

Stretch opportunities are highlighted in Blue.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	 Unit 01 Exploring Sequences Describe and continue a sequence given diagrammatically. Predict and check the next term(s) of a sequence. Recognise the difference between, and continue, linear and non-linear sequences. Unit 02 Understanding and Using Algebraic Notation Function machines. Use and understand algebraic convention. Use function machines with algebra. Substitute into simple expressions with positive numbers only. Simplify expressions by collecting like terms. Expanding single brackets Factorising simple expressions 	 Unit 03 Place Value Round any number to the nearest 10, 100, 1000. Round any number to the nearest integer and a given number of decimal places Multiply and divide integers by powers of 10 and be able to write 10, 100 and 1000 as powers of 10. Interpret and compare numbers in standard form Unit 04 Equality and Equivalence Solve problems using all four operations (BIDMAS). Solve one step equations. Solve two step equations. Solve equations using single brackets. Form and solve one and two step equations. 	 Unit 05 Fractions and Percentages Understand fractions as division. Convert fluently between fractions, decimals and percentages. Place fractions, decimals and percentages on number lines. Explore fractions and decimals above 1, and percentages above 100. Solve worded problems with FDP. Calculate any fraction of an amount. Calculate any percentage of an amount. Use a calculator to find fractions and percentages of amounts. Unit 06 Addition and Subtraction Solve problems involving timetables. Understand and use frequency trees. Calculate the perimeter of any shape. Solve problems with perimeter. 	 Unit 07 Directed Number Understand and use representations of directed number. Order and compare directed numbers. Add and subtract directed numbers. Multiply with directed numbers. Divide with directed numbers. Divide with directed numbers. Use a calculator with directed numbers. Use the order of operations (BIDMAS) with directed number. Collect like terms with directed number. Substitute with directed numbers. Solve equations with directed numbers. Understand that positive numbers have more than one square root. Explore higher powers and roots with directed numbers. Understand and use factors and multiples. Find the area of a rectangle. Find the area of a parallelogram. Solve problems with area. 	 Unit 09 Fractional Thinking Compare and order fractions. Convert between mixed numbers and improper fractions. Add and subtract fractions. Add and subtract mixed numbers. Use equivalence to add and subtract fractions and decimals. Solve one and two step equations involving fractions. Solve one and two step equations involving fractions. Solve problems involving fractions. Unit 10 Constructions and Measures Understand and use letter labelling conventions for geometric figures. Draw and measure angles up to 180° Draw and measure angles over 180° Identify and draw parallel and perpendicular lines. Recognise types of triangles. Recognise types of quadrilaterals. Understand and use vertically opposite angles. Know and apply the sum of angles in a triangle. Know and apply the sum of angles in a quadrilateral. Find and use the angle sum of angles in a quadrilateral. Find and use the angle sum of angles in a quadrilateral. Find and use the angle sum of angles in a duadrilateral. Find and use the angle sum of angles in a duadrilateral. Find and use the angle sum of angles in a duadrilateral. Find and use the angle sum of any polygon. Understand angles in parallel lines. Solve multi-step angle problems, giving detailed reasoning about each step. Form and solve equations with angles.	 Unit 12 Developing Number Sense Use estimation as a method for checking mental calculations. Multiply and divide decimals by integers. Use a calculator to answer a range of questions. Unit 13 Sets and Probability Know and use the vocabulary of probability. Find probabilities of single events and use the probability scale with fractions decimals and percentages. Generate sample spaces for single and combined events. Interpret and create Venn Diagrams Unit 14 Prime Numbers and Proof Recognise prime, square, and triangular numbers. Find the Highest Common Factor (HCF) Find the Lowest Common Multiple (LCM) Write a number as a product of its prime factors. Use a Venn Diagram to find the HCF/LCM of two numbers. Make educated judgements about number and begin to explore conjectures and proof. Solve problems with prime numbers, HCF and LCM.



