Maths Curriculum Grid						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
KS3	**Number sense and place value** Identify the place value of a digit in any number through partitioning, estimating, rounding and comparing. Read and write numbers in words and numbers. **Addition and Subtraction** Develop mental arithmetic strategies to complete calculations mentally. Use formal column methods to add and subtract larger numbers. Recognise inverse operations and solve missing number problems. **Multiplication and Division** Multiply and divide by single-digit numbers. Multiply and divide by 10 and 100. **Fractions** Understand what a fraction represents. Count, compare and order fractions. Perform simple calculations with fractions using addition and subtraction. **Decimals**	**Number Patterns** Identify and extend number patterns, counting up and down. Identify the pattern rule. Generate patterns given a starting point and rule using the four operations. **Money** Recognise all British notes and coins and understand that their value is independent of their size and shape. Calculate with money using the four operations. Solve money problems in real-world contexts. **Time** Read and estimate time on analogue and digital clocks. Convert between different units of time. Sequence events in chronological order. **Perimeter and Area** Understand that perimeter is the shortest distance around a shape and area is the size of a surface. Calculate the perimeter and area of squares, rectangles and more complex compound	**Function Machines** Calculate outputs from a given function. Use inverse operations to calculate the input. **Volume** Understand volume as the measure of space inside a 3D shape. Calculate the volume of cubes and cuboids. **Measures - length, mass and capacity** Identify metric measures of length, mass and capacity. Convert between metric measures. Calculate with metric measures in real-world contexts using the four operations. **Position and direction** Identify and plot coordinates on a coordinate grid. Record and describe simple translations across a coordinate grid. Plot and draw 2D shapes. **Statistics** Understand how data is recorded and displayed in different graphical	**Number sense and place value** Reinforce knowledge of place value and expand to include larger numbers and decimal notation. **Addition and Subtraction** Use formal methods to add larger numbers including decimal notation. Solve problems with addition and subtraction in real-world contexts. **Multiplication and Division** Use formal methods to multiply and divide larger numbers. Apply knowledge of multiplication to solve problems in real-world contexts. **Fractions** Find fractions of an amount. Understand and calculate with mixed numbers and improper fractions using the four operations. **Decimals** Calculate with more complex decimal notation using the four operations. Apply knowledge of	**Negative numbers** Count up and down across zero. Calculate with negative numbers using the four operations. Understand negative numbers in context. **Money** Reinforce knowledge of British money. Solve multi-step money problems in real-world contexts using the four operations. **Time** Calculate elapsed time. Problem solve with time in real-world contexts.	**Algebra** Extend knowledge of algebra to use more complex notation. Solve algebraic problems with increasing difficulty. **Perimeter, area and volume** Calculate the perimeter, area and volume of 2D and 3D shapes with more complex measurements and decimal notation. **Measures - length, mass and capacity** Extend knowledge of metric measures of length, mass and capacity. Understand common imperial measurements. Solve multi-step problems with measures. **Probability** Describe the likelihood of an event occurring and understand that the probability of events can be subjective and contextual. Record the probability of an event occurring as a fraction or decimal. Recognise that the sum of probabilities for all outcomes is 1.

