



Numeracy Overview Year 5/6

| Number | Measurement | Geometry | Statistics |
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| <p>Year 5 Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</p> <p>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>Solve number problems and practical problems that involve all of the above</p> <p>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p> <p>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>Add and subtract numbers mentally with increasingly large numbers</p> <p>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>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</p> <p>Multiply and divide numbers mentally drawing upon known facts</p> <p>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</p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)</p> <p>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p> <p>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p> <p>Compare and order fractions whose denominators are all multiples of the same number</p> <p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p> <p>Read and write decimal numbers as fractions</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>Read, write, order and compare numbers with up to three decimal places</p> <p>Solve problems involving number up to three decimal places</p> <p>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</p> <p>Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.</p> | <p>Year 5 Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes</p> <p>Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]</p> <p>Solve problems involving converting between units of time</p> <p>Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</p> | <p>Year 5 Identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p> <p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</p> <p>Draw given angles, and measure them in degrees (°)</p> <p>Identify:</p> <ul style="list-style-type: none"> • angles at a point and one whole turn (total 360°) • angles at a point on a straight line and half a turn (total 180°) • other multiples of 90° <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles</p> <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p> <p>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.</p> | <p>Year 5 Solve comparison, sum and difference problems using information presented in a line graph</p> <p>Complete, read and interpret information in tables, including timetables.</p> |



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| <p>Year 6 Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</p> <p>Round any whole number to a required degree of accuracy</p> <p>Use negative numbers in context, and calculate intervals across zero</p> <p>Solve number and practical problems that involve all of the above.</p> <p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>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</p> <p>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</p> <p>Perform mental calculations, including with mixed operations and large numbers</p> <p>Identify common factors, common multiples and prime numbers</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>Solve problems involving addition, subtraction, multiplication and division</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p> <p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>Compare and order fractions, including fractions > 1</p> <p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form</p> <p>Divide proper fractions by whole numbers</p> <p>Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction</p> <p>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</p> <p>Multiply one-digit numbers with up to two decimal places by whole numbers</p> <p>Use written division methods in cases where the answer has up to two decimal places</p> <p>Solve problems which require answers to be rounded to specified degrees of accuracy</p> <p>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p> <p>Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</p> <p>Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p> <p>Use simple formulae</p> <p>Generate and describe linear number sequences</p> <p>Express missing number problems algebraically</p> <p>Find pairs of numbers that satisfy an equation with two unknowns</p> <p>Enumerate possibilities of combinations of two variables.</p> | <p>Year 6 Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>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</p> <p>Convert between miles and kilometres</p> <p>Recognise that shapes with the same areas can have different perimeters and vice versa</p> <p>Recognise when it is possible to use formulae for area and volume of shapes</p> <p>Calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].</p> | <p>Year 6 Draw 2-D shapes using given dimensions and angles</p> <p>Recognise, describe and build simple 3-D shapes, including making nets</p> <p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</p> <p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p> <p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p> <p>Describe positions on the full coordinate grid (all four quadrants)</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p> | <p>Year 6 Interpret and construct pie charts and line graphs and use these to solve problems</p> <p>Calculate and interpret the mean as an average.</p> |
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