OCL Maths Curriculum: 5-Year Long Term Plan

Year 7 Overview & Module Breakdown

Green cell – heavily associated with ratio and proportion

Red text – where the new calculator can be integrated or has integrated functions to make life easier.

Bold Text – Topics that will not be tested in the Mid-Year or EOY Papers, only in the extension papers

HT/Wk	1	2	3	4	5	6	7
Aut 1	Baseline	Integers		Decimals		Data & Charts	Sequences
Aut 2	Order of Operations	Negative Numbers	Expressions			Factors, Multiples, Primes	Mid-year Prep
Spr 1	Equivalent Fractions		Linear Equations	Operations with Fractions		Mid-year Re-teach	
Spr 2	Introduction to Ratio		Area and Perimeter		Coordinates	Re-teach	
Sum 1	Percentages		Probability	Angles, Triangles and Quadrilaterals		3D Shapes	Re-teach
Sum 2	Transformations		EOY Exam	Averages (list)	QLA & Re-teach		

Module Breakdown with Associated Knowledge

Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Module 1: Integers		**Module 5: Order of Operations**		**Module 9: Equivalent Fractions**		**Module 12: Introduction to Ratio**		**Module 15: Percentages**		**Module 20: Transformations**	
• Place value	To identify place value of integers up to 1,000,000	• Four operations	Sums include only add, subtract, multiply & divide	• Understand a fraction as part of a whole	Identify how fractions are formed from whole numbers	• Understand ratio as grouping	Writing ratios from text	• Convert between percentages and decimals	e.g. 60% = 0.6	• Line symmetry	Draw line symmetry of 2D shapes (regular and irregular)
• Rounding	To round integers to the nearest 10, 100, 1000	• Powers, roots and fractions	All operations in BIDMAS	• Making equivalent fractions	Up to 2 integers on the denominator e.g. $\frac{1}{5} = \frac{5}{25}$	• Equivalent ratios and simplifying	Simplifying a ratio and writing equivalent ratios by scaling up.	• Convert between fractions and percentages	e.g. 60% = $\frac{3}{5}$ Fractions in their simplest form.	• Rotational symmetry	Identify rotational symmetry of 2D shapes (regular and irregular)
• Adding & subtracting integers	Up to 6 digits by 6 digits including carrying	**Module 6: Negative Numbers**		• Simplifying fractions	Up to 3 integers on the denominator e.g. simplify $\frac{78}{120}$	• Write ratios in the form 1 : n and n : 1	From text including contextual problems.	• Calculate a percentage of an amount (NC)	Simple percentages of an amount e.g. 10%, 25%, 50% or 75%	• Translation	Translate 2D shapes using vector notation on axes
• Multiplying and divide by powers of 10	Multiply and divide integers by 10, 100, 1000	• Ordering negatives	Any negatives including integers and decimals	• Comparing fractions	Use equivalent fractions to compare which is larger.	• Find a missing value using equivalent ratios	Using scaling to determine a missing value, including context	• Calculate a percentage of an amount using build up method (NC)	e.g. 23% of 160 including context	• Reflection	Reflect 2D shapes using horizontal and vertical lines on axes
• Metric conversions	Converting length and mass using powers of 10	• Start & end points	Introduces how to use number lines to help operations with negatives	• Converting between decimals and fractions	e.g. $0.2 = \frac{1}{5}$ Fractions in their simplest form.	• Divide a quantity into a given ratio	Basic problems up to 3 numbers in the ratio.	• Calculate percentages of an amount over 100% (Non-Calc)	e.g. 135% of 680 including context	• Describing transformations	Describe translation and reflections using mathematical vocabulary
• Multiplying integers	Column method. Up to 4 digits by 4 digits	• Adding a negative	Any negatives including integers and decimals	**Module 10: Linear Equations**		• Convert between ratios and fractions	e.g. Ratio of red to green is 4 : 5. What fraction is red?	• Calculate percentage increase or decrease (Non-Calc)	e.g. increase £50 by 12% including context	• Enlargement (no centre)	Enlarge using a positive SF on a grid.
