



Moorland Primary School – Progression of Knowledge in Maths

Year 6	Place value	Addition and subtraction	Multiplication and division	Fractions	Measurement
	<p><u>COUNTING</u> Use negative numbers in context and calculate intervals across zero.</p> <p><u>COMPARING, READING & WRITING NUMBERS:</u> Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.</p> <p><u>UNDERSTANDING PLACE VALUE</u> Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1,000 where the answers are up to three decimal places.</p> <p><u>ROUNDING</u> Round any whole number to a required degree of accuracy.</p> <p><u>PROBLEM SOLVING</u> Solve number and practical problems that involve all the above</p>	<p><u>MENTAL CALCULATION</u> Perform mental calculations, including with mixed operations and large numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations.</p> <p><u>INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS</u> Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> <p><u>PROBLEM SOLVING</u> Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p>	<p><u>MENTAL CALCULATION</u> Perform mental calculations, including with mixed operations and large numbers. Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8)</p> <p><u>WRITTEN CALCULATION</u> Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. Divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context. 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. Use written division methods in cases where the answer has up to two decimal places</p> <p><u>MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS</u> Identify common factors, common multiples and prime numbers.</p>	<p><u>COMPARING FRACTIONS</u> Compare and order fractions, including fractions >1.</p> <p><u>COMPARING DECIMALS</u> Identify the value of each digit in numbers given to three decimal places.</p> <p><u>ROUNDING INCLUDING DECIMALS</u> Solve problems which require answers to be rounded to specified degrees of accuracy.</p> <p><u>EQUIVALENCE</u> Use common factors to simplify fractions. Use common multiples to express fractions in the same denomination. Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction (e.g. 3/8). Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p> <p><u>ADDITION AND SUBTRACTION</u> Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</p>	<p><u>COMPARING AND ESTIMATING</u> Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm³) and cubic metres (m³), and extending to other units such as mm³ and km³.</p> <p><u>MEASURING & CALCULATING</u> Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Recognise that shapes with the same areas can have different perimeters and vice versa. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [e.g. mm³ and km³]. Recognise when it is possible to use formulae for area and volume of shapes</p> <p><u>CONVERTING</u> 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>



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		<p>Use common factors to simplify fractions.</p> <p>Use common multiples to express fractions in the same denomination</p> <p>Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm³) and cubic metres (m³), and extending to other units such as mm³ and km³.</p> <p>ORDER OF OPERATIONS</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations.</p> <p>INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> <p>PROBLEM SOLVING</p> <p>Solve problems involving addition, subtraction, multiplication and division.</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found</p>	<p>MULTIPLICATION AND DIVISION OF FRACTIONS</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$).</p> <p>Multiply one-digit numbers with up to two decimal places by whole numbers.</p> <p>Divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$).</p> <p>MULTIPLICATION AND DIVISION OF DECIMALS</p> <p>Multiply one-digit numbers with up to two decimal places by whole numbers.</p> <p>Multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places.</p> <p>Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places.</p> <p>Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$).</p> <p>Use written division methods in cases where the answer has up to two decimal places</p>	<p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>Convert between miles and kilometres.</p>
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Year	Geometry	Statistics	Ratio	Algebra
6	<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>Draw 2-D shapes using given dimensions and angles Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.</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>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>	<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 [e.g. 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>Express missing number problems algebraically.</p> <p>Find pairs of numbers that satisfy number sentences involving two unknowns.</p> <p>Enumerate all possibilities of combinations of two variables.</p> <p>Use simple formulae Recognise when it is possible to use formulae for area and volume of shapes</p>