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8	 Unit 01 Ratio and Scale Use and understand the notation of ratio. Simplify ratios into the form 1:n and n:1. Divide a value into a given ratio. Write ratios as fractions and fractions as ratios. Understand π as the ratio between the diameter and circumference. Solve worded problems with ratio. Understand and use direct proportion. Solve best buy problems. Explore direct proportion graphs. Convert between currencies. Enlarge shapes by a given scale factor. Solve worded problems with proportion. 	 Unit 03 Multiply and Divide Fractions Multiply a fraction by an integer. Multiply any pair of fractions. Understand and use the reciprocal. Divide integers by fractions. Divide fractions by integers. Divide any pair of fractions. Unit 04 Working in the Cartesian Plane Find the midpoint of a line segment. Identify and draw lines that are parallel to the x and the y axis. Recognise and use lines in the form y = mx + c Link linear sequences to graphs. Solve problems with co-ordinates and linear graphs. 	 Unit 05 Representing Data Plot and interpret scatter graphs. Recognise correlation. Make predictions using scatter graphs. Describe non-linear relationships. Read and interpret ungrouped and grouped frequency tables. Recognise key words surrounding data. Represent data in two-way tables. Unit 06 Sequences Generate a sequence from a simple algebraic rule. Generate a sequence from a more complex algebraic rule. Decide whether a term is in a sequence from the nth term. 	 Unit 07 Number Sense Solve problems with money. Solve problems with time and calendars. Read and interpret distance tables. Unit 08 Percentages Increase and decrease a number by a percentage. Increase and decrease a number by a percentage by using a multiplier. Solve problems with percentage change. Find the original amount when given percentages more and less than 100 (simple reverse percentages) Choose appropriate methods to solve percentage problems. Solve worded problems with percentages. 	 Unit 09 Angles Calculate the sum of interior angles of any polygon. Solve problems with angles in parallel lines. Derive and use the properties of special quadrilaterals. Construct special quadrilaterals. Construct special quadrilaterals. Find one interior angle of a regular polygon. Determine the size of one exterior angle of a regular polygon. Unit 10 Area and Volume Find the area of a triangle. Find the area of a circle. Calculate the area of composite shapes. Calculate the volume of cubes and cuboids. Calculate the volume of prisms. Calculate the volume of a cylinder. Solve problems in 2D and 3D Unit 11 Transformations Enlarge a shape. Reflect a shape. Mixed transformations. Recognise congruence and similarity. 	 Unit 12 Constructions and Loci Draw diagrams to scale. Construct 3D solids using a ruler and compasses. Draw an accurate circle. Construct a perpendicular bisector. Construct an angle bisector. Construct loci from a point and a line. Unit 13 Data Handling Cycle. Set up and design a statistical enquiry including questionnaires. Construct and interpret bar charts. Construct and interpret vertical line charts and line graphs. Construct and interpret pie charts. Construct and interpret pie charts. Construct and interpret pie charts. Construct and interpret pie charts. Compare distributions using charts and identify misleading data. Interpret financial graphs. Unit 14 Measures of location and spread. Find the mean, median, mode and range from a list. Find the mean from an ungrouped frequency table. Understand the advantages and limitations of each average. Compare data using averages and range. Solve worded and missing number problems with averages and range.



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 9	 Unit 01 Scale Diagrams Convert between metric units. Construct and interpret scale diagrams. Use map scales effectively. Unit 02 Decimals Multiply a decimal by a decimal. Divide numbers where the divisor is a decimal. Unit 03 Rounding and Estimation Round numbers to a given number of significant figures. Estimate answers by rounding each number to one significant figure. Truncate a number. Solve worded problems with rounding and estimation. 	 Unit 04 Area and Perimeter Identify the properties of 3D shapes. Calculate the area of a trapezium. Calculate the area of semi-circles, quarter-circles and three-quarter- circles. Calculate the area of compound shapes including trapezia and fractions of circles. Solve problems relating to area and perimeter. 	 Unit 05 Equations and Expressions Distinguish between identities, equations, expressions, inequalities, and formulae. Substitute values into formulae. Substitute values into formulae. Solve equations with unknowns on both sides. Solve equations with brackets. Expand 2 binomials. Recognise, sketch and produce graphs of linear and quadratic functions. Solve equations involving fractions. Solve problems by forming and solving equations. Unit 06 Coordinates and Linear Graphs Understand and apply gradient. Recognise that straight lines are always in the form y = mx + c and use the equation. Solve problems involving straight line graphs. Use linear functions to solve simultaneous equations graphically. 	 Unit 07 Ratio and Proportion Combine two ratios. Solve recipe problems. Write a ratio as a linear function. Solve problems with ratio and geometry. Unit 08 Real Life Graphs Plot and interpret distance-time graphs. Plot and interpret real-life graphs. Plot and interpret graphs showing situations in geometry such as the depth of water in a container. 	 Unit 09 Sequences Find the nth term of a linear sequence. Determine if a term is in a sequence Work with Geometric sequences. Unit 10 Percentages Work with reverse percentages. Calculate simple interest. Calculate compound interest and depreciation. Solve problems with percentages. Calculate speed, distance, time. Calculate pressure. Unit 12 Constructions and Loci Construct perpendiculars to a line. Solve problems with constructions and loci. 	 Unit 13 Right Angle Triangles Apply Pythagoras' Theorem to find the missing side of a right- angled triangle. Apply Pythagoras' Theorem twice. Apply Pythagoras' to 3D solids. Use Pythagoras' Theorem to find the distance between two co- ordinates. Solve problems with Pythagoras' Theorem. Label the sides of a right- angled triangle. Know and use the trigonometric ratios. Find the missing side of a right-angled triangle using trigonometry. Unit 14 Number Skills Estimating powers and roots. Convert recurring decimals to fractions. Find upper and lower bounds and use these to write error intervals. Find the upper and lower bounds of a number that has been truncated and use these to write error intervals. Calculate with upper and lower bounds. Solve problems with number skills