• Dividing integers	Bus stop method up to 2 integers as the divisor	• Subtracting a negative	Any negatives including integers and decimals	• Function machines (numeric)	Finding numerical input and output using function machines	**Module 13: Area & Perimeter**		**Module 16: Probability**		**Module 21: Averages (List)**	
• Divisibility tests	To ascertain whether a division will yield an integer answer for divisors 1-12	• Multiplying a negative	Any negatives including integers and decimals	• Function machines and expressions	Using letters to find expressions for the output	• Perimeter of 2D shapes	Perimeter of any 2D shapes (regular or irregular)	• Theoretical probability (language, fractions, number lines)	Probability of single events and using number lines, language and fractions to express ans.	• Calculating the mean from a list	Mean from a basic list and contextual problems
• Elapsed time	Solve problems calculating time following an event.	• Division with negatives	Any negatives including integers and decimals	• Inverse function machines	Using letters to find expressions for the input	• Perimeter of compound shapes	Rectilinear shapes only	• Complimentary events	Use fractions or decimals to express the probability	• Calculating the median and the mode from a list	Median and mode from a basic list and context
Module 2: Decimals		**Module 7: Expressions**		• Solving one-step equations	All operations covered.	• Perimeter and expressions	Express the perimeter in terms of algebra for 2D shapes inc. rectilinear	• Mutually exclusive events	Use fractions or decimals to express the probability	• Use average and range to compare data sets	Range from a list and compare data sets to establish the best average
• Decimal Place value	To identify place value of decimals up to 4 places above and below 0	• Writing expressions	Writing expressions from words; linear and non-linear	• Solving two-step equations	e.g. $2x + 1 = 9$ Integer, negative and fractional answers.	• Area of 2D shapes by counting	Basic 2D shapes on a 1 cm grid	• Exhaustive events	Listing all the outcomes of 1 or 2 events.		
• Reading scales	Read a variety of real-life scales excluding graph axes.	• Substituting into expressions	Positive and negative integers and decimals into a linear expression	• Equations and brackets	e.g. $2(x + 1) = 9$ Integer, negative and fractional answers.	• Area of rectangles	Using the formula to find area of a rectangle. Decimals and fractions inc.	**Module 17: Angles**			
• Adding & subtracting decimals	Up to 6 digits by 6 digits including carrying	• Collecting like terms	Single variables including powers negatives	• Solving two-step equations with fractions	e.g. $\frac{2x}{5} = 10$	• Area of parallelograms	Using the formula to find area of a parallelogram. Decimals and fractions inc.	• Describing, classifying and comparing angles	Identify different types of angles		
• Multiply decimals	Column method. Up to 4 digits by 4 digits	• Simplifying with multiplication	e.g. $2 \times 3d$ e.g. $2x^2 \times x$	**Module 11: Operations with Fractions**		• Area of a triangle	Using the formula to find area of a triangle. Decimals and fractions inc.	• Measure and construct angles	Measure and construct different types of angles		
• Division with decimal answers	Bus stop method up to 2 integers as the divisor	• Expanding single brackets	Single letter or number outside the bracket. Inside: 2 or 3 terms, letters or numbers.	• Mixed numbers and improper fractions	Convert between mixed numbers and improper fractions	• area of compound shapes (inc. rectangle, triangle, parallelogram)	Decimals and fractions included in calculations.	• Find unknown angles (straight line)	Calculating angles on a straight-line including ratio and algebra		

