Maths Curriculum - Year 6 - Key Skills Areas

Number and Place Value:

	Counting	Writing Numbers	Representing Numbers	Place Value	Comparing and Ordering	Rounding	Problems
Year 6	• use negative numbers in context, and calculate intervals across zero	• read, write, order and compare numbers up to 10 000 000 and determine the value of each digit		• read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	• 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	• solve number and practical problems that involve all of the above.

Addition and Subtraction:

	Number Statements	Mental Recall	Addition	Subtraction	Relationships	Problems
Year 6		• 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	• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Examples:

Written Methods:

Children should continue to use the **Formal Column** method to add numbers of increasing complexity. This should include adding more than 3 numbers with different numbers of decimal places.

Written Methods:

Children should continue to use the **Compact Decomposition** method to add numbers of increasing complexity. This should include subtracting numbers with varying numbers of digits, with different numbers of decimal places.
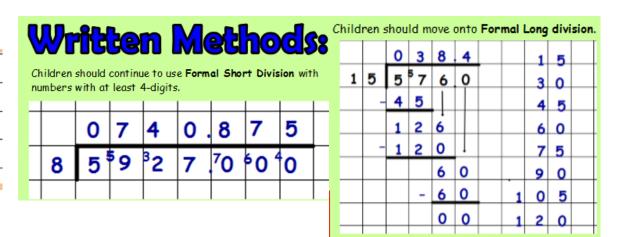
Multiplication and Division:

	Number Statements	Mental Recall	Written Calculations	Relationships	Numbers	Problems
Year 6	• Identify common factors, common multiples and prime numbers	• 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 efficient 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	• Use their knowledge of the order of operations to carry out calculations involving the four operations • Using their knowledge of the order of operations to carry out calculations involving the four operations		• Solve problems involving addition, subtraction, multiplication and division • Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy

Examples:

Written Methods:

Children should continue to use **Long Multiplication** with decimal numbers. When decimals are introduced, children can use the Grid Method and Expanded Method first to familiarise themselves with the change in difficulty of the numbers.

Written Methods:

Children should continue to use **Formal Short Division** with numbers with at least 4-digits.

Children should move onto **Formal Long division.**

Fractions:

	Recognising Fractions	Decimals	Finding FDP	Links to Place Value	Comparing and Ordering FDP	Operations	Problems
Year 6	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	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		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	Compare and order fractions including fractions >1 Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	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. ¼ x ½ = 1/8) Divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6) 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	Solve problems which require answers to be rounded to specified degrees of accuracy.

Ratio and Proportion:

	Using x and ÷ facts	Using percentages	Simple Scale Factor	Using factors/multiples
Year 6	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 calculation of percentages [for example, of measures, and 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:

	Equations	Formulae	Sequences
Year 6	Express missing number problems algebraically Find pairs of numbers that satisfy number sentences involving two unknowns Enumerate all possibilities of combinations of two variables	Use simple formulae	Generate and describe linear number sequences

Non Key Skills Areas:

Geometry:

	2D Shapes	3D Shapes	Symmetry	Angles	Coordinates	Translations	Problems
Year 6	Draw 2D 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 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	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	

Measures:

	Measuring	Units	Money	Area	Perimeter	Capacity	Time	Problems
Year 6		Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate 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 three decimal places Convert between miles and kilometre 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 (e.g. mm^3 and km^3).		Recognise that shapes with the same areas can have different perimeters and vice versa Recognise when it is possible to use formulae for area and volume of shapes Calculate the area of parallelograms and triangles Recognise when it is necessary to use the formulae for area and volume of shapes	Recognise that shapes with the same areas can have different perimeters and vice versa	Recognise when it is possible to use formulae for area and volume of shapes Recognise when it is necessary to use the formulae for area and volume of shapes 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 (e.g. mm^3 and km^3).		Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate

Statistics:

	Constructing Graphs	Interpreting Graphs	Tables	Averages	Problems
Year 6	Interpret and construct **pie charts** and **line graphs** and use these to solve problems	Interpret and construct **pie charts** and **line graphs** and use these to solve problems		Calculate and interpret the **mean** as an average	