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10 (F) •	nit 01 Probability Understand that probabilities sum to one for exhaustive events. Understand and use relative frequency and expectation. Find probabilities from Venn Diagrams. Understand and use set notation for Venn Diagrams. Find probabilities from two-way tables and frequency trees. Explore mutually exclusive and independent events. Complete and use a probability tree. Unit 02 Indices Understand the multiplication and division laws for indices. Understand that anything to the power of zero is 1. Understand the powers of powers index law. Calculate with roots.	 Unit 03 Transformations Enlarge a shape using a fractional scale factor. Explore invariant points from transformations. Unit 04 Standard Form Order numbers in standard form Add and subtract numbers in standard form. Multiply numbers in standard form. Divide numbers in standard form. Use a calculator with standard form. Solve problems with standard form. 	 Unit 05 Area and Volume Work backwards with area and circumference of a circle. Calculate the perimeter of semi-circles and quarter- circles. Convert units of area. Find the area of a shape after it's been enlarged. Work backwards with volume. Convert units of volume. Solve problems with area and volume. Find the area of a sector. Find the length of an arc. Find the length of an arc. Find the density when the volume needs to be found. Unit 06 Algebra Represent inequalities on a number line. Solve inequalities. Recognise quadratic equations and expressions. Expand the product of two binomials. Factorise and solve a quadratic where a = 1. Changing the subject. Solve simultaneous equations algebraically. Form and solve simultaneous equations. Equating coefficients with identities. 	 Unit 07 Surface Area Draw the net of a 3D solid. Find the surface area of any prism. Find the surface area of a cylinder. Find the surface area of a sphere. Find the surface area of a cone. Solve problems with surface area. Unit 08 Congruence and Similarity Understand the meaning of congruence. Use the basic congruence criteria for triangles. Understand the meaning of similarity. Link congruence and similarity to transformations. Apply congruence and similarity to problems. 	 Unit 09 Properties of Polygons Draw shapes on isometric paper. Understand and use plans and elevations. Find one interior angle of any regular polygon. Find one exterior angle of any regular polygon. Solve problems with polygons. Unit 10 Trigonometry Know and use exact trig values. Find the missing angle of a right-angled triangle using trigonometry. Identify when to use Pythagoras and when to use Trigonometry. Solve problems with trigonometry. Identify the gradient and y-intercept of equations of lines that are not in the form y = mx + c Understand and identify parallel gradients. Sketch inequalities. Sketch non-linear graphs. Understand the link between quadratic equations and their graphs. Know that correlation does not imply causation and extrapolate and interpolate. Find the equation of real- life graphs. 	 Unit 12 Sequences Find the nth term of a decreasing linear sequence Recognise and use Fibonacci style sequences. Work with quadratic sequences Work with algebraic sequences. Unit 13 Bearings Understand what a bearing is. Draw and measure bearings accurately. Calculate back bearings. Apply Pythagoras' Theorem and Trigonometry to bearings. Solve problems with bearings. Understand and recognise the difference between qualitative and quantitative data, and discrete and continuous data. Apply statistics to describe a population and know the limitations of sampling. Calculate the mean, find the group that the median is in, and find the modal class from a grouped frequency table. Calculate the quartiles and interquartile range for a set of data. Draw and interpret box plots. Solve problems with averages and range. Interpret and construct line graphs for time series data.



