

KS3 Curriculum Plan Maths - Core

Year 7		
Autumn Term 1	Topic	Brief description
	Unit 1 - Number skills	<p>Know and use the priority of operations and laws of arithmetic, Recall multiplication facts up to 10×10, Multiply and divide by 10, 100, 1000, Round whole numbers to the nearest 10, 100, 1000, Check answers using estimation, Add and subtract, multiply and divide whole numbers using written methods, Check answers using inverse operations, Round decimals to the nearest whole number, Interpret a calculator display, Solve problems involving time and money using a calculator, Add and subtract and order positive and negative numbers, Begin to multiply with negative numbers, Identifying and understanding factors, multiples and prime numbers, Recognise and use square numbers, square roots and triangle numbers.</p>
	Unit 2 - Fractions	<p>Use fraction notation to describe parts of a shape, Compare simple fractions, Use a diagram to compare two or more simple fractions, Change an improper fraction to a mixed number, Identify equivalent fractions, Simplify fractions by cancelling common factors, Add and subtract simple fractions, Calculate simple fractions of quantities, Work with equivalent fractions and decimals, Write one number as a fraction of another, Understand percentage as 'the number of parts per 100', Convert a percentage to a number of hundredths or tenths, Work with equivalent percentages, fractions and decimals, Use different strategies to calculate with percentages, Express one number as a percentage of another.</p>
Autumn Term 2	Topic	Brief description
	Unit 3 - Decimals and measures	<p>Measure and draw lines to the nearest millimetre, Write decimals in order of size, Round decimals to the nearest whole number and to one decimal place, Round decimals to make estimates and approximations of calculations, Compare measurements by converting them into the same units, Solve simple problems involving units of measurement in the context of length, Convert between metric units of length, mass and capacity, Read scales on a range of measuring equipment, Interpret the display of a calculator in different contexts, Interpret</p>

	<p>Unit 4 - Expressions, functions and formulae</p>	<p>metric measures displayed on a calculator, Plot and read coordinates in all four quadrants, Multiply decimals mentally, Check a result by considering whether it is of the right order of magnitude, Understand where to position the decimal point by considering equivalent calculations, Add and subtract decimals, Multiply and divide decimals by single-digit whole numbers, Work out the perimeters of shapes, Solve perimeter problems, Find areas by counting squares, Calculate the areas of squares and rectangles, Calculate the areas of shapes made from rectangles, Solve problems involving area, Choose suitable units to estimate length and area, Use units of measurement to solve problems, Use metric and imperial units.</p> <p>Find outputs of simple functions written in words and using symbols, Describe simple functions in words, Simplify simple algebraic expressions by collecting like terms, Use arithmetic operations with algebra, Use brackets with numbers and letters, Simplify more complicated expressions by collecting like terms, Write expressions from word descriptions using addition, subtraction and multiplication, Substitute positive integers into simple formulae written in words, Substitute integers into formulae written in letter symbols, Identify variables and write simple formulae using letter symbols, Identify formulae and functions, Identify the unknowns in a formula and a function.</p>
<p>Spring Term I</p>	<p>Topic</p> <p>Unit 5 - Sequences and graphs</p>	<p>Brief description</p> <p>Revisit sequences including term-to-term rules, Develop the use of mathematical language to describe sequences, Demonstrate how sequences can be used as a mathematical model to describe patterns, Generate sequences from practical sequences, describing how patterns grow, Continue sequences arising from practical contexts and use them to answer questions, Read, generate and plot coordinates, Recognise geometric shapes drawn on coordinate grids and find coordinates of points using geometric information, Find and calculate the midpoints of a line segment, Continue and describe special sequences, Generate sequences using more complex (two-step) term-to-term rules, Continue sequences arising from practical contexts, Begin to identify and use</p>