	• Dividing a decimal	e.g $6.3 \div 2.1$	• Expanding and simplifying	e.g. $2(x+1)-3(x-1)$ Could be letters outside also.	• Multiply fractions by integers and two fractions	Mixed number answers included and context	**Module 14: Coordinates**		• Find unknown angles (about a point)	Calculating angles about a point including ratio and algebra		
	Module 3: Data & Charts		• Forming expressions from worded contexts	More complex worded problems with multiple stages.	• Fraction of an amount	e.g. $\frac{2}{5}$ of 60 including context	• Describing positions on grids (4 quadrants)	Plot and identify coordinates in all quadrants	**Module 18: Triangles & Quadrilaterals**			
	• Types of Data	Identify quantitative and qualitative data	**Module 8: Factors, Multiples and Primes**		• Dividing a fraction by an integer	e.g. $\frac{3}{8} \div 5$ including context	• Identifying and comparing line segments	Identify, by counting, the length of different line segments	• Classifying triangles (and simple angle problems)	Know the different properties of triangles and finding angles		
	• Questionnaires	Construct and criticise	• Factors and primes	Identifying prime numbers and factors from a list. Generating factors of 2-digit numbers.	• Dividing by a fraction	Mixed number answers included and context	• Midpoint of a line segment (counting squares)	Calculating the midpoint of a line by counting (all quadrants)	• Finding unknown angles in triangles (including ratio and equations)	Combine basic angle rules and properties of triangles.		
	• Bar charts (constructing)	Draw a bar chart using quantitative and qualitative data	• Factors and HCF (list)	Finding HCF of 2 numbers by listing	• Add and subtract with common denominators	Mixed number answers included and context	• Midpoint of a line segment (formula)	Using the formula to calculate midpoint of a line (all quadrants)	• Classifying quadrilaterals	Identifying different quadrilaterals		
	• Bar charts (interpreting)	Basic interpretation excluding cross topic links	• Square & cube numbers	Identify and generate square & cube numbers	• Addition and subtraction with different denominators	Mixed number answers included and context	• Solving problems with shapes and vertices on axes	Adding coordinates on a 4-quadrant grid to form basic 2D shapes.	• Finding unknown angles in quadrilaterals	Using properties of quadrilaterals to find missing angles		
	• Pictograms	Construct and interpret	• Multiples and LCM (list)	Finding LCM of 2 numbers by listing			• Drawing horizontal and vertical lines	Identifying and drawing horizontal and vertical equation lines	• Finding unknown angles in quadrilaterals (including ratio and equations)	Combine angle rules with quadrilaterals		
	Module 4: Sequences		• Index notation	Convert index notation into integers e.g. $2^2 \times 3^2 = 36$			• Solving problems with horizontal and vertical lines	Solve geometrical problems with horizontal and vertical lines.	**Module 19: 3D Shapes**			
	• Types of sequence	Identify arithmetic and geometric sequences	• Prime factorisation	Use factor trees to express integers as a product or its prime factors.					• Identify 3D shapes and their properties (faces, edges, vertices)	Common 3D shapes e.g. triangular prism		
	• Term-to-term rules	Finding the next *n* terms of a given sequence	• HCF using prime factors (Venn)	Use a Venn diagram to find the HCF of 2 integers					• Nets	Nets of 3D shapes e.g. cuboids including cylinder		
	• Sequences and patterns	Continue sequences by drawing the next *n* patterns	• LCM with prime factors (Venn)	Use a Venn diagram to find the LCM of 2 integers					• Plans and elevations (excluding volume)	Drawing and identifying plans and elevations of 2D shapes.		