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10 (H)	 Unit 01 Probability Understand that probabilities sum to one for exhaustive events. Understand and use relative frequency and expectation. Find probabilities from Venn Diagrams. Understand and use set notation for Venn Diagrams. Find probabilities from two- way tables and frequency trees. Explore mutually exclusive and independent events. Complete and use probability trees. Calculate and interpret conditional probability. Solve problems with probability. Understand the multiplication and division laws for indices. Understand that anything to the power of zero is 1. Understand the powers of powers index law. Understand and use fractional and negative indices. Solve problems with indices. Tatasformations Enlarge a shape using a fractional scale factor. Enlarge a shape using a fractional scale factor. Enlarge a shape using a fractional scale factor. Explore invariant points from transformations. Complete combinations of transformations. 	 Unit 04 Standard Form Order numbers in standard form. Add and subtract numbers in standard form. Multiply numbers in standard form. Divide numbers in standard form. Divide numbers in standard form. Use a calculator with standard form. Solve problems with standard form. Solve problems with standard form. Convert units of area and volume. Find the area of a shape after it's been enlarged. Find the area of a sector. Find the length of an arc. Find the length of an arc. Find the density when the volume needs to be found. Solve problems with area and volume. Unit O6 Algebra Represent inequalities on a number line. Solve inequalities. Recognise quadratic equations and expressions. Expand the product of three binomials. Factorise and solve quadratics. Changing the subject. Solve simultaneous equations. Equating coefficients with identities. Solve simultaneous equations. 	 Unit 07 Surface Area Draw the net of a 3D solid. Find the surface area of any prism. Find the surface area of a cylinder. Find the surface area of a sphere. Find the surface area of a cone. Solve problems with surface area. Unit 08 Congruence and Similarity Understand the meaning of congruence. Prove that triangles are congruent. Understand the meaning of similarity. Link congruence and similarity to transformations. Use similarity to find the volume of frustums. Apply congruence and similarity to problems. Unit 09 Properties of Polygons Draw shapes on isometric paper. Understand and use plans and elevations. Solve problems with polygons. 	 Unit 10 Surds Understand what a surd is. Multiply and Divide surds. Add and subtract surds. Expand brackets involving surds. Rationalise the denominator. Solve problems with surds. Unit 11 Trigonometry Know and use exact trig values. Find the missing angle of a right-angled triangle using trigonometry. Use trigonometry in a 3D context. Understand how to use the sine rule and cosine rule. Identify when to use Pythagoras, trigonometry, sine rule, and cosine rule. Find the area of a triangle using sine. Solve problems with trigonometry. Recognise and sketch the graphs of trigonometric functions. Solve trig equations by using the graphs of Sin and Cos. Unit 12 Circle Theorems Know and use all circle theorems. Prove all circle theorems. Solve problems with circle theorems. 	 Unit 13 Graphs Identify the gradient and y-intercept of equations of lines that are not in the form y = mx + c Understand and identify parallel and perpendicular gradients. Sketch inequalities. Sketch non-linear graphs. Understand the link between quadratic equations and their graphs. Solve quadratic inequalities. Solve quadratic inequalities. Know that correlation does not imply causation and extrapolate and interpolate. Find the equation of real-life graphs. Understand gradient as a rate of change. Draw and interpret velocity time graphs. Find the gradient of a curve at a point by drawing a tangent. Find the average rate of change by finding the gradient of a chord. Calculate the area under a graph consisting of straight lines. Estimate the area under a curve. Unit 14 Sequences Recognise and use Fibonacci style sequences. Work with algebraic sequences. Work with quadratic sequences. Solve problems with sequences. Calculate back bearings. Draw and measure bearings accurately. Calculate back bearings. Apply Pythagoras' Theorem and Trigonometry to bearings. Apply the sine and cosine rule to bearings. 	 Junit 16 Statistical Measure Understand and recognise the difference between qualitative and quantitative data, and discrete and continuous data. Apply statistics to describe a population and know the limitations of sampling. Calculate the mean, median and mode from ungrouped frequency tables. Estimate the mean, find the group that the median is in, and find the modal class from a grouped frequency table. Calculate the quartiles and interquentle range for a set of data. Draw and interpret box plots. Draw and interpret cumulative frequency graphs. Understand and interpret histograms. Draw histograms with cumulative frequency diagrams. Find the mean, median, mode, and interquartile range from a nistogram. Solve problems with averages and range, and histograms and graphs Interpret and construct line graphs for time series data. Unit 17 Proportion Solve worded problems with direct and inverse proportion. Work with direct proportion algebraically. Work with more difficult direct and inverse proportion algebraically.