	<p>Unit 6 - Lines and angles</p>	<p>position-to-term rules, Recognise an arithmetic sequence and find the starting number and common difference, Recognise, name and plot straight line graphs parallel to the x- or y-axis, Generate coordinates that satisfy a simple linear rule and plot the graph in the first quadrant, Read values from a graph, Recognise, name and plot the graphs of $y = x$ and $y = -x$, Identify and use position-to-term rules, Write the nth term of a sequence using algebra, Recognise the relationships between term-to-term rules, position-to-term rules and nth terms.</p> <p>Describe and label lines, angles and triangles, Identify angle, side and symmetry properties of triangles, Use a protractor to measure and draw angles, Estimate the size of angles, Solve problems involving angles, Use a ruler and protractor to draw triangles accurately, Solve problems involving angles and triangles, Use the rule for angles on a straight line, angles around a point and vertically opposite angles, Solve problems involving angles, Use the rule for the sum of angles in a triangle, Calculate interior and exterior angles, Solve angle problems involving triangles, Identify and name types of quadrilaterals, Use the rule for the sum of angles in a quadrilateral, Solve angle problems involving quadrilaterals.</p>
<p>Spring Term 2</p>	<p>Topic</p> <p>Unit 7 - Transformations</p> <p>Unit 8 - Ratio and proportion</p>	<p>Brief description</p> <p>Identify congruent shapes, Use the language of enlargement, Enlarge shapes using given scale factors, Work out the scale factor given an object and its image, Recognise line and rotational symmetry in 2D shapes, Identify all the symmetries of 2D shapes, Identify reflection symmetry in 3D shapes, Recognise and carry out reflections in a mirror line, Reflect a shape on a coordinate grid, Describe a reflection on a coordinate grid, Describe and carry out rotations on a coordinate grid, Translate 2D shapes, Combine transformations.</p> <p>Use direct proportion in simple contexts, Solve simple problems involving direct proportion, Use the unitary method to solve simple word problems involving direct proportion, Use ratio notation, Reduce a ratio to its</p>

		<p>simplest form, Reduce a three-part ratio to its simplest form by cancelling, Divide a quantity into two parts in a ratio given in words, Divide a quantity into two parts in a given ratio, Understand and use the relationship between ratio and proportion, Use ratios and measures, Use fractions to describe and compare proportions, Understand and use the relationship between ratio and proportion, Use percentages to describe proportions, Use percentages to compare simple proportions.</p>
<p>Summer Term 1</p>	<p>Topic</p> <p>Unit 9 - Probability</p>	<p>Brief description</p> <p>Use the language of probability, Use a probability scale with words, Understand the probability scale from 0 to 1, List and count outcomes, Calculate probability based on equally likely outcomes, Compare probabilities, Calculate probability of A or B happening by counting outcomes, Calculate the probability of an event not happening, Record data from a simple experiment, Estimate probability based on experimental data, Make conclusions based on the results of an experiment, Use probability to estimate the number of expected wins in a game, Apply probabilities from experimental data in simple situations.</p>
<p>Summer Term 2</p>	<p>Topic</p> <p>Unit 10 - Analysing and displaying data</p>	<p>Brief description</p> <p>Find the mode of a set of data, numerical and non-numerical, Find the median of a set of data (odd and even number of values), Find the range of a set of data, Read and draw pictograms, bar charts and bar-line charts, Read and construct tally charts and frequency tables, Find the mode and range from a chart or table Read and construct grouped tally charts and frequency tables and construct grouped bar charts for discrete and continuous data, Find the modal class from a bar chart or frequency table, Calculate the mode, median, mean and range of a set of values, Compare two sets of data using an average and the range, Read and draw a line graph and a dual bar chart, Read and draw a compound bar chart, Enter data into a spreadsheet program, Use a spreadsheet to calculate the mode, median, mean and range, and to draw bar charts, dual bar charts, compound bar charts, grouped bar charts and line graphs.</p>

