• Solve practical problems by:               <ul style="list-style-type: none"> <li>➢ measuring using non-standard units</li> <li>➢ measuring and beginning to record using standard units</li> </ul> </li> <li>• Recognise coins and notes</li> <li>• Tell the time- hour/ <math>\frac{1}{2}</math> hour</li> </ul>	<ul style="list-style-type: none"> <li>• 2D and 3D shapes               <ul style="list-style-type: none"> <li>➢ name and recognise common shapes</li> </ul> </li> <li>• Use language of position, direction and movement</li> </ul>

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Year 2						
Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions (incl. decimals & percentages)	Measurement	Geometry – properties of space and position & direction	Statistics
<ul style="list-style-type: none"> <li>Understand place value to 100</li> <li>Count in steps of 2, 3 and 5 from 0 and in tens from any number forward and backward</li> <li>Compare and order numbers to 100 and use &lt;, &gt; and = signs</li> </ul>	<ul style="list-style-type: none"> <li>Derive new facts to 100 from known facts to 20</li> <li>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:               <ul style="list-style-type: none"> <li>a two-digit number and ones</li> <li>a two-digit number and tens</li> <li>two two-digit numbers</li> <li>adding three one-digit numbers</li> </ul> </li> <li>Understand that addition is commutative and that subtraction is not</li> <li>Use inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</li> <li>Solve problems involving numbers, quantities and measures</li> </ul>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for 2s, 5s and 10s</li> <li>Calculate mathematical statements using the multiplication (x), division (÷) and equals (=) signs</li> <li>Show that multiplication is commutative and division is not</li> <li>Recognise that multiplication is the inverse of division and vice versa</li> <li>Solve problems, in different contexts, using materials, arrays, repeated addition, mental methods and multiplication and division facts</li> </ul>	<ul style="list-style-type: none"> <li>Recognise, find, name and write fractions <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</li> <li>Recognise simple equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math></li> </ul>	<ul style="list-style-type: none"> <li>Using m/cm; kg/g; °C; litres/ml;               <ul style="list-style-type: none"> <li>choose and use</li> <li>estimate and measure to nearest unit</li> <li>compare, order and record length, mass, volume/capacity using =, &lt;, &gt;</li> </ul> </li> <li>Using £/p               <ul style="list-style-type: none"> <li>find combinations and solve practical problems- + and – including change</li> </ul> </li> <li>Tell the time- <math>\frac{1}{4}</math> to/past- to five minutes- analogue</li> </ul>	<ul style="list-style-type: none"> <li>2D and 3D shapes               <ul style="list-style-type: none"> <li>identify and describe including vertical symmetry in 2D shapes</li> <li>compare and sort</li> </ul> </li> <li>Order and arrange patterns and sequences</li> <li>Use mathematical language of position, direction and movement</li> </ul>	<ul style="list-style-type: none"> <li>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables</li> <li>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</li> <li>Ask and answer questions about totalling and comparing categorical data</li> </ul>

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Year 3						
Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions (incl. decimals & percentages)	Measurement	Geometry – properties of space and position and direction	Statistics
<ul style="list-style-type: none"> <li>Understand place value to 1000</li> <li>Write numbers in numerals and words to 1000</li> <li>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract mentally ones, tens and hundreds to three digits</li> <li>Use column methods for addition and subtraction up to three digits</li> <li>Estimate answers and use inverse to check calculations when solving more complex problems, including missing numbers</li> </ul>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for 3s, 4s and 8 multiplication tables</li> <li>Use mental methods to multiply and divide 2 digit by 1 digit numbers</li> <li>Use short written methods for multiplying and dividing 2 digit by 1 digit numbers</li> <li>Solve problems including missing numbers, proportion and scaling up or down</li> </ul>	<ul style="list-style-type: none"> <li>Understand tenths in context: find a tenth of an object or quantity, count up and down in tenths</li> <li>Find fractions of shapes and quantities e.g. <math>\frac{2}{3}</math> of 12. unit fractions and non unit fractions</li> <li>Recognise and represent equivalent fractions</li> <li>Be able to compare and order simple fractions with the same denominator</li> <li>Add and subtract fractions with the same denominator within a whole</li> </ul>	<ul style="list-style-type: none"> <li>Measure, compare, length including perimeter (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</li> <li>Add and subtract measures including money</li> <li>Calculate the perimeter of simple 2d shapes</li> <li>Estimate, record, read and compare units of time</li> <li>Know the relationship between units of time</li> <li>Tell and write the analogue and digital time to the nearest minute</li> </ul>	<ul style="list-style-type: none"> <li>Recognise, draw and construct 2D and 3D shapes</li> <li>Understand angles as a measure of turn – quarter, half, quarters, full</li> <li>Compare angles more than or less than a right angle</li> <li>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines</li> </ul>	<ul style="list-style-type: none"> <li>Interpret and present data using bar charts, pictograms and tables</li> <li>Solve one-step and two-step questions [for example, ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables</li> </ul>

