MathsMap RouteMap Year 6

Strand / Tier	Number and Place Value, approximation and estimation/rounding	Addition, Subtraction, Multiplication & Division (Calculation)	Fractions, Decimals and Percentages	Ratio and Proportion	Algebra	Measurement	Geometry – Properties of Shape & Position and Direction	Statistics
29 End of Year 6 Exp's	• Solve number problems and practical problems that involve all of the below	• **Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** • Use their knowledge of the order of operations to carry out calculations involving the four operations • **Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy**	• **Use written division methods in cases where the answer has up to two-decimal places** • **Solve problems which require answers to be rounded to specified degrees of accuracy** • **Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts**	• **Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples**	• Enumerate all possibilities of combinations of two variables	• Calculate, estimate and compare volume of cubes and cuboids using standard units (mm³ to km³) • Recognise when it is possible to use the formulae for the volume of shapes • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	• Illustrate and name parts of a circle, including radius, diameter and circumference and know that the diameter is twice the radius • **Draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes** • Describe positions on the full co-ordinate grid (all four quadrants)	• Construct pie charts and use these to solve problems
28	• **Use negative numbers in context, and calculate intervals across zero** • **Round any whole number to a required degree of accuracy (in context)**	• Perform mental calculations, including with mixed operations and large numbers • **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** • **When dividing, interpret remainders as whole number remainders, fractions, or by rounding, as appropriate to the context**	• Divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$) • Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) • Identify the value of each digit to three decimal places • Multiply and divide numbers with three decimal places by 10 giving answers up to three decimal places • Multiply and divide numbers with three decimal places by 100 giving answers up to three decimal places • Multiply and divide numbers with three decimal places by 1000 giving answers up to three decimal places • Multiply one-digit numbers with up to two-decimal places by whole numbers	• **Solve problems involving the calculation of percentages** (e.g. of measures) such as 15% of 360) and the use of percentages for comparison • Solve problems involving similar shapes, where the scale factor is known or can be found	• Generate and describe linear number sequences • Find pairs of numbers that satisfy an equation with two unknowns	• Recognise that shapes with the same areas can have different perimeters and vice versa • Calculate the perimeter of parallelograms and triangles • Recognise when it is possible to use the formulae for the area of shapes	• Recognise and build simple 3D shapes, including making nets • **Find unknown angles in any triangles, quadrilaterals and regular polygons** • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	• **Interpret pie charts and line graphs and use these to solve problems** • Construct line graphs and use these to solve problems
27	• Read, write, order and compare numbers up to 10,000,000 • Determine the value of each digit in numbers up to 10,000,000	• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Identify common factors, common multiples and prime numbers	• Use common factors to simplify fractions • Use common multiples to express fractions in the same denomination • Compare and order fractions, including fractions >1 • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$)	• Solve problems involving the relative sizes of two quantities, where missing values can be found by using integer multiplication and division facts	• Express missing number problems algebraically • **Use simple formulae**	• **Use, read, write and convert between standard units using up to three decimal places** • Convert between miles and km	• **Compare and classify geometric shapes based on their properties and sizes** • Describe simple 3D shapes • Draw 2D shapes using given dimensions and angles	• **Calculate and interpret the mean as an average**