



Year 6 Programme of Study

Mathematics Mastery is fully aligned to the National Curriculum. Our Programmes of Study outline the objectives taught throughout the year in Mathematics Mastery lessons*.

*Some National Curriculum objectives are also further embedded during Maths Meetings, see Maths Meeting termly guidance [here](#).

Autumn	1. Integers & Decimals (2 weeks)	<ul style="list-style-type: none"> • 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 problems involving addition and subtraction • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
	2. Multiplication and division (3 weeks)	<ul style="list-style-type: none"> • 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 • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • multiply one-digit numbers with up to two decimal places by whole numbers • 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 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 • perform mental calculations, including with mixed operations and large numbers • solve problems which require answers to be rounded to specified degrees of accuracy
	3. Calculation problems (2 weeks)	<ul style="list-style-type: none"> • find pairs of numbers that satisfy an equation with two unknowns • enumerate possibilities of combinations of two variables • use knowledge of the order of operations to carry out calculations involving the four operations • generate and describe linear number sequences • express missing number problems algebraically • solve problems involving addition, subtraction, multiplication and division
	4. Fractions (2 weeks)	<ul style="list-style-type: none"> • use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1 • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • recall and use equivalences between simple fractions and decimals, including in different contexts • generate and describe linear number sequences (with fractions) • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
	5. Missing angles and lengths (1 week)	<ul style="list-style-type: none"> • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • express missing number problems algebraically • compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons



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Spring	6. Coordinates and shape (2 weeks)	<ul style="list-style-type: none"> • use negative numbers in context, and calculate intervals across zero • describe positions on the full coordinate grid (all four quadrants) • draw 2-D shapes using given dimensions and angles • draw and translate simple shapes on the coordinate plane, and reflect them in the axes • recognise, describe and build simple 3-D shapes, including making nets • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • solve number and practical problems that involve all of the above
	7. Fractions (1 week)	<ul style="list-style-type: none"> • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] • divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] • recall and use equivalences between simple fractions and decimals, including in different contexts
	8. Decimals and measures (3 weeks)	<ul style="list-style-type: none"> • 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 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 • use simple formulae • calculate the area of parallelograms and triangles • 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] • generate and describe linear number sequences (with decimals)
	9. Percentages and statistics (2 weeks)	<ul style="list-style-type: none"> • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts • solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison • interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average
	10. Proportion problems (2 weeks)	<ul style="list-style-type: none"> • 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 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