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Year 4						
Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions (incl. decimals & percentages)	Measurement	Geometry – properties of space and position & direction	Statistics
<ul style="list-style-type: none"> <li>Understand place value up to 10000</li> <li>Count in multiples of 6, 7, 9, 25 and 1000</li> <li>Read Roman numerals 1-100 and know that the number system changed over time to include 0</li> <li>Count back in stated multiples including negative numbers and through 0</li> <li>Round numbers to the nearest 10, 100 and 1000</li> </ul>	<ul style="list-style-type: none"> <li>Use column methods for addition and subtraction up to 4 digits</li> <li>Estimate answers and use inverse to check calculations</li> <li>Solve two-step problems in different contexts, deciding which methods to use and explain reasoning</li> </ul>	<ul style="list-style-type: none"> <li>Recall multiplication and division facts for multiplication tables up to 12 x 12</li> <li>Use place value, known and derived facts to multiply and divide mentally</li> <li>Use the rules of arithmetic to multiply and divide (associative, commutative and distributive)</li> <li>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</li> <li>Solve two step problems in context</li> </ul>	<ul style="list-style-type: none"> <li>Recognise and show, using diagrams, families of common equivalent fractions</li> <li>Count up and down in hundredths</li> <li>Find non- unit fractions of quantities</li> <li>Add and subtract fractions with the same denominator within one whole e.g. <math>\frac{5}{6} + \frac{1}{6}</math></li> <li>Recognise and write decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math>. Tenths and hundredths.</li> <li>Round compare and order decimals to 2.d.p.</li> </ul>	<ul style="list-style-type: none"> <li>Convert between units of measure</li> <li>Measure and calculate perimeter and area of regular rectilinear shapes</li> <li>Estimate, measure and calculate (time, capacity, length, mass)</li> <li>Read, write and convert time between analogue and digital 12- and 24-hour clocks</li> <li>Solve problems involving conversion of units of time</li> </ul>	<ul style="list-style-type: none"> <li>Compare and classify 2D shapes including triangles</li> <li>Identify, compare and order angles by size</li> <li>Recognise lines of symmetry and complete simple symmetrical figures</li> <li>Read, write and use coordinates in the first quadrant</li> <li>Translate simple shapes in the first quadrant</li> </ul>	<ul style="list-style-type: none"> <li>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</li> <li>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</li> </ul>

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Year 5						
Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions (incl. decimals & percentages)	Measurement	Geometry – properties of space and position & direction	Statistics
<ul style="list-style-type: none"> <li>Understand place value up to 1000000</li> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1000000</li> <li>Understand negative numbers in context</li> <li>Round numbers up to 100000</li> </ul>	<ul style="list-style-type: none"> <li>Use column methods for addition and subtraction using numbers with than 4 digits</li> <li>Estimate answers and use inverse and rounding to check accuracy of calculations</li> <li>Add and subtract mentally using increasingly large numbers</li> <li>Solve multi-step problems in different contexts, including decimals, deciding which methods to use and explain reasoning</li> </ul>	<ul style="list-style-type: none"> <li>To know, use and understand the properties of numbers including – multiples, factors, prime numbers, prime factors and composite numbers</li> <li>Multiply and divide numbers up to 4 digits using written calculations. Interpret remainder in a context</li> <li>Multiply and divide numbers mentally drawing upon known facts</li> <li>Multiply and divide whole numbers and decimals by 10, 100 and 1000</li> <li>Recognise and use square and cube numbers and associated notation</li> <li>Solve problems with all 4 operations involving using knowledge of cube, squares, multiples, scaling and simple rates</li> </ul>	<ul style="list-style-type: none"> <li>Identify, name and write equivalent fractions including decimals of a given fraction, represented visually, including tenths and hundredths</li> <li>Add and subtract fraction with dominators that are multiples of the same number</li> <li>Convert mixed number and improper fractions</li> <li>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> <li>Round, order and compare decimals to 3.d.p.</li> <li>Recognise % symbol and explain as a fraction with denominator 100</li> <li>Solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those with a denominator of a multiple of 10 or 25</li> </ul>	<ul style="list-style-type: none"> <li>Convert between units of measure and use approximate imperial equivalents</li> <li>Calculate perimeter and area</li> <li>Estimate volume and capacity</li> <li>Solve problems with all 4 operations involving different measures, scaling and decimal notation</li> </ul>	<ul style="list-style-type: none"> <li>Identify 3d shapes from 2d representations</li> <li>Estimate, compare, draw and measure angles to the nearest degree</li> <li>Recognise angles in relation to whole and fractions of whole turns. (a quarter, three quarters etc.)</li> <li>Use reasoning to derive unknown information (missing lengths and angles) to solve problems involving 2d shapes</li> <li>Solve problems involving the translation and reflection of shapes</li> </ul>	<ul style="list-style-type: none"> <li>Solve comparison, sum and difference problems using information presented in a line graph</li> <li>Complete, read and interpret information in tables, including timetables</li> </ul>

