

# Key Learning in Mathematics – 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>Read and write numbers up to 1000 in numerals and in words</li> <li>Read and write numbers with one decimal place</li> <li>Identify, represent and estimate numbers using different representations (including the number line)</li> <li>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</li> <li>Identify the value of each digit to one decimal place</li> <li>Partition numbers in different ways (e.g. <math>146 = 100 + 40 + 6</math> and <math>146 = 130 + 16</math>)</li> <li>Compare and order numbers up to 1000</li> <li>Compare and order numbers with one decimal place</li> <li>Find 1, 10 or 100 more or less than a given number</li> <li>Round numbers to at least 1000 to the nearest 10 or 100</li> <li>Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer</li> <li>Describe and extend number sequences involving counting on or back in different steps</li> <li>Read Roman numerals from I to XII</li> <li>Solve number problems and practical problems involving these ideas</li> </ul> | <ul style="list-style-type: none"> <li>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)</li> <li>Select a mental strategy appropriate for the numbers involved in the calculation</li> <li>Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context</li> <li>Recall/use addition/subtraction facts for 100 (multiples of 5 and 10)</li> <li>Derive and use addition and subtraction facts for 100</li> <li>Derive and use addition and subtraction facts for multiples of 100 totalling 1000</li> <li>Add and subtract numbers mentally, including:               <ul style="list-style-type: none"> <li>a three-digit number and ones</li> <li>a three-digit number and tens</li> <li>a three-digit number and hundreds</li> </ul> </li> <li>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</li> <li>Estimate the answer to a calculation and use inverse operations to check answers</li> <li>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> </ul> | <ul style="list-style-type: none"> <li>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)</li> <li>Understand that division is the inverse of multiplication and vice versa</li> <li>Understand how multiplication and division statements can be represented using arrays</li> <li>Understand division as sharing and grouping and use each appropriately</li> <li>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</li> <li>Derive and use doubles of all numbers to 100 and corresponding halves</li> <li>Derive and use doubles of all multiples of 50 to 500</li> <li>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</li> <li>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</li> <li>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</li> </ul>  |
| <b>Number – fractions</b>  | <b>Geometry – properties of shapes</b>  | <b>Measures</b>   |
| <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>Understand that finding a fraction of an amount relates to division</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 (<math>^{\circ}\text{C}</math>) using thermometers</li> <li>Understand perimeter is a measure of distance around the boundary of a shape</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> |
|  | <b>Geometry – position and direction</b>  |   |
|  | <ul style="list-style-type: none"> <li>Describe positions on a square grid labelled with letters and numbers</li> </ul>   |   |
|  | <b>Statistics</b>   |   |
|  | <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>  |   |