



# Mathematics

## Key Learning Indicators of Performance: Year 3

Number – number and place value	Number – addition and subtraction	Number – multiplication and division
<ul style="list-style-type: none"> <li>▶ Count from 0 in multiples of 4, 8, 50 and 100.</li> <li>▶ Count up and down in tenths.</li> <li>▶ <u>Read and write numbers up to 1000 in numerals and in words.</u></li> <li>▶ <u>Read and write numbers with one decimal place.</u></li> <li>▶ <u>Identify, represent and estimate numbers using different representations (including the number line).</u></li> <li>▶ <u>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</u></li> <li>▶ <u>Identify the value of each digit to one decimal place.</u></li> <li>▶ <u>Partition numbers in different ways (e.g. <math>146 = 100 + 40 + 6</math> and <math>146 = 130 + 16</math>).</u></li> <li>▶ <u>Compare and order numbers up to 1000.</u></li> <li>▶ <u>Compare and order numbers with one decimal place.</u></li> <li>▶ <u>Find 1, 10 or 100 more or less than a given number.</u></li> <li>▶ <u>Round numbers to at least 1000 to the nearest 10 or 100.</u></li> <li>▶ <u>Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer.</u></li> <li>▶ <u>Describe and extend number sequences involving counting on or back in different steps.</u></li> <li>▶ <u>Read Roman numerals from I to XII.</u></li> <li>▶ Solve number problems and practical problems involving these ideas.</li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</u></li> <li>▶ <u>Select a mental strategy appropriate for the numbers involved in the calculation.</u></li> <li>▶ <u>Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context.</u></li> <li>▶ <u>Recall/use addition/subtraction facts for 100 (multiples of 5 and 10).</u></li> <li>▶ <u>Derive and use addition and subtraction facts for 100.</u></li> <li>▶ <u>Derive and use addition and subtraction facts for multiples of 100 totalling 1000.</u></li> <li>▶ <u>Add and subtract numbers mentally, including:</u> <ul style="list-style-type: none"> <li>- <u>a three-digit number and ones.</u></li> <li>- <u>a three-digit number and tens.</u></li> <li>- <u>a three-digit number and hundreds.</u></li> </ul> </li> <li>▶ <u>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</u></li> <li>▶ <u>Estimate the answer to a calculation and use inverse operations to check answers.</u></li> <li>▶ <u>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</u></li> </ul>	<ul style="list-style-type: none"> <li>▶ <u>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</u></li> <li>▶ <u>Understand that division is the inverse of multiplication and vice versa.</u></li> <li>▶ <u>Understand how multiplication and division statements can be represented using arrays.</u></li> <li>▶ <u>Understand division as sharing and grouping and use each appropriately.</u></li> <li>▶ <u>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.</u></li> <li>▶ <u>Derive and use doubles of all numbers to 100 and corresponding halves.</u></li> <li>▶ <u>Derive and use doubles of all multiples of 50 to 500.</u></li> <li>▶ <u>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</u></li> <li>▶ <u>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</u></li> <li>▶ <u>Solve problems, including missing number problems, involving multiplication and division (and interpreting remainders), including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.</u></li> </ul>



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## Key Learning Indicators of Performance: Year 3

Number – fractions	Geometry – properties of shapes	Measurement
<ul style="list-style-type: none"> <li>▶ Show practically or pictorially that a fraction is one whole number divided by another (e.g. <math>\frac{3}{4}</math> can be interpreted as <math>3 \div 4</math>).</li> <li>▶ <u>Understand that finding a fraction of an amount relates to division.</u></li> <li>▶ Recognise that tenths arise from dividing objects into 10 equal parts and in dividing one-digit numbers or quantities by 10.</li> <li>▶ Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</li> <li>▶ Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</li> <li>▶ Recognise and show, using diagrams, equivalent fractions with small denominators.</li> <li>▶ Add and subtract fractions with the same denominator within one whole [for example, <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math>].</li> <li>▶ Compare and order unit fractions, and fractions with the same denominators (including on a number line).</li> <li>▶ Count on and back in steps of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math> and <math>\frac{1}{3}</math>.</li> <li>▶ Solve problems that involve all of the above.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.</li> <li>▶ Recognise angles as a property of shape or a description of a turn.</li> <li>▶ 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.</li> <li>▶ Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</li> <li>▶ Continue to estimate and measure temperature to the nearest degree (°C) using thermometers.</li> <li>▶ <u>Understand perimeter is a measure of distance around the boundary of a shape.</u></li> <li>▶ Measure the perimeter of simple 2-D shapes.</li> <li>▶ Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</li> <li>▶ Estimate/read time with increasing accuracy to the nearest minute.</li> <li>▶ Record/compare time in terms of seconds, minutes, hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon, midnight.</li> <li>▶ Know the number of seconds in a minute and the number of days in each month, year and leap year.</li> <li>▶ Compare durations of events [for example to calculate the time taken by particular events or tasks].</li> <li>▶ Continue to recognise and use the symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds/pence.</li> <li>▶ Recognise that ten 10p coins equal £1 and that each coin is <math>\frac{1}{10}</math> of £1.</li> <li>▶ Add and subtract amounts of money to give change, using both £ and p in practical contexts.</li> <li>▶ Solve problems involving money and measures and simple problems involving passage of time.</li> </ul>
	<p><b>Geometry – position and direction</b></p> <ul style="list-style-type: none"> <li>• Describe positions on a square grid labelled with letters and numbers.</li> </ul>	<p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>▶ Use sorting diagrams to compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects.</li> <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>