Year 8		
Autumn Term 1	<p>Topic</p> <p>Unit 1 - Number</p> <p>Unit 2 - Percentages, decimals and fractions</p>	<p>Brief description</p> <p>Use written methods to add and subtract with decimals, Calculate mentally, Calculate with money, Estimate answers to calculations, Add, subtract, multiply and divide positive and negative numbers, Calculate using squares, square roots, cubes and cube roots, Use index notation for powers of numbers, Estimate the square root of a number, Use mental methods to calculate combinations of powers roots and brackets, Use a calculator to check answers, Substitute numbers into formulas involving power, roots and brackets, Substitute into algebraic expressions involving powers, Write expressions and formulae, Change the subject of a formula, Simplify expressions involving brackets, use rules for indices and factorise expressions, Multiply out double brackets and collect like terms, Use index notation, Write a number as a product of its prime factors, Use prime factor decomposition to find the HCF and LCM.</p> <p>Recall equivalent fractions and decimals, Recognise recurring and terminating decimals, Order fractions by converting them to decimals or equivalent fractions, Recall equivalent fractions, decimals and percentages, Use different methods to find equivalent fractions, decimals and percentages, Use the equivalence of fractions, decimals and percentages to compare proportions, Working out one number as a percentage of another, Working out percentage increase and decrease, Use a multiplier to calculate percentage increase and decrease, Use the unitary method to solve percentage problems, Use strategies for calculating fractions and decimals of a given number, Use mental strategies of conversion and equivalence of fractions, decimals and percentages to solve word problems mentally.</p>
Autumn Term 2	<p>Topic</p> <p>Unit 3 - Calculating with fractions</p>	<p>Brief description</p> <p>Adding and subtracting fractions with any size denominator, Multiply integers and fractions by a fraction, Use appropriate methods for multiplying fractions, Convert fractions to decimals, Write one amount as a fraction of another,</p>

	<p>Unit 4 - Decimals and ratio</p>	<p>Find the reciprocal of a number, Divide integers and fractions by a fraction, Use strategies for dividing fractions, Use the four operations with mixed numbers.</p> <p>Rounding whole numbers and decimals, Writing large numbers as a decimal number of millions, Ordering positive and negative decimals, Using the symbols $>$ and $<$ between two negative decimals, Multiplying larger numbers, Multiplying decimals with up to two decimal places, Multiplying any number by 0.1 and 0.01, Adding and subtracting decimals of any size, Multiplying and dividing by decimals, Dividing by 0.1 and 0.01, Using ratios involving decimals, Solving proportion problems involving decimals, Solving engineering problems using ratio and proportion, Using unit ratios.</p>
<p>Spring Term I</p>	<p>Topic</p> <p>Unit 5 - Expressions and equations</p> <p>Unit 6 - Real-life graphs</p>	<p>Brief description</p> <p>Understand and simplify algebraic powers, Substitute values into formulas involving powers, Expand brackets, Make and simplify algebraic expressions, Substitute into algebraic expressions involving powers, Write expressions and formulae, Change the subject of a formula, Simplify expressions involving brackets, use rules for indices and factorise expressions, Multiply out double brackets and collect like terms, Factorise expressions, Find the inverse of a function, Solve simple equations using function machines, Solve real life problems using equations, Solve two-step equations using function machines, Solve equations using the balancing method, Solve equations with the unknown number on both sides.</p> <p>Reading values from conversion graphs, Plotting conversion graphs from a table of data, Interpreting distance-time graphs, Plotting distance-time graphs from descriptive text, Using distance-time graphs to solve problems, Plotting line graphs from tables of data. Interpreting line graphs, Reading values from real-life graphs, Describing trends and making predictions based on information presented graphically, Working out percentages, Draw, use and interpret conversion graphs, Draw, use and interpret distance-time graphs, Draw and interpret line graphs, Draw, use and interpret real-life graphs, Discuss and</p>

		interpret linear and non-linear graphs, Drawing and using real-life graphs, Using graphs to solve problems and make predictions.
Spring Term 2	<p>Topic</p> <p>Unit 7 - Straight-line graphs</p> <p>Unit 8 - Lines and angles</p>	<p>Brief description</p> <p>Recognising when values are in direct proportion, Plotting graphs and reading values to solve problems, Plot a straight-line graph and work out its gradient, Plot the graphs of linear functions, Find midpoints of line segments, Write the equations of straight line graphs in the form $y = mx + c$, Identify and describe practical examples of direct proportion, Solve problems involving direct proportion with or without a graph.</p> <p>Matching quadrilaterals to their descriptions, Using known facts about quadrilaterals to solve problems, Using alternate angles to find unknown angles, Using reasoning to complete mathematical proofs, Solving geometrical problems using side and angle properties of triangles and quadrilaterals, Identifying corresponding angles, Solving problems using properties of angles in parallel and intersecting lines, Calculating the sum of the interior and exterior angles of a polygon, Calculating the interior and exterior angles of a polygon, Finding unknown angles by forming and solving equations, Solving geometrical problems showing reasoning.</p>
Summer Term 1	<p>Topic</p> <p>Unit 9 - Area and volume</p>	<p>Brief description</p> <p>Derive and use the formula for the area of a triangle, Find areas of compound shapes, Calculate areas of parallelograms and trapezia, Calculate the volume of cubes and cuboids, Sketch nets of 3D solids, Calculate the surface area of cubes and cuboids, Calculate the volume of cubes and cuboids, Calculate the surface area of cubes and cuboids.</p>
Summer Term 2	<p>Topic</p>	<p>Brief description</p> <p>Identify sources of primary and secondary data, Choose a suitable</p>