Year 8 Overview & Module Breakdown

HT/Wk	1	2	3	4	5	6	7

Aut 1	INSET	Factorising	Sequences	Fractions	Probability	Indices & Standard Form
Aut 2	Linear Graphs		Ratio		Accuracy & Estimation	Circles
Spr 1	Solving Linear Equations			Inequalities	Mid-year Re-teach	
Spr 2	Pythagoras	Direct & Inverse Proportion		Compound Measures	Angles & Polygons	Re-teach
Sum 1	Surface Area and Volume		Similarity and Congruence	Transformations	Real-life Graphs	Re-teach
Sum 2	Univariate Data	Bivariate Data	EOY Exam	Constructions	QLA & Re-teach	

Module Breakdown with Associated Knowledge

Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Module 1: Factorising		**Module 6: Linear Graphs**		**Module 10: Equations**		**Module 12: Pythagoras**		**Module 16: Surface Area & Volume**		**Module 20: Univariate Data**	
• Recap expanding and simplifying	e.g. $2(x+1)-3(x-1)$ Could be letters and numbers outside also.	• Reasoning with coordinates	Vertical and horizontal lines, missing coordinates in shapes	• Equations, expressions and identities	Identify and give examples	• Finding the hypotenuse	Includes decimal answers and rounding to decimal places or sig fig.	• Recap compound area	Including rectangle, triangle, parallelograms	• Recap Y7 statistics	Bar charts and pictograms
• Algebraic factors	Finding letter and number factors of expressions	• Horizontal and vertical lines	Drawing and identifying in 4 quadrants	• Recap Y7 solving (2-step with and without fractions)	e.g. $2(x+1)=9$ Integer, negative and fractional answers.	• Finding shorter sides	Includes decimal answers and rounding to decimal places or sig fig.	• Area of a trapezium	Can include decimals and fractions	• Composite bar charts	Complete and interpret
• Factorising lesson 1 (single factor outside bracket)	e.g. $3(4x-1)$ e.g. $x(x+3)$	• Plotting straight lines (positive gradients)	e.g. $y=3x+1$	• Equations with x on both sides	e.g. $2x+1=x-3$	• Pythagoras (worded problems)	Includes decimal answers and rounding to decimal places or sig fig.	• Volume of cubes and cuboids	Can include unit changes, decimals and fractions	• Two-way tables	Create, complete and interpret
• Factorising lesson 2 (multiple factors outside bracket)	e.g. $4x(x-1)$	• Plotting straight lines (negative gradients)	e.g. $y=2-4x$	• Equations with x on both sides (brackets)	e.g. $2(x+1)=x-3$	• Pythagoras (geometrical contexts)	e.g. circles with a triangle in to find the diameter.	• Calculate volume of prisms	Can include cross topic links e.g. Pythagoras	• Constructing pie charts	With circle already drawn and frequency table given
Module 2: Sequences		• Gradient of a straight line	Calculate the gradient of a line from a graph and two coordinates	• Equations and worded problems	Forming a simple equation and solving it in context	**Module 13: Proportion**		• Calculate volume of cylinders	Can include unit changes, decimals and fractions	• Interpreting pie charts	Angles fully or partially given. Use of proportion.
• Types of sequence (including triangular, Fibonacci)	Identifying and continuing different types of sequence.	• General equation of a line (y = mx + c)	Investigate the component parts of a straight-line graph	• Equations and angle problems	Up to 2-step with variable on both sides.	• Constants of proportionality and scale factors	Investigating rea-life examples from simple problems	• Volume and capacity problems	Can include unit changes, decimals and fractions	• Interpreting pie charts (more complex problems)	Includes cross topic links with ratio and algebra
• Generate a sequence from a rule	Generate a sequence from the nth term	• Points on lines	Show that a point either lies on a line or not	• Equations and area and perimeter problems	Up to 2-step with variable on both sides.	• Use the unitary method to scale directly proportional values	Can be from a table of values	• Find surface area of cubes and cuboids	Can include unit changes, decimals and fractions	**Module 21: Bivariate Data**	
• Nth term of a linear sequence	Generate n term for a arithmetic sequence	• x and y intercepts	Determine the x and y intercepts of an equation	• Simple quadratic equations	e.g. $2x^2=72$	• Solve problems with direct proportion	Worded problems only (no equations)	• Find surface area of other prisms	Can include cross topic links e.g. Pythagoras	• Time-series graphs	Complete and interpret
• Sequences and patterns with shapes (nth term)	Generate nth term of a patterned sequence	• Parallel lines	Generate and identify equations of parallel lines	• Forming and solving from different contexts	Cross topic links e.g. averages	• Solve problems with direct proportion	Recipes	• Find surface area of cylinders	Can include unit changes, decimals and fractions	• Draw and complete scatter graphs	Includes determining outliers
• Nth term of simple quadratic sequences	e.g. n^2 or $3n^2$	**Module 7: Ratio**		• Equations with the unknown on the denominator	e.g. $\frac{3}{2x}=5$	• Solve problems with direct proportion	Best Buy problems	**Module 17: Similarity & Congruence**		• Correlation & lines of best fit	Stating correlation and relationship & using line of best fit to estimate values
Module 3: Fractions		• Ratio vs proportion	Explore the difference between ratio and proportion	• Solve equations graphically	Two straight-line graphs only	• Solve problems with inverse proportion	Worded problems only (no equations)	• Identify similar and congruent shapes	Basic 2D shapes	**Module 22: Constructions**	
• Recap fractions, decimals percentages conversion	Convert between FDP including use of a calculator	• Solving ratio problems by scaling (parts and totals)	Can be a two- or three-part ratio	**Module 11: Inequalities**		• Elapsed time and converting units of time	e.g. converting hours and minutes into decimals of an hour	• Simple proofs of similarity	Parallel lines, vertically opposite	• Circle properties & constructing circles	Recap of circle parts and use of compass. Radius or diameter given
• Recap multiplying fractions including mixed numbers	Both calc and non-calc	• Solve "more" problems using ratios	Can be a two- or three-part ratio	• Inequalities and number lines	Write the inequality and draw it on a number line (single and double)	**Module 14: Compound Measures**		• Similar shapes	Missing sides only	• Constructing triangles	Sides only
• Recap dividing fractions including mixed numbers	Both calc and non-calc	• Combining ratios	Combining two 2-part ratios to form a single 3-part ratio	• Solve linear inequalities	e.g. $2(x+5)\geq 1$	• Compound measures: calculating average speed	Calculate speed, distance and time for single journeys (Non-contextual)	**Module 18: Transformations**		• Impossible triangles	Investigate triangles that can't be drawn and why. Sides only
• Recap add and subtract with fractions including mixed numbers	Both calc and non-calc	• Ratio problems and geometry	Lengths, area perimeter	• Solve double inequalities	e.g. $-4<2x+1\leq 7$	• Compound measures: solving problems with speed, distance and time	Worded problems	• Recap translation and reflection	Vectors and use of equations	• Constructing triangles	From a side and two angles
Module 4: Probability		• Ratio problems and geometry	Angles triangles, quads, straight lines, full turn	• Solve inequalities by adding x values to both sides	e.g. $2x+1\leq x+2$	**Module 15: Angles and Polygons**		• Performing rotations	On axes in all directions.	• Constructing triangles	SAS

