



Curriculum map – Mathematics (2023-2024)

YEAR 7	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
TOPIC(s)	Unit 1 Place Value Unit 2 Properties of Number	Unit 3 Arithmetic Procedures with Integers and Decimals Unit 4 Estimation and Rounding	Unit 5 Expressions and Equations	Unit 6 Averages from a List Unit 7 Arithmetic Procedures with Fractions	Unit 8 Understanding Multiplicative Relationships: Fractions and Ratio	Unit 9 Perimeter and Area Unit 10 Plotting Coordinates

YEAR 7	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
What students will know	<p>Unit 1</p> <p>An integer is a whole number (positive or negative).</p> <p>The place value of each digit in an integer up to 1,000,000,000.</p> <p>The place value of each digit in numbers given to five decimal places.</p> <p>The difference between terminating and recurring decimals, including recurring notation.</p> <p>The meaning of the symbols =, ≠, <, >, ≤ and ≥.</p> <p>Unit 2</p> <p>The square numbers up to 225 and their corresponding roots.</p> <p>The cube numbers 1, 8, 27, 64, 125 and 1000 and their corresponding roots.</p> <p>A prime number has exactly two factors.</p> <p>The prime numbers up to 50.</p> <p>A composite number can be written uniquely as a product of its prime factors.</p>	<p>Unit 3</p> <p>The order in which to carry out calculations (BIDMAS), where multiply and divide hold the same priority and add and subtract hold the same priority.</p> <p>Unit 4</p> <p>Understand the concept of significant figures</p> <p>Understand what is meant by a suitable degree of accuracy</p>	<p>Unit 5</p> <p>The conventions and vocabulary of algebra.</p> <p>The difference between an expression and an equation.</p>	<p>Unit 6</p> <p>The advantages and disadvantages of each type of average and use this to select the most appropriate to represent a data set.</p> <p>Unit 7</p> <p>To add or subtract fractions, the denominators need to be equal.</p>	<p>Unit 8</p> <p>The correct way to read a written ratio.</p> <p>The order of a ratio is important.</p>	<p>Unit 9</p> <p>Perimeter is the distance round a 2-dimensional shape.</p> <p>Area is the space taken up by a 2-dimensional shape.</p> <p>The formula for the area of a rectangle.</p> <p>Perpendicular lines meet at a right angle.</p> <p>The formula for the area of a triangle.</p> <p>The formula for the area of a parallelogram.</p> <p>The formula for the area of a trapezium.</p> <p>Unit 10</p> <p>All the points which satisfy a relationship can be represented graphically.</p> <p>The x-axis is represented by the equation $y = 0$.</p> <p>The y-axis is represented by the equation $x = 0$.</p>

