



## Year Six

<b>Number</b> Place value	<ul style="list-style-type: none"><li>• <b>Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.</b></li><li>• Round any whole number to a required degree of accuracy.</li><li>• Use negative numbers in context, and calculate intervals across zero.</li><li>• Solve number and practical problems that involve all of the above.</li></ul>
Addition, Subtraction, Multiplication and Division	<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>• <b>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.</b></li><li>• Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.</li><li>• Perform mental calculations, including with mixed operations and large numbers.</li><li>• Identify common factors, common multiples and prime numbers.</li><li>• <b>Use their knowledge of the order of operations to carry out calculations involving the four operations.</b></li><li>• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and explain why.</li><li>• Solve problems involving addition, subtraction, multiplication and division.</li><li>• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li></ul>
Fractions (including decimals and percentages)	<ul style="list-style-type: none"><li>• <b>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</b></li><li>• <b>Compare and order fractions, including fractions greater than 1.</b></li><li>• <b>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</b></li><li>• <b>Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>].</b></li><li>• <b>Divide proper fractions by whole numbers [for example, <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>].</b></li><li>• <b>Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, <math>\frac{3}{8}</math>].</b></li><li>• Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.</li><li>• <b>Multiply one-digit numbers with up to two decimal places by whole numbers.</b></li><li>• <b>Use written division methods in cases where the answer has up to two decimal places.</b></li><li>• <b>Solve problems which require answers to be rounded to specified degrees of accuracy.</b></li><li>• <b>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</b></li></ul>
Ratio and Proportion	<ul style="list-style-type: none"><li>• Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</li><li>• Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.</li><li>• Solve problems involving similar shapes where the scale factor is known or can be found.</li><li>• Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples [For example, 'I need four eggs and for every egg I need three spoonfuls of flour. How much flour do I need?']</li></ul>

<b>Algebra</b>	<ul style="list-style-type: none"> <li>• Use simple formulae [for example, the formulae for the area of a rectangle <math>a=lb</math>]</li> <li>• Generate and describe linear number sequences.</li> <li>• Express missing number problems algebraically [for example, <math>78 - y = 45</math>, <math>y = ?</math>]</li> <li>• Find pairs of numbers that satisfy an equation with two unknowns [for example, <math>p + q = 20</math>. What could <math>p + q</math> be?]</li> <li>• Enumerate possibilities of combinations of two variables.</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</li> <li>• Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.</li> <li>• Convert between miles and kilometres.</li> <li>• Recognise that shapes with the same areas can have different perimeters and vice versa.</li> <li>• Recognise when it is possible to use formulae for area and volume of shapes.</li> <li>• Calculate the area of parallelograms and triangles.</li> <li>• Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [for example, mm<sup>3</sup> and km<sup>3</sup>].</li> </ul>
<b>Geometry</b> Properties of Shapes	<ul style="list-style-type: none"> <li>• Draw 2-D shapes using given dimensions and angles.</li> <li>• Recognise, describe and build simple 3-D shapes, including making nets.</li> <li>• Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.</li> <li>• Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</li> <li>• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</li> </ul>
Position and Direction	<ul style="list-style-type: none"> <li>• Describe positions on the full coordinate grid (all four quadrants).</li> <li>• Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</li> </ul>
<b>Statistics</b>	<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>