Year 6 Maths Objectives

Mathematical vocabulary	Number and place value	Number: Addition, subtraction, Multiplication and division	Fractions (including decimals and percentages)	Ratio and proportion	Algebra	Measurement	Geometry – properties of shapes	Geometry – position and direction	Statistics
To read, spell and pronounce mathematical vocabulary correctly.	read, write, order and compare numbers up to 10,000,000 and determine the value of each digit	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	use common factors to simplify fractions; use common multiples to express fractions in the same denomination	solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts	use simple formulae	solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate	draw 2-D shapes using given dimensions and angles	describe positions on the full coordinate grid (all 4 quadrants)	interpret and construct pie charts and line graphs and use these to solve problems
	round any whole number to a required degree of accuracy	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	compare and order fractions, including fractions >1	solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison	generate and describe linear number sequences	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 3 decimal places	recognise, describe and build simple 3-D shapes, including making nets	draw and translate simple shapes on the coordinate plane, and reflect them in the axes	calculate and interpret the mean as an average
	use negative numbers in context, and calculate intervals across 0	divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	solve problems involving similar shapes where the scale factor is known or can be found	express missing number problems algebraically	convert between miles and kilometres	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals,		

		according to the context perform mental calculations, including with mixed operations and large numbers				and regular polygons			
	solve number and practical problems that involve all of the above	identify common factors, common multiples and prime numbers	multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]	solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	find pairs of numbers that satisfy an equation with 2 unknowns	recognise when it is possible to use formulae for area and volume of shapes	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles		
		use their knowledge of the order of operations to carry out calculations involving the 4 operations	divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]		enumerate possibilities of combinations of 2 variables	calculate the area of parallelograms and triangles			
		solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]		recognise that shapes with the same areas can have different perimeters and vice versa	calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]			

			solve problems involving addition, subtraction, multiplication and division	identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places			illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius			
			use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	multiply one-digit numbers with up to 2 decimal places by whole numbers						
				use written division methods in cases where the answer has up to 2 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						