	<p>Unit 10 Chapter 3 Statistics, graphs and charts</p>	<p>sample size and what data to collect, Identify factors that may affect data collection and plan to reduce bias, Design a good questionnaire, Design and use data collection sheets and tables, Interpret simple pie charts, Calculate angles and draw pie charts, Drawing and interpreting two-way tables, Calculating the mean from a simple frequency table, Tallying data into a grouped frequency table, designing a grouped frequency table, using $a \leq x < b$ notation, finding modal class and estimating range, Drawing and interpreting stem and leaf diagrams with different stem values, Finding mode, median and range from stem and leaf diagrams, and comparing them for different data sets, Compare data using averages and range, including mean calculated from frequency table, Compare data using the shape of a line graph or pie chart, Draw line graphs to compare sets of data, Decide on the most appropriate average to use, Draw scatter graphs, Describe types of correlation, Draw a line of best fit by eye on a scatter graph, Identify graphs and charts that are misleading because of the scales used and missing axis labels, mainly in financial contexts.</p>
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KS3 Curriculum Plan Maths - Extension

Year 7		
<p>Autumn Term 1</p>	<p>Topic</p> <p>Unit 1 - Number skills</p> <p>Unit 2 - Fractions</p>	<p>Brief description</p> <p>Understand the difference between multiples, factors and primes, Find all the factor pairs of any whole number, Find the HCF and LCM of two numbers, Add, subtract, multiply and divide positive and negative, Use mental and written strategies for multiplication, Divide a 3-digit integer by a single or 2-digit integer, Use index notation for squares and square roots, Calculate with squares and square roots, Carry out calculations and solve word problems involving squares, cubes, square roots and cube roots, Use factorising to work out square roots and cube roots, Estimate answers to complex calculations, Carry out calculations involving brackets.</p> <p>Compare and simplify fractions, Write one number as a fraction of another, Work out simple fractions of amounts, Write an improper fraction as a mixed number, Add and subtract fractions, Work with equivalent fractions, decimals and percentages, Use division to write a fraction as a decimal, Work out fractions of amounts, Divide an integer and a fraction by a fraction, Multiply a fraction by a fraction, Add and subtract mixed numbers, Enter time as a mixed number into a calculator, Multiply and divide a mixed number.</p>
<p>Autumn Term 2</p>	<p>Topic</p> <p>Unit 3 – Decimals</p> <p>Unit 4 - Equations, functions and formulae</p>	<p>Brief description</p> <p>Write decimals in ascending and descending order, Round to decimal places, Add and subtract decimals, Multiply a decimal by an integer, Use place value to multiply decimals, Divide a decimal by a whole number, Divide a number by a decimal., Convert between fractions decimals and percentages, Compare different proportions using percentages, Calculate percentages with and without a calculator, Calculate percentage, increases and decreases, Work backwards to solve a percentage problem.</p> <p>Simplify expressions by collecting like terms, Construct expressions using four operations, Substitute into formulae, Derive formulae from a description, Expand expressions involving brackets,</p>