What students will be able to do

<p>Unit 1</p> <p>Read and write integers up to 1,000,000,000 in words and figures.</p> <p>Position integers, up to 1,000,000,000 on a number line.</p> <p>Compare and order integers up to 1,000,000,000.</p> <p>Read and write numbers given to any number of decimal places in words and figures.</p> <p>Position numbers given to three decimal places on a number line.</p> <p>Compare and order numbers given up to three decimal places.</p> <p>Unit 2</p> <p>Justify whether a number is, or is not a multiple of a given integer.</p> <p>Use the notation for square roots ($\sqrt{\quad}$) and cube roots ($\sqrt[3]{\quad}$).</p> <p>Use the keys for squares, cubes, square root and cube root on a calculator.</p> <p>Simplify numerical expressions using index notation (positive integer powers).</p> <p>Evaluate calculations written using index notation (positive integer powers).</p> <p>Use a calculator to evaluate calculations involving positive integer powers.</p> <p>Justify whether a number is, or is not, a factor of a given integer.</p> <p>Justify whether a number is, or is not, prime.</p>	<p>Unit 3</p> <p>Add and subtract decimals, with any number of decimal places, using columnar addition and subtraction.</p> <p>Multiply a positive integer by a positive integer, with up to three digits, using the formal written method of long multiplication.</p> <p>Use written division methods in cases where the answer is a decimal, including recurring decimals.</p> <p>Multiply and divide positive integers, by any power of 10 (10, 100, 1000 etc.).</p> <p>Multiply and divide decimals, by any power of 10 (10, 100, 1000 etc.).</p> <p>Multiply a positive integer by a decimal (up to 3dp).</p> <p>Multiply a decimal (up to 3dp) by a decimal (up to 3dp).</p> <p>Divide a decimal (up to 3dp) by an integer.</p> <p>Divide a positive integer by a decimal (up to 3dp).</p> <p>Divide a decimal (up to 3dp) by a decimal (up to 3dp).</p> <p>Place directed numbers on a number line.</p> <p>Compare and order directed integers.</p> <p>Add and subtract directed integers.</p> <p>Multiply and divide directed integers.</p> <p>Use a calculator to evaluate calculations involving directed numbers.</p> <p>Use knowledge of the order of operations to carry out calculations (BIDMAS).</p>	<p>Unit 5</p> <p>Simplify an expression, where combinations of coefficients and variables are multiplied.</p> <p>Simplify an expression, where combinations of coefficients and variables are divided.</p> <p>Simplify expressions by collecting like terms.</p> <p>Expand an expression by multiplying out a single bracket.</p> <p>Factorise an expression into a single bracket.</p> <p>Write an expression to represent a statement.</p> <p>Substitute into a simple expression.</p> <p>Substitute into simple formulae.</p>	<p>Unit 6</p> <p>Identify the mode(s) from a list.</p> <p>Find the median of a list of numbers.</p> <p>Calculate the range for a list of numbers.</p> <p>Identify a missing value from a list where the mean is known.</p> <p>Unit 7</p> <p>Convert a fraction into a decimal, including recurring decimals, using written division methods.</p> <p>Convert terminating decimals into fractions.</p> <p>Position a fraction on a number line.</p> <p>Express a fraction in its lowest terms (simplest form).</p> <p>Compare and order fractions using equivalent fractions.</p> <p>Compare and order fractions by converting to decimals.</p> <p>Add and subtract fractions with the same denominator.</p> <p>Add and subtract fractions with different denominators.</p> <p>Add and subtract mixed numbers.</p> <p>Multiply an integer by a fraction.</p> <p>Multiply a fraction by a fraction.</p> <p>Multiply mixed numbers.</p> <p>Divide a fraction by an integer.</p> <p>Divide an integer by a fraction.</p>	<p>Unit 8</p> <p>Calculate the multiplier for any two given numbers.</p> <p>Use ratio notation to represent the relationship between quantities (up to three parts).</p> <p>Find equivalent ratios using the scalar or functional multipliers.</p> <p>Express a ratio in its simplest integer form.</p> <p>Express a ratio in the form $n:1$ or $1:n$.</p> <p>Express a ratio as a fraction.</p> <p>Calculate a missing part, given one part and the ratio.</p> <p>Determine the whole amount given one part and the ratio.</p> <p>Divide a quantity into a given ratio.</p> <p>Convert between currencies.</p> <p>Calculate a fraction of an amount.</p> <p>Calculate the original amount, given a fraction of that amount.</p> <p>Express one number as a fraction of another.</p>	<p>Unit 9</p> <p>Calculate a missing side in a rectangle, given the area.</p> <p>Calculate a missing side in a triangle, given the area.</p> <p>Calculate a missing side in a parallelogram, given the area.</p> <p>Calculate the perimeter of composite shapes, made from rectangles, triangles and parallelograms.</p> <p>Calculate the area of composite shapes, made of rectangles, triangles and parallelograms.</p> <p>Calculate the area of a trapezium using the formula $\frac{1}{2}(a+b)h$.</p> <p>Unit 10</p> <p>Identify coordinates, including non-integer values, in all four quadrants.</p> <p>Plot coordinates, including non-integer values, in all four quadrants.</p> <p>Identify and plot the line of $y = a$, where a is a number.</p> <p>Identify and plot the line of $x = b$, where b is a number.</p> <p>Identify and plot the line of $y = x$.</p> <p>Identify and plot the line of $y = -x$.</p>
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	<p>Express an integer as a product of primes (prime factor decomposition), including in index form.</p> <p>Find common factors of two, or more, integers by listing.</p> <p>Find the Highest Common Factor (HCF) of two, or more, integers by listing.</p> <p>Find common multiples of two, or more, integers by listing.</p> <p>Find the Lowest Common Multiple (LCM) of two, or more, integers by listing.</p>	<p>Unit 4</p> <p>Round a decimal number to the nearest integer.</p> <p>Round a decimal number to a given number of decimal places (up to 3dp).</p> <p>Round any integer to a given number of significant figures (up to 3sf).</p> <p>Round any decimal number to a given number of significant figures (up to 3sf).</p> <p>Estimate the answer to simple calculations by rounding numbers to 1sf.</p> <p>Determine whether estimated calculations will give an underestimate or an overestimate.</p>		<p>Divide a fraction by a fraction.</p> <p>Divide mixed numbers.</p>		
<p>Beyond the classroom (Wider reading / Trips)</p>	<p>Sparx Compulsory Homework Task.</p> <p>Sparx XP Boost Task.</p> <p>Sparx Target Task.</p> <p>Sparx Independent Learning Tasks.</p> <p>Y7 Baseline Assessment Intervention.</p> <p>Recommended read: Maths Quest: The Cavern of Clues by David Glover.</p>	<p>Sparx Compulsory Homework Task.</p> <p>Sparx XP Boost Task.</p> <p>Sparx Target Task.</p> <p>Sparx Independent Learning Tasks.</p> <p>Y7 Baseline Assessment Intervention.</p> <p>Recommended read: Maths Quest: The Museum of Mysteries by David Glover.</p>	<p>Sparx Compulsory Homework Task.</p> <p>Sparx XP Boost Task.</p> <p>Sparx Target Task.</p> <p>Sparx Independent Learning Tasks.</p> <p>Y7 Autumn Term Assessment Intervention.</p> <p>Recommended read: Maths Quest: The Mansion of Mazes by David Glover.</p> <p>MEM Challenge (completed over February half-term)</p>	<p>Sparx Compulsory Homework Task.</p> <p>Sparx XP Boost Task.</p> <p>Sparx Target Task.</p> <p>Sparx Independent Learning Tasks.</p> <p>Y7 Autumn Term Assessment Intervention.</p> <p>Recommended read: Maths Quest: The Planet of Puzzles by David Glover.</p>	<p>Sparx Compulsory Homework Task.</p> <p>Sparx XP Boost Task.</p> <p>Sparx Target Task.</p> <p>Sparx Independent Learning Tasks.</p> <p>Y7 Spring Term Assessment Intervention.</p> <p>Recommended read: Maths Quest: Escape from Hotel Infinity by Kjartan Poskitt.</p>	<p>Sparx Compulsory Homework Task.</p> <p>Sparx XP Boost Task.</p> <p>Sparx Target Task.</p> <p>Sparx Independent Learning Tasks.</p> <p>Y7 Spring Term Assessment Intervention.</p> <p>Recommended read: Maths Quest: The Island of Tomorrow by Jonathan Litton.</p>