Year 6 Maths Planning

Area of Maths	Knowledge/Learning Content	
Number and Place Value	• 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.	Use and apply place value knowledge across a variety of contexts through: • Word problems • Practical problems • Investigations • Verbal and written reasoning Use correct mathematical language.
Addition and Subtraction Multiplication and Division	• Add and subtract large numbers using a formal written method. • 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 one and two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. • Perform mental calculations, including with mixed operations and large numbers. • Identify common factors, common multiples, and prime numbers. • Recognise and calculate square and cubed 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.	Calculate accurately using an efficient method of choice. Reason and solve problems which include: • Missing numbers • Using number facts • Investigations • Single and multi-steps • Bar method • Formal methods Use correct mathematical language.
Fractions, Decimals and Percentages	• Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. • Compare and order fractions. • Add and subtract fractions with different denominators and mixed numbers. • Multiply fractions by integers. • Multiply simple pairs of proper fractions, writing the answer in its simplest form.	Reason and solve problems which include: • Real life problem solving • Single and multi-step problems • Problems that include a mixture of fractions, decimals

	- Divide proper fractions by whole numbers. - Find fractions of amounts. - Associate a fraction with division and calculate decimal fraction equivalents. - Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. - Round decimals. - Add and subtract decimals. - Multiply and divide 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. - Understand how to calculate percentages. - Calculate and recall equivalences between simple fractions, decimals and percentages.	and percentages - using equivalences in different contexts - Missing fractions on a number line - Problems involving rounding Use correct mathematical language.
Ratio and Proportion	- 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 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.	Reason and solve problems which include: - Real life problem solving with both ratio and proportion - Single and multi-step problems - Investigations - Drawing and annotating shapes Use correct mathematical language.
Algebra	- Generate and describe linear number sequences. - Form expressions. - Substitute different values into expressions. - Create and use simple formulae. - Express missing number problems algebraically. - Find pairs of numbers that satisfy an equation with two unknowns. - Explore possibilities of combinations of two variables.	Reason and solve problems which include: - Investigations - Games - Missing number puzzles - Code breaking - Labelling diagrams

		Use correct mathematical language.
Measurement	• Calculate and convert metric and imperial measurements, 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 up to three decimal places. • Convert between miles and kilometres. • 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. • Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units [for example mm^3 and km^3].	Reason and solve problems which include: • Real life problem solving • Single and multi-step problems • Drawing and annotating diagrams Use correct mathematical language.
Geometry: properties of shape	• 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.	Reason and solve problems which include: • Real life problem solving • One and two-step problems • Drawing and annotating shapes involving protractors • Drawing and labelling circles using a compass Use correct mathematical language.
Geometry: position and direction	• 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.	• Read, plot and draw shapes and pictures on full coordinate grid • Solve problems using knowledge and reasoning of the four quadrants Use correct mathematical language.
Statistics	• Interpret and construct bar, line graphs and pie charts. Use these to represent data and solve problems. • Calculate and interpret the mean as an average.	Reason and solve a variety of single and multi-step questions using the

		information presented in a range of charts and graphs. Use correct mathematical language.