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#### Stretch opportunities are highlighted in blue.

Autumn 1
Vnit 01 Exploring Sequences  Describe and continue a sequence given diagrammatically. Predict and check the next term(s) of sequence. Recognise the difference between and continue, linea 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



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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8	<ul> <li>Unit 01 Ratio and Scale</li> <li>Use and understand the notation of ratio.</li> <li>Simplify ratios into the form 1:n and n:1.</li> <li>Divide a value into a given ratio.</li> <li>Write ratios as fractions and fractions as ratios.</li> <li>Understand π as the ratio between the diameter and circumference.</li> <li>Solve worded problems with ratio.</li> <li>Unit 02 Multiplicative Change</li> <li>Understand and use direct proportion.</li> <li>Solve best buy problems.</li> <li>Explore direct proportion graphs.</li> <li>Convert between currencies.</li> <li>Enlarge shapes by a given scale factor.</li> <li>Solve worded problems with proportion.</li> </ul>	<ul> <li>Unit 03 Multiply and Divide Fractions</li> <li>Multiply a fraction by an integer.</li> <li>Multiply any pair of fractions.</li> <li>Understand and use the reciprocal.</li> <li>Divide integers by fractions.</li> <li>Divide fractions by integers.</li> <li>Divide any pair of fractions.</li> <li>Unit 04 Working in the Cartesian Plane</li> <li>Find the midpoint of a line segment.</li> <li>Identify and draw lines that are parallel to the x and the y axis.</li> <li>Recognise and use lines in the form y = mx + c</li> <li>Link linear sequences to graphs.</li> <li>Explore non-linear graphs.</li> <li>Solve problems with co-ordinates and linear graphs.</li> </ul>	<ul> <li>Unit 05 Representing Data</li> <li>Plot and interpret scatter graphs.</li> <li>Recognise correlation.</li> <li>Make predictions using scatter graphs.</li> <li>Describe non-linear relationships.</li> <li>Read and interpret ungrouped and grouped frequency tables.</li> <li>Recognise key words surrounding data.</li> <li>Represent data in two-way tables.</li> <li>Unit 06 Sequences</li> <li>Generate a sequence from a simple algebraic rule.</li> <li>Generate a sequence from a more complex algebraic rule.</li> <li>Decide whether a term is in a sequence from the nth term.</li> </ul>	<ul> <li>Unit 07 Number Sense</li> <li>Solve problems with money.</li> <li>Solve problems with time and calendars.</li> <li>Read and interpret distance tables.</li> <li>Unit 08 Percentages</li> <li>Increase and decrease a number by a percentage.</li> <li>Increase and decrease a number by a percentage by using a multiplier.</li> <li>Solve problems with percentage change.</li> <li>Find the original amount when given percentages more and less than 100 (simple reverse percentages)</li> <li>Choose appropriate methods to solve percentage problems.</li> <li>Solve worded problems with percentages.</li> </ul>	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.  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 circumference of a circle.  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.  Translate 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. 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.