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Year 6							
Number & Place Value	Addition, Subtraction, Multiplication & Division	Fractions (incl. decimals & percentages)	Ratio & Proportion	Algebra	Measurement	Geometry – properties of shapes and position & direction	Statistics
<ul style="list-style-type: none"> <li>Understand place value; recognise the value of each digit up to 10000000 and be able to read and write them; round, order and compare</li> <li>Use negative numbers in context and calculate intervals across zero</li> <li>Round any whole number to a required degree of accuracy</li> <li>Solve number and practical problems that involve all of the above</li> </ul>	<ul style="list-style-type: none"> <li>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</li> <li>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as appropriate</li> <li>Solve multi-step problems in different contexts, including decimals, deciding which methods to use and explain reasoning</li> <li>Perform mental calculations, including with mixed operations and large numbers</li> <li>Use estimation to check answers to calculations and determine, in the context of a problem an appropriate degree of accuracy</li> <li>Identify common factors, common multiples and prime numbers</li> </ul>	<ul style="list-style-type: none"> <li>Simplify, compare, and order fractions, including fractions <math>&gt; 1</math></li> <li>Use all 4 operations to solve problems involving fractions and decimals (including mixed numbers)</li> <li>Calculate decimal fraction equivalents e.g. <math>\frac{3}{8} = 0.375</math></li> <li>To recall and use equivalences between fractions, decimals and percentages</li> <li>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>Multiply (proper fractions) and divide (by whole numbers) and write answers in simplest form</li> <li>Multiply one-digit numbers with up to two decimal places by whole numbers</li> </ul>	<ul style="list-style-type: none"> <li>Solve problems using ratio using multiplication and division facts</li> <li>Solve problems involving proportion, using knowledge of fractions and multiples</li> <li>Solve problems involving similar shapes where the scale factor is known or can be found</li> </ul>	<ul style="list-style-type: none"> <li>Use simple formulae</li> <li>Generate and describe linear number sequences</li> <li>Express missing number problems algebraically</li> <li>Find pairs of numbers that satisfy an equation with two unknowns</li> <li>Enumerate possibilities of combinations of two variables</li> </ul>	<ul style="list-style-type: none"> <li>Solve problems using all units               <ul style="list-style-type: none"> <li>use, read, write, convert and calculate using all four operations</li> <li>3 decimals points</li> </ul> </li> <li>Volume and capacity               <ul style="list-style-type: none"> <li>estimate calculate and compare using formulae</li> </ul> </li> <li>Perimeters and areas               <ul style="list-style-type: none"> <li>calculate, compare and estimate complex shapes</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>2D/3D Shapes draw accurately               <ul style="list-style-type: none"> <li>understand and apply the properties of circles</li> </ul> </li> <li>Angles               <ul style="list-style-type: none"> <li>use the properties to solve problems</li> </ul> </li> <li>Co-ordinates               <ul style="list-style-type: none"> <li>use all four quadrants</li> <li>solve problems</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Interpret and construct pie charts and line graphs and use these to solve problems</li> <li>Calculate and interpret the mean as an average</li> </ul>

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