		Substitute into expressions involving powers, Factorise an algebraic expression.
Spring Term 1	<p>Topic</p> <p>Unit 5 - Sequences and graphs</p> <p>Unit 6 Chapter 7 Equations</p>	<p>Brief description</p> <p>Work out the terms of an arithmetic sequence using the term-to-term rule, Work out a given term in a simple arithmetic sequence, Work out and use expressions for the nth term in an arithmetic sequence, Generate sequences and predict how they will continue, Recognise geometric sequences and work out the term-to-term rule, Use positive and negative coordinates, Work out the midpoint of a line segment, Draw straight-line graphs, Recognise straight-line graphs parallel to the axes, Recognise graphs of $y = x$ and $y = -x$</p> <p>Write and solve simple equations, Solve problems using equations, Write and solve two-step equations, Write and solve equations that have brackets, Write and solve equations with letters on both sides, Solve equations that include x^2 and x, Use trial and improvement to find solutions to 1 decimal place.</p>
Spring Term 2	<p>Topic</p> <p>Unit 7 - Angles and shapes</p> <p>Unit 8 - Perimeter, area and volume</p>	<p>Brief description</p> <p>Work out unknown angles when two or more lines meet or cross at a point, Work out unknown angles involving parallel lines, Describe the line and rotational symmetry of triangles, Understand how to prove that a result is true, Use properties of a triangle to work out unknown angles, Use the properties of isosceles and equilateral triangles to solve problems, Describe the line and rotational symmetry of quadrilaterals, Describe the properties of quadrilaterals, Solve problems involving quadrilaterals, Work out the interior and exterior angles of a polygon.</p> <p>Calculate the area of triangles, parallelograms and trapeziums, Calculate the perimeter of shapes made from rectangles and triangles, Calculate the area of shapes made from rectangles and triangles, Identify nets of different 3D shapes, Know the properties of 3D shapes, Calculate the surface area and volume of a cube and a cuboid, Convert between different units of volume: cm^3, ml and litres, Convert between metric measures for area and volume.</p>

<p>Summer Term 1</p>	<p>Topic</p> <p>Unit 9 - Multiplicative reasoning</p>	<p>Brief description</p> <p>Convert between metric and imperial units, Use metric units, Write a ratio in its simplest form, Simplify a ratio expressed in fractions or decimals, Share a quantity in 2 or more parts in a given ratio, Understand the relationship between ratio and proportion, Solve simple word problems involving ratio and direct proportion, Solve simple word problems involving ratio and inverse proportion, Solve problems involving ratio and proportion using the unitary method, Write ratios in the form $1 : n$, Solve best buy problems.</p>
<p>Summer Term 2</p>	<p>Topic</p> <p>Unit 10 - Analysing and displaying data</p>	<p>Brief description</p> <p>Identify sources of primary and secondary data, Choose a suitable sample size, Understand how to reduce bias in sampling and questionnaires, Identify a random sample, Use two-way tables, Interpret and draw dual bar charts and compound bar charts, Choose the most appropriate average for a set of data, Find the mode, median, mean and range for a set of data, Compare sets of data using averages and the range, Group discrete and continuous data, Draw and interpret grouped frequency diagrams, Interpret and draw line graphs, Recognise when a graph is misleading, Draw and interpret pie charts, and draw scatter graphs, Describe the correlation between two sets of data, Draw a line of best fit and use it to estimate values.</p>
<p>Year 8</p>		
<p>Autumn Term 1</p>	<p>Topic</p> <p>Unit 1 Chapter 1 Factors and powers</p> <p>Unit 2 - Working with powers</p>	<p>Brief description</p> <p>Write the prime factor decomposition of a number, Use prime factor decomposition to find the HCF or LCM or two numbers, Work out the laws of indices for positive powers, Show that any number to the power of zero is 1, Use the laws of indices for multiplying and dividing, Use and understand powers of 10, Use the prefixes associated with powers of 10, Understand the effect of multiplying and dividing by any integer power of 10, Calculate with powers, Round to a number of significant figures.</p> <p>Simplify expressions involving powers and brackets, Understand the meaning of an identity, Use the index laws in algebraic calculations and expressions,</p>

