MATHEMATICS CURRICULUM – YEAR 6

AREA OF MATHS	KNOWLEGDE/SKILLS	APPLYING
Number, place value, approximation & estimation	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit Round any whole number to a required degree of accuracy Use negative numbers in context, and calculate intervals across zero	Solve number problems and practical problems that involve all elements of place value
Addition, Subtraction, Multiplication & Division	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 long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context 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 context Perform mental calculations, including with mixed operations and large numbers identify common factors, common multiples and prime numbers 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.	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
Fractions (including Decimals & Percentages)	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination Compare and order fractions, including fractions >1	Solve problems which require answers to be rounded to specified degrees of accuracy

	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. 1/4 × 1/2 = 1/8) Divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6). Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) 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 Multiply one digit numbers with up to two decimal places by whole numbers Use written division methods in cases where the answer has up to two decimal places Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	
Ration & Proportion	Understand the terms ratio and proportion and what each represents.	Solve problems involving the relative sizes of two quantities, where missing values can be found by using integer multiplication and division facts Solve problems involving the calculations 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

		Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
Algebra	Express missing number problems algebraically Use simple formulae expressed in words Generate and describe linear number sequences Find pairs of numbers that satisfy number sentences involving two unknowns.	Enumerate all possibilities of combinations of two variables
Measures	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 Convert between miles and kilometres 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 centimetre cubed (cm3) and cubic metres (m3) and extending to other units, such as mm3 and km3.	Solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate
Geometry – properties of shapes	Draw 2-D shapes using given dimensions and angles Recognise, describe and build simple 3-D shapes, including making nets Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	

	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	
Geometry- position, direction, motion	Describe positions on the full coordinates grid (all four quadrants) Draw and translate simple shapes on the coordinates plane, and reflect them in the axes	
Statistics	Calculate and interpret the mean as an average	Interpret and construct pie charts and line graphs and use these to solve problems