• Recap theoretical, complimentary, exhaustive, mutually exclusive	General recap of single event probability including 'not' events.	**Module 8: Accuracy**		• Forming inequalities from geometric contexts	Angles, Area & Perimeter	• Triangles and quadrilaterals recap	Problems including ratio.	• Describing rotations	On axes in full using mathematical vocabulary	• Constructing quadrilaterals	Sides and/or angles
• Independent events and multiplication	Calculating the probability using the 'and' rule	• Rounding to a given number of decimal places	Up to 5 decimal places in numbers less than and greater than 0	• Solve inequalities graphically	Shading regions - horizontal and vertical lines	• Vertically opposite and alternate angles	Problems including ratio.	• Recap enlargement with positive scale factors	On axes, no centre		
• Expected outcomes given a probability	Calculate expected outcomes of given probabilities	• Rounding to a given number of significant figures	Up to 5 significant figures in numbers less than and greater than 0			• Corresponding and co-interior angles	Incorporates all previous angle rules learned.	• Performing enlargement from a centre	On axes, with centre and positive SF.		
• Systematic listing	Listing all possible outcomes of two events	• Estimation	Rounding numbers to 1 significant figure for calculations (non-context)			• Polygon properties and introduction to interior and exterior angles	Regular and irregular polygons	• Describing enlargement from a centre (positive SF)	On axes in full using mathematical vocabulary		
• Sample space diagrams	Create and use sample space diagrams to calculate probabilities	**Module 9: Circles**				• Interior angles of irregular polygons	Problems including ratio.	**Module 19: Real-Life Graphs**			
• Probability from two-way tables	Create and use two-way tables to calculate probabilities	• Identifying and labelling parts of a circle	Radius, Diameter, Chord, Segment, Sector, Arc, Circumference, Tangent			• Exterior angles in regular polygons	Problems including ratio.	• Interpret gradient in context	On real-life graphs and real-world contexts		
• Frequency trees (completing)	Completing a frequency tree including FDP	• Circumference of a circle	Calculator and in terms of π			• Interior angles in regular polygons	Problems including ratio.	• Represent real-life contexts as linear relationships	e.g. taxi fares		
• Probabilities from frequency trees	Calculating probabilities from frequency trees	• Arc length and perimeter of semi-circles and quarter-circles	Calculator and in terms of π			• Solve problems with interior and exterior angles	e.g. Two or more polygons stuck together	• Sketch flowrate and non-linear graphs	e.g. filling a swimming pool		
Module 5: Indices & Standard Form		• Area of a circle	Calculator and in terms of π			• Angles, equations and ratios	Includes all angle rules learned.	• Draw and interpret distance time graphs	Calculating speed, and other basic interpretations e.g. how long stopped for		
• Calculating with powers and roots	Calculations involving different powers and roots up to nth root.	• Area of semi-circles and quarter-circles	Calculator and in terms of π								
• Converting numbers to and from standard form	Including positive and negative powers	• Apply formula for area and perimeter of sectors	Using $\frac{\emptyset}{360}$ where Ø can be any angle in a minor segment								
• Converting answers to calculations to standard form	Contextual problems giving answers in standard form										

Year 9 Overview & Module Breakdown

Year 9	1	2	3	4	5	6	7
Aut 1	INSET	Rearranging Formulae		Percentages and Multipliers		Indices and Standard Form	
Aut 2	Quadratics		Coordinate Geometry		Linear Graphs	Accuracy & Bounds	Re-teach

Spr 1	Probability		Trigonometry		Mid-year Re-teach
Spr 2	Surds	Simultaneous Equations	Surface Ares & Volume		Re-teach
Sum 1	Averages from Tables		Direct Proportion	Compound Measures	Re-teach
Sum 2	Direct & Inverse Proportion Equations	Bearings	EOY Exam	Constructions & Loci	QLA & Re-teach