	Understand what a decimal represents and identify the value of a decimal in a number. Compare and order decimal numbers and round decimals to a degree of accuracy. Perform simple calculations with decimals using the four operations. **Geometry – properties of shapes** Identify basic 2D and 3D shapes and their associated properties. Understand angles as a degree of turn. Measure and draw shapes with accuracy.	shapes. **Ratio and proportion** Compare values and express them as a ratio of each other. Represent ratios as fractions. Use scale factors to complete scale diagrams. Solve ratio problems in context. **Fractions, decimals and percentages** Understand that percentage is expressed as a quantity out of 100. Convert between fraction, decimal and percentage equivalents. Calculate the percentage of an amount.	representations. Collect data and draw appropriate graphs. **Algebra** Understand and use algebraic notation to represent unknown quantities. Solve algebraic calculations using the four operations.	decimals to solve problems in real-world contexts.		**Position and direction** Extend knowledge of coordinates to include all four quadrants and negative numbers. **Statistics** Record, interpret and represent data in more complex graphical forms.
KS4 Pathway 1 Entry Level	**Component 1 - properties of number** Understand and use numbers. Identify place value within whole numbers. Understand odd and even and round to a degree of accuracy. Component 1 Exam **Component 2 - the four operations** Understand and use the four operations. Perform calculations using addition, subtraction, multiplication and division. Component 2 Exam	**Component 3 - Ratio** Understand equality and basic fractions. Component 3 Exam **Component 4 - Money** Understand and use money. Identify the value of coins in everyday use in the UK. Perform calculations with decimals in the context of money.	**Component 4 - Money** Continue to develop a sense of the value and use of money in everyday use. Component 4 exam **Component 5 - Time** Understand and use 12 and 24-hour time and convert between both representations. Interpret calendars and timetables. Understand the days, weeks and months of the year. Component 5 exam **Maths in the real world**	**Component 7 - Geometry** Understand shape, coordinates and directions. Identify 2D and 3D and their properties. Understand angles and identify angles in shapes. Investigate reflective symmetry, nets of shapes and use of coordinates. Component 7 exam	**Component 6 - Measures** Understand and use measures of length, mass and capacity in standard and non-standard units. Convert between units of length, mass and capacity. Read scales of measurement including temperature with negative values. Component 6 exam	**Component 8 - Statistics** Understand and interpret statistical diagrams. Sort information according to a set criteria. Conduct surveys and analyse and communicate the results using appropriate representation. Component 8 exam

			Opportunity for students to apply their Maths knowledge in everyday life. Students will plan a visit to a local restaurant and order and pay for their meal independently.			
KS4 Pathway 2 **GCSE Maths Foundation** **Year 10**	**Integers and place value** Identify the place value of any integer up to one billion. Compare and order positive and negative numbers. Round any integer to a degree of accuracy. **Decimal place value** Identify the place value of decimals up to three decimal places. Order and compare positive and negative decimals. Round decimals to a degree of accuracy. **Directed Number** Perform calculations that cross zero. Calculate with negative numbers using the four operations. **Indices, roots and powers** Understand and calculate square and square roots, cube and cube roots. Calculate with positive and negative powers of 10. **Order of operations**	**Algebra** Understand and use algebraic notation. Form and simplify expressions. Expand, simplify and factorise into a single bracket. Use substitution to calculate the value of an expression. Construct expressions to solve problems. **Statistics** Understand and interpret different forms of data. Display data in different graphical formats. Interpret and construct pie charts. **Ratio** Compare quantities and express them as a ratio of each other. Simplify ratios. Share a known quantity into a given ratio. **Percentages** Convert between fraction, decimal and percentage equivalents. Calculate a percentage of an amount.				

	Understand the order of operations and use BIDMAS to perform calculations with the four operations, indices and directed number. **Factors, multiples and primes** Identify factors, highest common factor, multiples and lowest common multiple. Understand primer numbers and use prime factorisation to represent a number as the product of two primes. **Fractions, decimals and percentages** Calculate with fractions and decimals using the four operations. Convert between fraction, decimal and percentage equivalents.	Calculate percentage change.				
KS4 Pathway 2 GCSE Maths Foundation Year 11	**Directed Number** Perform calculations that cross zero. Calculate with negative numbers using the four operations. **Indices, roots and powers** Understand and calculate square and square roots, cube and cube roots. Calculate with positive and negative powers of 10.	**Probability and statistics** Record and interpret data in Venn diagrams and time-series graphs. Interpret and construct probability tree and frequency tree diagrams. Create and use sample space diagrams. **Pythagoras Theorem** Understand and use square numbers and square roots.				

	Order of operations Understand the order of operations and use BIDMAS to perform calculations with the four operations, indices and directed number. **Factors, multiples and primes** Identify factors, highest common factor, multiples and lowest common multiple. Understand primer numbers and use prime factorisation to represent a number as the product of two primes. **Fractions, decimals and percentages** Calculate with fractions and decimals using the four operations. Convert between fraction, decimal and percentage equivalents. **Algebra** Record and plot coordinates in all four quadrants. Plot straight line graphs and find the equations of parallel lines. Calculate the gradient of a line.	Apply pythagoras theorem to calculate the sides of right-angled triangles including as points plotted on a coordinate grid. **Ratio and proportion** Understand direct and indirect proportion. Solve ratio problems in real-world contexts. **Geometry and measures** Understand vectors and their properties. Record movement of 2D shapes across a coordinate grid in vector notation. Calculate the area and volume of cylinders, cones, spheres and pyramids. Use trigonometry to identify missing sides and angles.				