		<p>Simplify expressions with powers, Write and simplify expressions involving brackets and powers, Factorise an algebraic expression, Substitute integers into expressions.</p> <p>Construct and solve equations.</p>
Autumn Term 2	<p>Topic</p> <p>Unit 3 - Real life graphs</p> <p>Unit 4 - Graphs</p>	<p>Brief description</p> <p>Recognise when values are in direct proportion, Plot graphs and read values to solve problems, Interpret graphs from different sources, Understand financial graphs, Draw and interpret distance–time graphs, Use distance–time graphs to solve problems, Interpret graphs that are curved, Interpret real-life graphs, Understand when graphs are misleading.</p> <p>Plot straight-line graphs, Find the y-intercept of a straight-line graph, Find the gradient of a straight-line graph, Plot graphs using the gradient and y-intercept, Use $y = mx + c$, Find the equation of a straight-line graph, Identify parallel and perpendicular lines, Find the inverse of a linear function, Plot and use non-linear graphs.</p>
Spring Term 1	<p>Topic</p> <p>Unit 5 - Fractions, decimals and percentages</p> <p>Unit 6 - Transformations</p>	<p>Brief description</p> <p>Recognise fractional equivalents to important recurring decimals, Recognise which denominators of simple fractions produce recurring decimals, Change a recurring decimal into a fraction, Calculate percentage, Work out an original quantity before a percentage increase or decrease, Calculate percentage change, Calculate the effect of repeated percentage changes.</p> <p>Describe and carry out translations, reflections, and rotations, Enlarge a shape, Describe an enlargement, Enlarge a shape using negative scale factors, Enlarge a shape using fractional scale factors, Transform 2D shapes using a combination of reflection, rotation, enlargement and translation, Identify planes of reflection symmetry in 3D solids, Find the perimeter and area of 2D shapes after enlargement, Find the volume of 3D solids after enlargements.</p>
Spring Term 2	Topic	<p>Brief description</p> <p>Use scales in maps and plans, Use and interpret maps, Measure and use bearings, Draw diagrams to scale using</p>

	<p>Unit 7 - Scale drawings and measures</p> <p>Unit 8 - Constructions and loci</p>	<p>bearings, Draw diagrams to scale, Use and interpret scale drawings, Identify congruent and similar shapes, Use congruence to solve problems in triangles and quadrilaterals, Use similarity to solve problems in 2D shapes.</p> <p>Draw triangles accurately using a ruler and protractor, Draw diagrams to scale, Draw accurate nets of 3D solids, Construct triangles using a ruler and compasses, Construct nets of 3D solids using a ruler and compasses, Bisect a line using a ruler and compasses, Construct perpendicular lines using a ruler and compasses, Bisect angles using a ruler and compasses, Draw accurate diagrams to solve problems, Draw a locus, Use loci to solve problems.</p>
<p>Summer Term 1</p>	<p>Topic</p> <p>Unit 9 - 2D shapes and 3D solids</p>	<p>Brief description</p> <p>Use 2D representations of 3D solids, Sketch nets of 3D solids, Calculate the surface area of prisms, Calculate the volume of right prisms, Name the different parts of a circle, Calculate the circumference, Calculate the radius or diameter when you know the circumference, Calculate the area of a circle, Calculate the radius or diameter when you know the area, Calculate the volume and surface area of a cylinder, Use Pythagoras' theorem in right-angled triangles.</p>
<p>Summer Term 2</p>	<p>Topic</p> <p>Unit 10 - Probability</p>	<p>Brief description</p> <p>Calculate and compare probabilities, Decide if a game is fair, Identify mutually exclusive outcomes and events, Find the probabilities of mutually exclusive outcomes and events, Find the probability of an event not happening, Calculate the relative frequency of a value, Use relative frequency to make estimates, Use relative frequency to estimate the probability of an event, Use estimated probability to calculate expected frequencies, Carry out a probability experiment, Estimate probability using data from an experiment, Work out the expected results when an experiment is repeated, List all the possible outcomes of one or</p>

		two events in sample space diagrams, Venn diagrams, Calculate probabilities of repeated events, Use tree diagrams to find the probabilities of two or more events.
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KS3 Curriculum Plan Maths - Support

