

# YEAR FIVE MATHS OVERVIEW

Number and place value	Addition and subtraction	Multiplication and division	Fractions	Measurement	Geometry: properties of shapes	Geometry: position and direction	Statistics
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</li> <li>• count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>• interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</li> <li>• round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> <li>• solve number problems and practical problems that involve all of the above</li> <li>• read Roman numerals to 1000 (M) and recognise years written in Roman numerals</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>• add and subtract numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> <li>• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>• establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>• multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</li> <li>• multiply and divide numbers mentally drawing upon known facts</li> <li>• divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</li> <li>• multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> <li>• recognise and use square numbers and cube numbers, and the notation for squared ( ) and cubed ( )</li> <li>• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</li> <li>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> <li>• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• compare and order fractions whose denominators are all multiples of the same number</li> <li>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>• recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number [ for example, <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}</math> ]</li> <li>• add and subtract fractions with the same denominator and multiples of the same number</li> <li>• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> <li>• read and write decimal numbers as fractions [ for example, <math>0.71 = \frac{71}{100}</math> ]</li> <li>• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>• round decimals with two decimal places to the nearest whole number and to one decimal place</li> <li>• read, write, order and compare numbers with up to three decimal places</li> <li>• solve problems involving number up to three decimal places</li> <li>• recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100, and as a decimal</li> <li>• solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}, \frac{1}{5}</math> and those with a denominator of a multiple of 10 or 25</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</li> <li>• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</li> <li>• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> <li>• calculate and compare the area of rectangles (including squares) using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</li> <li>• estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids(including cubes)] and capacity[for example, using water ]</li> <li>• solve problems involving converting between units of time</li> <li>• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• identify 3-D shapes, including cubes and other cuboids, from 2-D representations</li> <li>• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</li> <li>• draw given angles, and measure them in degrees ( )</li> <li>• identify: <ul style="list-style-type: none"> <li>• angles at a point and one whole turn (total 360 )</li> <li>• angles at a point on a straight line and ½ turn ( total 180 )</li> </ul> </li> <li>• other multiples of 90</li> <li>• use the properties of rectangles to deduce related facts and find missing lengths and angles</li> <li>• distinguish between regular and irregular polygons based on reasoning about equal sides and angles</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed</li> </ul>	<p>Pupils should be taught to:</p> <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>