



# Year 4 Maths

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<b>Application</b>	
Ideas, questions and lines of enquiry	<ul style="list-style-type: none"> <li>• Develops the mathematics they use in a wide range of contexts               <ul style="list-style-type: none"> <li>- Makes suggestions of ways to tackle a wide range of problems</li> <li>- Makes connections to previous work</li> </ul> </li> <li>• Chooses equipment appropriate to the task independently</li> <li>• Poses and answers questions related to a problem and suggests wide range of possible approaches to the solution</li> </ul>
Represent and communicate	<ul style="list-style-type: none"> <li>• Represents problems pictorially, using a model or with concrete resources</li> <li>• Presents work in a clear and organised way</li> <li>• Begins to work in an organised way from the start, using strategies such as recording results in order and checks for accuracy</li> <li>• Discusses their mathematical work and uses mathematical language in a more precise and accurate way</li> </ul>
Plan an approach and implement it	<ul style="list-style-type: none"> <li>• Uses facts and procedures to solve simple and complex problems</li> <li>• Develops own strategies for solving problems and applying mathematics to practical contexts</li> <li>• Finds solutions that match the context of the problem</li> </ul>
Computational complexity	<ul style="list-style-type: none"> <li>• solves problems with more than one step at least one of which is complex</li> </ul>

<b>Reasoning</b>	
Make connections	<ul style="list-style-type: none"> <li>• makes connections to previous work within mathematics and other subjects</li> <li>• poses and answers questions that will help make sense of the problem</li> <li>• poses 'what if' questions that may change the outcome or direction of the problem</li> </ul>
Evaluate	<ul style="list-style-type: none"> <li>• suggests refinements to elements of problem solving by comparing other approaches and against modelled examples</li> </ul>
Draw conclusions	<ul style="list-style-type: none"> <li>• predicts conclusions and reason why when referring to work</li> <li>• comments on whether the conclusion was expected</li> <li>• makes valid inferences when referring to own work</li> </ul>
Generalise	<ul style="list-style-type: none"> <li>• finds solutions and makes predictions by identifying patterns when working</li> <li>• forms generalised rules in words, using concrete resources or own representation</li> </ul>
Justify	<ul style="list-style-type: none"> <li>• justifies answers and solutions by referring to their own work and support with examples</li> </ul>

<b>Problem Solving Strategies</b>	
	<ul style="list-style-type: none"> <li>• identifies irrelevant information ; uses lists and tables to identify and organise information</li> <li>• uses informed 'guess and check'</li> <li>• seeks a pattern</li> <li>• draws a diagram or model</li> <li>• seeks an exception</li> <li>• breaks the problem into simpler steps – e.g. works backwards</li> </ul>

## **Year 4 Statutory Objectives**

<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>□ count in multiples of 6, 7, 9, 25 and 1000</li> <li>□ find 1000 more or less than a given number</li> <li>□ count backwards through zero to include negative numbers</li> <li>□ recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)</li> <li>□ order and compare numbers beyond 1000</li> <li>□ identify, represent and estimate numbers using different representations</li> <li>□ round any number to the nearest 10, 100 or 1000</li> <li>□ solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> <li>□ read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the</li> </ul>	<p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>□ add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</li> <li>□ estimate and use inverse operations to check answers to a calculation</li> <li>□ solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</li> </ul>	<p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>□ recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li>□ use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers</li> <li>□ recognise and use factor pairs and commutativity in mental calculations</li> <li>□ multiply two-digit and three-digit numbers by a one-digit number using formal written layout</li> <li>□ solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects</li> <li>□ solve problems involving multiplication and division</li> </ul>	<p><b>Fractions (including decimals)</b></p> <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; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.</li> <li>□ solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</li> <li>□ add and subtract fractions with the same denominator</li> <li>□ recognise and write decimal equivalents of any number of tenths or hundredths</li> <li>□ recognise and write decimal equivalents to <math>\frac{1}{4}</math>; <math>\frac{1}{2}</math>; <math>\frac{3}{4}</math></li> <li>□ find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths</li> <li>□ round decimals with one decimal place to the nearest whole number</li> <li>□ compare numbers with the same number of decimal places up to two decimal places</li> <li>□ solve simple measure and money problems involving fractions and</li> </ul>	<p><b>Measurement</b></p> <ul style="list-style-type: none"> <li>□ convert between different units of measure [for example, kilometre to metre; hour to minute]</li> <li>□ measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</li> <li>□ find the area of rectilinear shapes by counting squares</li> <li>□ estimate, compare and calculate different measures, including money in pounds and pence</li> <li>□ read, write and convert time between analogue and digital 12 and 24-hour clocks</li> <li>□ solve problems involving converting from hours to minutes; minutes to seconds; years</li> </ul>	<p><b>Geometry: properties of shapes</b></p> <ul style="list-style-type: none"> <li>□ compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</li> <li>□ identify acute and obtuse angles and compare and order angles up to two right angles by size</li> <li>□ identify lines of symmetry in 2-D shapes presented in different orientations</li> <li>□ complete a simple symmetric figure with respect to a specific line of symmetry</li> </ul>	<p><b>Geometry: position and direction</b></p> <ul style="list-style-type: none"> <li>□ describe positions on a 2-D grid as coordinates in the first quadrant</li> <li>□ describe movements between positions as translations of a given unit to the left/right and up/down</li> <li>□ plot specified points and draw sides to complete a given polygon</li> </ul>	<p><b>Statistics</b></p> <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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concept of zero and place value			decimals to two decimal places	to months; weeks to days			
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