Module Breakdown with Associated Knowledge

Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Module 1: Rearranging Formulae		**Module 4: Quadratics**		**Module 8: Probability**		**Module 10: Surds**		**Module 13: Averages from Tables**		**Module 16: Proportion Equations**	
• Recap of solving linear equations	e.g. $2(x+1)=x-3$	• Recap expressions, equations, formula	Identify and write examples	• Theoretical probability and expected outcomes	General recap of single event probability including 'not' events.	• Recap Powers and roots	Calculations involving different powers and roots up to nth root.	• Recap of pie charts - interpreting	Angles fully or partially given. Use of proportion.	• Recap direct and inverse proportion from Y8	Worded problems
• Rearranging one and two step formulae	e.g. Make g the subject $4g-p=s$	• Recap Expanding single brackets inc. geometrical context	e.g. $2x(x+1)$ relate to area and perimeter	• Recap calculating probability from tables and charts	Two-way tables, frequency trees, bar charts	• Simplifying surds by multiplying & dividing and a√b	e.g. simplify $\sqrt{75}$ or $2\sqrt{8}\times\sqrt{5}$	• Construct and interpret Stem & leaf diagrams	Single stem and leaf diagram. Include decimals and place value to 100's	• Set up equations for direct proportion	$y=kx$ including tables
• Rearranging 3 step formulae	e.g. Make x the subject $\frac{2x+1}{p}=t$	• Expanding double brackets	e.g. $(x-3)(2x+1)$	• Relative frequency	Worded problems and tables	• Simplifying surds by adding and subtracting using a√b	e.g. $\sqrt{8}+3\sqrt{2}$	• Construct and interpret Stem & leaf diagrams	Finding averages or other basic interpretations	• Solve direct proportion equations to find missing values	$y=kx$ including tables
• Rearranging with powers and roots	e.g. Make x the subject $5x^2+y=p$	• Factorising quadratic expressions where a=1	e.g. x^2-x-6	• Venn diagrams - Set notation, regions & constructing	Constructing for totals	• Rationalise the denominator (simple √b or a√b)	e.g. $\frac{3}{2\sqrt{8}}$	• Recap of averages and range and comparing data sets	Averages from a list and compare data sets to establish the best average	• Solve inverse proportion equations to find missing values	$y=\frac{k}{x}$ including tables
Module 2: Percentages and Multipliers		• Find the difference of two squares	e.g. x^2-16	• Venn diagrams - constructing	Constructing for individual number sets	**Module 11: Simultaneous Equations**		• Solve problems involving the mean	Reverse mean problems (not from tables)	**Module 17: Bearings**	
• Recap calculating percentage increase and decrease (Non-Calc)	Build up method.	• Solving quadratic equations by factorising	e.g. $x^2-x-6=0$	• Venn diagrams - constructing	Including problems with ratio, percentages etc	• Solving simultaneous equations by substitution	Linear only	• Calculating the mean from a frequency table	Discrete frequency table	• Angles, bearings and compass directions	Know directions, how to write a bearing and the difference from an angle
• Percentage change	Basic calculations without context	• Substitution (into quadratics)	e.g. if $x=-2$ x^2-3x+9	• Venn diagrams - probabilities	Including notation e.g. $P(A'\cap B)$	• Solving simultaneous equations by elimination	Linear only (no scaling)	• Calculating the mean from tables and charts	e.g. Bar charts, line graphs	• Measure bearings	Angles less than and greater than 180°
• Profit and loss	Contextual problems	• Plot quadratic graphs	Positive and negative coefficients of x^2	• Probability trees - constructing	Independent events only	• Solving simultaneous equations by elimination	Linear only (scaling)	• Mode, range and median from grouped data	Continuous data (grouped)	• Calculate missing bearings	Angles less than and greater than 180°
• Converting percentages to multipliers percentage of an amount (Calc)	Includes contextual problems	• Use quadratic graphs to estimate roots and solve equations	Roots and solving e.g. $x^2-x-6=3$	• Probability trees - interpreting	Independent events only	• Solving simultaneous equations by elimination	Linear only (rearranging and scaling)	• Estimating the mean from grouped data	Continuous data (grouped)	• Calculate back bearings	Angles less than and greater than 180°