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	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.	<ul> <li>Unit 04 Area and Perimeter</li> <li>Identify the properties of 3D shapes.</li> <li>Calculate the area of a trapezium.</li> <li>Calculate the area of semi-circles, quarter-circles and three-quarter-circles.</li> <li>Calculate the area of compound shapes including trapezia and fractions of circles.</li> <li>Solve problems relating to area and perimeter.</li> </ul>	Expressions  Distinguish between identities, equations, expressions, inequalities, and 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.  Unit 11 Measures  Calculate speed, distance, time.  Calculate density.  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.  Product rule for counting.  Understand what happens if you square a root.  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
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 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.	<ul> <li>Unit 05 Area and Volume</li> <li>Work backwards with area and circumference of a circle.</li> <li>Calculate the perimeter of semi-circles and quarter-circles.</li> <li>Convert units of area.</li> <li>Find the area of a shape after it's been enlarged.</li> <li>Work backwards with volume.</li> <li>Solve problems with area and volume.</li> <li>Find the area of a sector.</li> <li>Find the length of an arc.</li> <li>Find the volume of spheres and cones.</li> <li>Find the density when the volume needs to be found.</li> <li>Unit 06 Algebra</li> <li>Represent inequalities on a number line.</li> <li>Solve inequalities.</li> <li>Recognise quadratic equations and expressions.</li> <li>Expand the product of two binomials.</li> <li>Factorise and solve a quadratic where a = 1.</li> <li>Changing the subject.</li> <li>Solve problems with inequalities and quadratics.</li> <li>Solve simultaneous equations algebraically.</li> <li>Form and solve simultaneous equations equations algebraically.</li> <li>Form and solve simultaneous equations.</li> <li>Equating coefficients with identities.</li> </ul>	<ul> <li>Unit 07 Surface Area</li> <li>Draw the net of a 3D solid.</li> <li>Find the surface area of any prism.</li> <li>Find the surface area of a cylinder.</li> <li>Find the surface area of a sphere.</li> <li>Find the surface area of a cone.</li> <li>Solve problems with surface area.</li> <li>Unit 08 Congruence and Similarity</li> <li>Understand the meaning of congruence.</li> <li>Use the basic congruence criteria for triangles.</li> <li>Understand the meaning of similarity.</li> <li>Link congruence and similarity to transformations.</li> <li>Apply congruence and similarity to problems.</li> </ul>	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. Unit 11 Graphs 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 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, 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 interquartile range for a set of data. Draw and interpret cumulative frequency graphs. Solve problems with averages and range. Interpret and construct line graphs for time series data.



Unit 01 Probability Understand that probabilities sum to one for exhaustive events. Understand and use relative frequency and expectation. Find probabilities from Venn Diagrams. Find probabilities from vay tables and frequency trees. Explore mutually exclusive and independent events. Compete and use probability trees. Explore mutually exclusive and independent events. Complete and use probability trees. Calculate and interpret conditional probability. Unit 02 Indices Understand that anything  Vear  Vear  Vear  Unit 04 Standard Form Order numbers in standard form. Add and subtract numbers in standard form. Divide numbers	raphs Idient and y- lations of lines the form y =  d identify rpendicular  ties. lar graphs. le link between  Unit 16 Statistical  Measure  Understand and recognise the difference between qualitative a quantitative data, and discrete a continuous data.  Apply statistics to describe a population and know the limitations of sampling. Calculate the mean, median and mode from ungrouped frequency tables.
<ul> <li>Understand that probabilities sum to one for exhaustive events.</li> <li>Understand and use relative frequency and expectation.</li> <li>Find probabilities from Venn Diagrams.</li> <li>Understand and use set notation for Venn Diagrams.</li> <li>Understand and use set notation for Venn Diagrams.</li> <li>Find probabilities from two-way tables and frequency trees.</li> <li>Explore mutually exclusive and independent events.</li> <li>Complete and use probability.</li> <li>Conditional probability.</li> <li>Solve problems with probability.</li> <li>Solve problems with probability.</li> <li>Unit O2 Indices</li> <li>Understand that a withing wad and subtract numbers in standard form.</li> <li>Multiply numbers in standard form.</li> <li>Find the surface area of a cylinder.</li> <li>Find the surface area of a copiling surds.</li> <li>Find the sur</li></ul>	Measure  Understand and recognise the difference between qualitative at ata, and discrete a continuous data.  Apply statistics to describe a population and know the limitations of sampling. Calculate the mean, median and mode from ungrouped frequency tables.
to the power of zero is 1.  Understand the powers of powers index law.  Understand and use fractional and negative indices.  Solve inequalities. Solve problems with indices.  Unit 03 Transformations  Enlarge a shape using a fractional scale factor. Enlarge a shape using a negative scale factor. Enlarge a shape using a negative scale factor. Explore invariant points from transformations. Complete combinations of transformations.  Complete combinations of transformations.  To the power of zero is 1. Link congruence and similarity to find the volume of frustums. Solve similarity to find the volume of frustums. Link congruence and similarity to find the volume of frustums.  Solve similarity to find the volume of frustums.  Dust of the powers of powers index law. Solve problems with trigonometry.  Solve problems. District the area of a triangle using sine. Solve problems with trigonometry. Recognise and selve trigonometry. Recognise and sketch the graphs of trigonometric functions.  Dirit 03 Transformations  To Polygons  Draw shapes on isometric paper. Unit 12 Circle Theorems  Now and use all circle theorems.  Unit 12 Circle Theorems  Know and use all circle theorems.  Unit 15 Bearing  Understand and use plans and elevations. Solve problems with polygons.  Solve problems with oplygons.  Complete combinations of transformations of transformations.  Solve simultaneous equations with quadratics.	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. Draw and interpret box plots. Draw and interpret cumulative frequency graphs. Understand and interpret histograms. Draw histograms. Draw histograms. Compare histograms with cumulative frequency diagrams. Find the mean, median, mode, a interquartile range from a histogram. Solve problems with averages ar range, and histograms and graph Interpret and construct line grap for time series data.  Unit 17 Proportion Solve worded problems with direct and inverse proportice. Work with direct proportion algebraically. Work with inverse proportice algebraically.  Unit 18 Equation of a Circle. Find the equation of a circle. Find the equation of a circle.