Year 7		
<p>Autumn Term 1</p>	<p>Topic</p> <p>Unit 1 - Calculating</p> <p>Unit 2 - Fractions, decimals and percentages</p>	<p>Brief description</p> <p>Add numbers together in different ways, Round to the nearest 10, Approximate before adding and subtracting, Subtract numbers in different ways, Multiply numbers, Recognise multiples and square numbers, Find roots of square numbers on a calculator, Divide one number by another, Use times tables to help you divide, Use approximation to estimate division calculations, Multiply and divide by 10, 100 and 1000, Use addition, subtraction, multiplication and division, Solve simple ratio and proportion problems, Use simple negative numbers, Continue a sequence.</p> <p>Order fractions, Use fractions to describe parts of shapes, Identify equivalent fractions, Simplify fractions by cancelling, Change an improper fraction to a mixed number, Calculate simple fractions of quantities, Add and subtract simple fractions, Understand percentage as 'the number of parts per 100', Write a percentage as a fraction or decimal, Calculate percentages.</p>
<p>Autumn Term 2</p>	<p>Topic</p> <p>Unit 3 - Decimals and measures</p> <p>Unit 4 - Factors and Multiples</p>	<p>Brief description</p> <p>Estimate, and choose suitable units, to measure length, mass and capacity, Draw lines to the nearest mm and measure lines to the nearest cm, Read and interpret variety of scales, Record estimates to a suitable degree of accuracy, Read and write numbers in figures and words, Understand, compare, order and use decimals for tenths and hundredths, including in measures, Read and interpret scales using decimals, Order metric measurements, Convert between different units of measure, Record measurements, Recognise and extend number sequences by counting in decimals, Add and subtract decimal numbers, Extend mental methods of calculation to include decimals, Round decimals to nearest whole number and nearest tenth, Use a calculator and interpret the display in different contexts (decimals), Consolidate and extend mental calculation methods including decimals, Use a calculator to solve word problems involving money, Round amounts on a calculator to 2 decimal places.</p>

		<p>Understand the priority of operations and the rules of multiplication, Use the operation keys on a calculator, Recognise multiples of 2, 5, 10 and 25, Work out multiples and factors, Multiply 3-digit numbers by a single digit, Round numbers to the nearest 100 and 1000, Divide 3-digit numbers by a single digit, Decide whether you can divide a number by 2, 5, 9 or 10, Begin to identify factors of numbers, Solve problems involving multiplication and division, Use a calculator to solve multiplication and division problems, Identify prime numbers, Find common factors and common multiples, Work out the HCF and LCM of two numbers, Work out if a number is divisible by 3, 4 or 6.</p>
Spring Term 1	<p>Topic</p> <p>Unit 5 - Expressions, Functions and Formulae</p> <p>Unit 6 - Graphs</p>	<p>Brief description</p> <p>Find outputs of simple functions, Describe simple functions using words or symbols, Simplify expressions. (+ and -), (x), (\div), Write expressions given a description in words, Substitute positive integers into simple formulae written in words, Substitute integers into simple formulae written in letter symbols, Write simple formulae using words and letter symbols.</p> <p>Read information from real-life graphs, Draw graphs to show change over time, Write the coordinates of points on a grid, Plot points from their coordinates, Plot graphs of simple functions, Read values from graphs, Draw line graphs to show relationships between quantities, Read values from science graphs.</p>
Spring Term 2	<p>Topic</p> <p>Unit 7 - Angles and Lines</p> <p>Unit 8 - Measuring and Shapes</p>	<p>Brief description</p> <p>Know a right angle is 90 degrees, Recognise quarter, half and three-quarter turns, and parallel and perpendicular lines, Use compass points, Recognise acute and obtuse and reflex angles, Find missing angles round a point, Measure acute and obtuse angles, Label lines and angles, Estimate the size of angles, Draw acute angles, Find missing angles on a straight line and round a point.</p>

