

Maths – End of Year 6 Expectations

New National Curriculum Objectives

Number and Place Value	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
	identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1 000 where the answers are up to three decimal places
	round any whole number to a required degree of accuracy
	solve problems which require answers to be rounded to specified degrees of accuracy
	solve number and practical problems that involve all of the above
	Use decimal notation for tenths, hundredths and thousandths, partition and order numbers with up to three decimal places, and position them on the number line
Addition and Subtraction	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
	use estimation to check answers to calculations and determine, in the context of a problem, levels 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
Multiplication and Division	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
	divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 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
	use written division methods in cases where the answer has up to two decimal places
	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, levels of accuracy
	recognise that prime numbers have only two factors and identify prime numbers less than 100; find the prime factors of two-digit whole numbers
	Check calculations for accuracy using the rules of divisibility
	solve problems involving addition, subtraction, multiplication and division
Fractions, decimals and Percentages	compare and order fractions including fractions >1
	identify the value of each digit in numbers given to three decimal places
	solve problems which require answers to be rounded to specified degrees of accuracy
	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)
	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
	find fractions and percentages of whole-number quantities, e.g. $\frac{5}{8}$ of 96, 65% of £260
Decimals and Percentages	multiply one-digit numbers with up to two decimal places by whole numbers
	Divide proper fractions by whole numbers
	multiply one-digit numbers with up to two decimal places by whole numbers
	multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places

	<p>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</p> <p>use written division methods in cases where the answer has up to two decimal places</p>
Ratio and Proportion	<p>solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</p> <p>solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison</p> <p>solve problems involving similar shapes where the scale factor is known or can be found</p> <p>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>
Algebra	<p>express missing number problems algebraically</p> <p>find pairs of numbers that satisfy number sentences involving two unknowns</p> <p>use simple formulae</p> <p>generate and describe linear number sequences</p>
Measurement and Time	<p>calculate, estimate and compare volume of cubes and cuboids using standard units. Extend to mm and km</p> <p>recognise when it is possible to use formulae for area and volume of shapes</p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>recognise that shapes with the same areas can have different perimeters and vice versa</p> <p>calculate the area of parallelograms and triangles</p> <p>calculate, estimate and compare volume of cubes and cuboids using standard units</p> <p>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</p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>convert between miles and kilometres</p>
Geometry Shape and Position	<p>recognise, describe and build simple 3-D shapes, including making nets</p> <p>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p> <p>draw 2-D shapes using given dimensions and angles</p> <p>compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</p> <p>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</p> <p>describe positions on the full coordinate grid (all four quadrants)</p> <p>draw and translate / rotate simple shapes on the coordinate plane, and reflect them in the axes.</p>
Statistics	<p>interpret and construct pie charts and line graphs and use these to solve problems; Solve problems involving selecting, processing, presenting and interpreting data, using ICT where appropriate; construct and interpret frequency tables, bar charts with grouped discrete data, and line graphs; interpret pie charts; draw conclusions</p> <p>calculate and interpret the mean, median and mode as an average</p> <p>discuss the likelihood (probability) of an event.</p>