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)	<ul> <li>Unit 15 Proportion</li> <li>Solve worded problems with direct and inverse proportion.</li> <li>Recognise and sketch graphs of direct and inverse proportion.</li> <li>Work with direct proportion algebraically.</li> <li>Work with inverse proportion algebraically.</li> <li>Unit 16 Vectors</li> <li>Understand and use vector notation.</li> <li>Multiply a vector by a scalar.</li> <li>Add and subtract vectors.</li> <li>Solve simple geometrical problems with vectors.</li> </ul>	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



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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 11 (H)	<ul> <li>Unit 19 Vectors</li> <li>Understand and use vector notation.</li> <li>Multiply a vector by a scalar.</li> <li>Add and subtract vectors.</li> <li>Calculate the resultant of two vectors.</li> <li>Work with parallel vectors.</li> <li>Work with colinear points.</li> <li>Solve geometrical problems with vectors.</li> <li>Vector proof.</li> <li>Unit 20 Proof</li> <li>Understand and use proof notation.</li> <li>Construct a logical argument for algebraic proof.</li> <li>Construct a logical argument for geometric proof.</li> <li>Unit 21 Algebraic         <ul> <li>Fractions</li> <li>Simplify algebraic fractions.</li> <li>Multiply and divide algebraic fractions.</li> <li>Add and subtract algebraic fractions.</li> <li>Solve equations with algebraic fractions.</li> <li>Solve problems with algebraic fractions.</li> </ul> </li> </ul>	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 simultaneous equations using the quadratic formula.  Solve problems with completing the square and the quadratic formula.  Unit 23 Functions  Understand and use function notation. Find inverse functions. Find composite functions.  Translate graphs/functions.  Reflect graphs/functions.  Identify and perform combinations of reflections and translations with graphs/functions.  Solve problems with 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.

Higher topics are highlighted in Blue.

	Term 1	Term 2	Term 3
Year 11	Multiplicative Reasoning Congruence, Similarity and Enlargement Listing and Describing Using Graphs Non Linear Graphs Functions	Manipulating Expressions Vectors Geometric Reasoning Algebraic Reasoning Show That	Mock SOW
	Understand direct and inverse proportion Construct complex direct and indirect proportion equations Calculate with pressure and density Ratio problems Enlarge by positive, fractional and negative scale factors. Identify similar shapes Work out missing lengths given similar shapes Establish a pair of triangles are similar. Work with lists. Sample spaces, Venn diagrams and probability Product rule for counting Plans and elevations Comparing distributions Scatter Diagrams Plot and read quadratic, cubic and reciprocal graphs. Identify properties of quadratic graphs. Understand and use exponential graphs, the equation of a circle, and tangents to curves. Use function machines Substitute into expressions and formulae. Work with composite and inverse functions. Graphs of quadratic functions. Solve quadratic inequalities.	Simplify algebraic expressions Use identities  Add/Subtract and Multiply/Divide simple and complex algebraic fractions Form and solve equations and inequalities with fractions.  Solve Equations with algebraic fractions. Understand read and represent vectors. Draw and understand vectors that have been added, subtracted, multiplied by a scalar.  Explore vectors in Journeys, quadrilaterals and parallel lines. Understand angles around a point, angles in parallel lines and interior/exterior polygons.  Prove geometric facts.  Circle Theorems. Show that with number, algebra, shape, angles, data, congruent triangles and vectors. Formal proof of congruent triangles	



	Term 1		Term 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	