		Identify and recognise the properties of triangles, squares and rectangles, Describe the line symmetry of triangles, quadrilaterals and other shapes, Solve problems using line symmetry, Describe rotational symmetry, Identify polygons, Understand the line and rotational symmetry of rotational polygons, Find the perimeter of squares, rectangles and regular polygons, Calculate the perimeter of shapes made from rectangles, Solve problems involving the perimeter of squares and rectangles, Use metric units to measure area, Calculate the area of squares and rectangles.
Summer Term 1	Topic Unit 9 - Transformations	Brief description Reflect a shape in a mirror line, Translate a shape, Draw and describe rotations, Identify congruent shapes, Identify the properties of quadrilaterals.
Summer Term 2	Topic Unit 10 - Analysing and Displaying Data	Brief description Find information from tables, pictograms, bar and bar-line charts, Display data using bar and bar-line charts, Organise data using a tally chart, Understand and use frequency tables, and draw a grouped bar chart, Find the mode and modal class of a set of data, Find the range and median of a set of data, Compare sets of data using their range, mode and median, Calculate the mean of a set of data.
Year 8		
Autumn Term 1	Topic Unit 1 - Number properties and calculations Unit 2 - Number properties	Brief description Add and subtract larger numbers, Multiply larger numbers, Use brackets, Add and subtract with negative numbers, Multiply and divide negative numbers, Work with ratios, Find equivalent ratios, Solve simple word problems involving ratio, Understand the relationship between ratio and proportion, Use proportion to solve simple problems. Calculate squares and square roots, mentally and using a calculator, Calculate cubes and cube roots, mentally and using a calculator, Carry out calculations involving brackets and square numbers, Use the brackets keys on a calculator, Use index notation, Find the factor pairs of any whole number, Use the lowest common multiple (LCM) and highest common factor (HCF) to solve

		problems, Find the prime factor decomposition of a number less than 100, Use the lowest common multiple (LCM) and highest common factor (HCF) to solve problems.
Autumn Term 2	<p>Topic</p> <p>Unit 3 - Decimal calculations</p> <p>Unit 4 - Fractions and percentages</p>	<p>Brief description</p> <p>Add and subtract decimal numbers, Multiply decimals, Round decimals, Order decimals, Solve problems involving decimals.</p> <p>Compare fractions, Simplify fractions, Identify equivalent fractions, Calculate with fractions mentally, Calculate fractions of quantities, Multiply a fraction by a whole number, Add and subtract fractions, Write a number as a fraction of another number, Change between fractions and percentages, Calculate percentages, Compare proportions using percentages, Write one number as a percentage of another number.</p>
Spring Term 1	<p>Topic</p> <p>Unit 5 - Expressions and equations</p> <p>Unit 6 - Sequences</p>	<p>Brief description</p> <p>Simplify expressions by collecting like terms, Find outputs and inputs of function machines, Construct functions, Solve simple equations and check the solution is correct, Understand the difference between an expression and an equation, and identify the unknown in an equation, Use brackets with numbers and letters.</p> <p>Recognise, describe and continue number sequences, Find and use pattern and term-to-term rules, Use the term-to-term rule to work out terms in a sequence, Recognise an arithmetic sequence, Describe sequences arising in real life, Describe and continue special sequences, Recognise a geometric sequence, Generate terms of a sequence using the position-to-term rule, Find the nth term of a simple sequence.</p>
Spring Term 2	<p>Topic</p> <p>Unit 7 - Shapes and measures in 3D</p>	<p>Brief description</p> <p>Recognise and name 3D shapes, Count faces edges and vertices, Deduce properties of 3D shapes from 2D representations, Identify nets of 3D solids including cubes and cuboids, Draw nets of 3D solids using a ruler and protractor, Calculate the surface area of cubes and cuboids, Find the volume of a cube or cuboid by counting cubes, Know</p>

	Unit 8 - Angles	<p>the formula for calculating the volume of a cube or cuboid, Solve problems involving units of length, area and capacity, Convert between cm^3 and litres.</p> <p>Use a protractor to measure and draw obtuse and reflex angles, Estimate the size of reflex angles, Use vertically opposite angles, Work out the size of unknown angles in a triangle, Accurately draw triangles using a ruler and protractor, Accurately draw a net of a 3D shape, Investigate the sides of a right-angled triangle.</p>
Summer Term 1	Topic Unit 9 - Statistics	<p>Brief description Plan and collect data, Design a data collection sheet, Group data into equal class intervals, Interpret complex bar charts, Draw bar charts for more than one set of data, Interpret pie charts.</p>
Summer Term 2	Topic Unit 10 - Probability	<p>Brief description Use the language of probability, Use a probability scale with words and numbers, Write probabilities as fractions, decimals and percentages, Find all the possible outcomes of an event, Use equally likely outcomes to calculate probabilities, Learn and use probability notation, Calculate the probability of an event not happening, Find all the possible outcomes of two simple events, Use data from an experiment to estimate probabilities, Collect data from an experiment, and make calculations based on results, Compare and interpret probabilities.</p>