• Percentage increase and decrease with multipliers (Calc)	Includes contextual problems	**Module 5: Coordinates**		**Module 9: Trigonometry**		• Forming and solving simultaneous equations	Worded problems only	**Module 14: Proportion**		• Bearings and scales	Involves unit conversions and measuring with a ruler
• Best buys involving percentages and ratio	Includes ratio and percentage increase and decrease and offers	• Recap midpoints and geometric problems	Midpoints from coords and extend to finding end points given midpoint	• Labelling sides and introducing SOHCAHTOA	Investigating where ratios come from in right-angled triangles	• Solving simultaneous equations from graphs	Linear only	• Recap unitary method	Includes contextual problems	**Module 18: Constructions & Loci**	
• Reverse percentages	Includes contextual problems	• Length of a line segment	Use of Pythagoras from diagrams and coordinates	• Use trigonometry to find missing sides of triangles	Unknown in numerator only	**Module 12: Surface Area & Volume**		• Recap direct proportion - recipes	Recipes including FDPR	• Construct a perpendicular bisector	Isolated skill only
• Successive percentage change (Growth & Decay)	Contextual problems including a mixture of increase and decrease in the same question.	• Gradient of a line segment, parallel line segments	From diagrams and coordinates	• Use trigonometry to find missing sides of triangles	Unknown in denominator inc. ratio	• Recap volume of prisms	Can include cross topic links e.g. Pythagoras	• Recap direct proportion best buys	Best Buys including FDPR	• Construct an angle bisector	Isolated skill only
• Compound interest (just forward)	Single problems (**doesn't include** choice of investment)	**Module 6: Linear Graphs**		• Use trigonometry to find missing angles	In right-angled triangles only	• Recap volume of cylinders	Can include unit changes, decimals and fractions and working in terms of π	• Solve problems with currency conversion	Exchange rates including multi-step and abstract problems	• Construct loci	Includes isolated skills e.g. running track or telephone mast coverage
Module 3: Indices & Standard Form		• Recap drawing straight lines (y = mx + c)	Positive and negative gradients	• Solve multi-step problems involving Pythagoras and trig	Two or more triangles joined together	• Recap surface area of prisms	Can include cross topic links e.g. Pythagoras	**Module 15: Compound Measures**		• Real life problems with loci and scale	Includes multi-step problems
• Index laws for multiplication	e.g. $3x^5\times4x^7$ top set - extend to solve equations	• Drawing different representations of a straight-line	$ax+by=c$	• Exact trig values	Recalling and performing simple calculations not involving surds as well as finding sides and angles.	• Recap surface area of cylinders	Can include unit changes, decimals and fractions and working in terms of π	• Recap of speed distance and time calculations	Calculate speed, distance and time for single journeys (Non-contextual)		
• Index laws for division	e.g. $8x^5\div4x^7$ top set - extend to solve equations	• Finding the equation of a parallel line through a point	Gradient given and a point	• Area problems involving Pythagoras and trigonometry	e.g. Area of trapezia where an angle is given and need the height	• Volume of spheres and hemispheres	Can include unit changes, decimals and fractions and working in terms of π	• Calculating speed with two-part journeys or more complex problems	Two-part journeys or more complex problems		
• Index laws - raising a power to a power	e.g. $(2x^4)^6$	• Perpendicular line segments including geometric problems	Identifying and drawing perpendicular lines			• Surface area of spheres and hemispheres	Can include unit changes, decimals and fractions and working in terms of π	• Speed from distance-time graphs	Speed only by interpreting the graph.		

