Year 6 - Yearly Math Objectives

Number Number and Place Value	Number Addition and Subtraction	Number Multiplication and Division	Number Fractions
• Count forwards or backwards in steps of integers, decimals or powers of 10 for any number. • Read and write numbers up to 10 000 000. • Determine the value of each digit in numbers up to 10 000 000. • Identify the value of each digit to three decimal places. • Identify, represent and estimate numbers using the number line. • Order and compare numbers up to 10 000 000. • Order and compare numbers including integers, decimals and negative numbers. • Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number. • Round any whole number to a required degree of accuracy. • Round decimals with three decimal places to the nearest whole number or one or two decimal places. • Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. • Use negative numbers in context, and calculate intervals across zero. • Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal. • Solve number and practical problems that involve all of the above.	• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places). • Select a mental strategy appropriate for the numbers involved in the calculation. • Perform mental calculations, including with mixed operations and large numbers and decimals. • Add and subtract whole numbers and decimals using formal written methods (columnar addition and subtraction). • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • Solve problems involving addition, subtraction, multiplication and division, including those with missing numbers.	• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method). • Identify common factors, common multiples and prime numbers. • Use partitioning to double or halve any number. • 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. • Multiply one-digit numbers with up to two decimal places by whole numbers. • 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. • Use written division methods in cases where the answer has up to two decimal places. • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Solve problems involving addition, subtraction, multiplication and division.	• Compare and order fractions, including fractions >1 (including on a number line). • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. • Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$). • 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 (using diagrams) (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$). • Divide proper fractions by whole numbers (using diagrams) (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$). • Find simple percentages of amounts. • Solve problems involving fractions. • Solve problems which require answers to be rounded to specified degrees of accuracy. • Solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison.

Ratio and Proportion	Algebra	Measurement	Geometry Properties of shape	Geometry Position and direction	Statistics
• Solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication and division facts • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples • Solve problems involving similar shapes where the scale factor is known or can be found	• Express missing number problems algebraically. • Use simple formulae. • Generate and describe linear number sequences. • Find pairs of numbers that satisfy an equation with two unknowns. • Enumerate possibilities of combinations of two variables.	• Use, read and write standard units of length using decimal notation to three decimal places. • Recognise that shapes with the same areas can have different perimeters and vice versa. • Calculate the area of parallelograms and triangles. • Recognise when it is possible to use the formulae for area and volume of shapes. • Use, read and write standard units of mass using decimal notation to three decimal places. • Use, read and write standard units of volume using decimal notation to three decimal places. • Calculate and estimate 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). • 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). • *Calculate differences in temperature, including those that involve a positive and negative temperature.* • 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 three decimal places. • Convert between miles and kilometres. • Use, read and write standard units of time. • Solve problems involving the calculation and conversion of units of measure *(including money and time)*, using decimal notation up to three decimal places where appropriate.	• Compare and classify geometric shapes based on their properties and sizes • Draw 2-D shapes using given dimensions and angles • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • Recognise, describe and build simple 3-D shapes, including making nets • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles • Find unknown angles in any triangles, quadrilaterals, and regular polygons	• Describe positions on the full coordinate grid (all four quadrants) • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	• Continue to complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes) • Interpret and construct pie charts and line graphs and use these to solve problems • Solve comparison, sum and difference problems using information presented in all types of graph • Calculate and interpret the mean as an average