2024/2025 Y11 Students are not following the below learning journey which is consistent with the GCSE course they started in September 2023. The learning journey for this year group can be found at the end of this document.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 11 (F)	 Unit 15 Proportion Solve worded problems with direct and inverse proportion. Recognise and sketch graphs of direct and inverse proportion. Work with direct proportion algebraically. Work with inverse proportion algebraically. Work with inverse proportion algebraically. Unit 16 Vectors Understand and use vector notation. Multiply a vector by a scalar. Add and subtract vectors. Solve simple geometrical problems with vectors. 	 Unit 17 Calculator Skills Use powers and roots buttons on a calculator. Understand how to use fractions and convert between FDP on a calculator. Use the time button on a calculator. Solve a range of calculator problems. Unit 18 Reactive (HoD Directed) Reactive teaching directed by Head of Department. 	Mock 1 SoW	Mock 1 SoW	Mock 2 SoW	Mock 2 SoW



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 11 (H)	 Unit 19 Vectors Understand and use vector notation. Multiply a vector by a scalar. Add and subtract vectors. Calculate the resultant of two vectors. Work with parallel vectors. Work with colinear points. Solve geometrical problems with vectors. Vector proof. Unit 20 Proof Understand and use proof notation. Construct a logical argument for algebraic proof. Unit 21 Algebraic Fractions Simplify algebraic fractions. Multiply and divide algebraic fractions. Solve equations with algebraic fractions. Solve problems with algebraic fractions. 	Unit 22 Quadratic Formula and Completing the Square Understand how to complete the square. Determine the turning point of a quadratic by completing the square. Solve quadratic equations by completing the square. Prove the quadratic formula by completing the square. Understand and use the quadratic formula. Solve quadratic inequalities. Solve quadratic formula. Solve quadratic formula. Solve guadratic formula. Solve problems with completing the square and the quadratic formula. Understand and use function notation. Find inverse functions. Find composite functions. Find composite functions. Find composite functions. Reflect graphs/functions. Reflect graphs/functions. Solve problems with graphs/functions. Solve problems with graphs/functions. Unit 24 Numerical Methods Use trial and improvement to solve equations. Use iteration to solve equations.	Mock 1 SoW	Mock 1 SoW	Mock 2 SoW	Mock 2 SoW



2024/2025 Y11 Students are following the below learning journey which is consistent with the GCSE course they started in September 2023.

	Ter	m 1	Term 2		Term	n 3
Year 11	<u>Higher</u> Properties of shapes Solving Equations and Inequalities I Proportional Reasoning	<u>Higher</u> Algebraic Proficiency: Tinkering Analysing Statistics Solving Equations and inequalities II	Higher Algebraic Proficiency: Visualising Mathematical Movement II	<u>Higher</u>		
	Trigonometry in two dimensional and three dimensional Pythagoras' Theorem in two dimensional and three dimensional Solving and sketching quadratics Solve problems involving direct and inverse proportion	Functions Non-linear simultaneous equations including circle Histograms with unequal class intervals	Exponential graphs Graphs of trigonometric functions Transformation of graphs Solve problems involving rates of change Vector geometry	Revision		
Year 11	Foundation Calculating Solving Equations and Inequalities I Mathematical Movement Algebraic Proficiency Proportional Reasoning	Foundation Pattern sniffing, calculating space, exploring fractions, decimals and percentages	<u>Foundation</u> Solving Equations and Inequalities II Algebraic Proficiency: Visualising Analysing Statistics Mathematical Movement	<u>Foundation</u>		
	Index laws Transforming shapes Solve equations Direct and inverse proportion	Sequences Volume and surface area of complex shapes Compound percentages	Solving quadratic equations Approximating solutions from a quadratic curve Vectors Sampling	Revision		

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	Ter	m 1	Ter	m 2	Term 3	
Year 12	Algebraic Expressions, Quadratics, Straight Line Graphs and Binomial Expansion, Circles and Algebraic Methods	Equations and Inequalities, Trigonometric Ratios, Data collection and Measures of Location and Spread	Graphs and Transformations, Representations of data and Trigonometric identities and equations	Differentiation and Integration, Correlation, Probability, Modelling Mechanics and Constant Acceleration	Vectors, Hypothesis Testing, Exponentials and Logarithms, Forces and Motion and Variable Acceleration	Algebraic Methods, Radians, Functions and Graphs
Year 13	Trigonometric Functions, Normal Distribution and Moments	Trigonometry and Modelling, Parametric Equations, Forces and Frictions, Regression and Projectiles	Differentiation, Conditional Probability, Applications of Forces	Integration, Sequences and Series, Further Kinematics, Binomial Expansion	Revision	