	• Index laws - zero power and negative indices	Integers or fractions, not algebra	• Finding the equation of a perpendicular line through a point	Gradient given and a point			• Volume of cones	Can include unit changes, decimals and fractions and working in terms of π	• Convert between different units of speed	e.g. Km/hr to m/s		
	• Index laws - fractional powers	Integers or fractions, not algebra	**Module 7: Accuracy & Bounds**				• Surface area of cones	Can include unit changes, decimals and fractions and working in terms of π	• Density, mass, volume	Basic calculations (not multistage)		
	• Recap converting numbers to and from standard form	Including positive and negative powers	• Error intervals	Integers and decimals included					• Force, pressure & area (basic calculations)	Basic calculations (not multistage)		
	• Multiplying in standard form (Non-Calc)	Including positive and negative powers	• Finding bounds of calculations	Simple calculations e.g. UB of 10 × 4 numbers being rounded to 1 sig fig								
	• Dividing in standard form (Non-Calc)	Including positive and negative powers	• Calculating to a suitable degree of accuracy	For simple calculations only								
	• Adding and subtracting in standard form (Non-Calc)	Including positive and negative powers	• Truncation	Integers and decimals included								

Year 10 Foundation Overview & Module Breakdown

HT/WK	1	2	3	4	5	6	7
Aut 1	INSET	Indices and Accuracy		Expressions & Equations	Ratio & Proportion		Re-teach
Aut 2	Perimeter & Area	Percentages		Probability			Mid-year exam prep

Spr 1	Compound Measures	Circles	3D Geometry	Re-teach
Spr 2	Linear Graphs	Pythagoras & Trigonometry	Transformations	Re-teach
Sum 1	Statistics	Inequalities	Fractions	Re-teach
Sum 2	Quadratics	EOY Exam	Sequences	Angles	Re-teach

Module Breakdown with Associated Knowledge

Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Module 1: Index Laws and Accuracy		**Module 4: Perimeter & Area**		**Module 7: Compound Measures**		**Module 10: Linear Graphs**		**Module 13: Statistics**		**Module 16: Quadratics**	
• Identify factors, multiples and primes	Identify and listing	• Perimeter of rectangles and triangles	Can include unit changes, decimals and fractions as well as contextual problems	• Calculations with time in context	e.g. converting hours and minutes into decimals of an hour	• Plotting straight lines	No rearranging to plot	• Recap of finding mean, mode, median and range and comparing data sets	Averages from a list and compare data sets to establish the best average	• Recap of expanding double brackets	e.g $(x+3)(2x-4)$
• Prime factorisation	Use factor trees to express integers as a product or its prime factors.	• Perimeter of parallelograms, trapezia and compound shapes	Can include unit changes, decimals and fractions as well as contextual problems	• Speed, distance, time problems	Calculate speed, distance and time for single journeys (contextual)	• Plotting straight lines	Including rearranging to plot	• Complete, interpret and compare pictograms	Construct and interpret	• Recap of factorising a linear expression	e.g. $4x(x-1)$ relate to area
• HCF using prime factors - Venn	Use a Venn diagram to find the HCF of 2 integers	• Area of rectangles and triangles	Can include unit changes, decimals and fractions as well as contextual problems	• Interpreting a distance-time graph	Calculating speed, and other basic interpretations e.g. how long stopped for	• Length of a line segment	Use of Pythagoras from diagrams and coordinates	• Complete and interpret bar charts including composite bar charts	Construct and interpret	• Factorising quadratics	e.g. x^2-x-6
• LCM using prime factors - Venn	Use a Venn diagram to find the LCM of 2 integers	• Area of parallelograms and trapezia	Can include unit changes, decimals and fractions as well as contextual problems	• Interpreting a velocity-time graph	Calculating speed, and other basic interpretations e.g. constant speed	• Midpoint of a line segment	Midpoints from coords and extend to finding end points given midpoint	• Construct a stem & leaf diagram	Single stem and leaf diagram. Include decimals and place value to 100's	• Difference of two squares	e.g. x^2-16
• Identify and calculate with powers and roots	Calculations involving different powers and roots up to nth root.	• Area of compound shapes	Triangles, rectangles, parallelograms and trapezia	• Density, mass and volume	Including cross topic e.g. volume of cubes	• Identify the gradient and y intercept of a line from an equation	From an equation	• Complete and interpret frequency polygons	Given a continuous frequency table	• Solving quadratics by factorising	e.g. $x^2-x-6=0$
• Recap of index laws: division and multiplication	Includes combined multiplication and division problems	**Module 5: Percentages**		• Force, pressure and area	Including cross topic e.g. area of face	• Calculate the gradient of a line	From a graph and two coordinates	• Produce and interpret line graphs including time series	Construct and interpret	• Plotting quadratics and identifying the line of symmetry	Plotting, and identify lines of symmetry from table of values and graphs
• Recap of index laws: power to a power and negative powers	e.g. $(2x^4y)^6$	• Convert between fractions, decimals and percentages	e.g. 60% = $\frac{3}{5}$ Fractions in their simplest form.	**Module 8: Circles**		• Write the equation of a straight line from a graph	From a graph	• Recap of drawing pie charts	With circle already drawn and frequency table given	• Interpreting to identify roots, turning points and intercepts	Turning points, roots and intercepts
• Rounding and truncating	Integers and decimals included	• Percentage change and profit	Worded problems	• Area and Circumference of circles	Calculator and in terms of π	• Parallel lines	Gradient given and a point	• Recap of interpreting pie charts	Angles fully or partially given. Use of proportion.	• Solve equations graphically	Between a quadratic and a linear equation
• Estimation, including estimating roots & contextual problems	Cross topic problems included.	• Find percentage of an amount with a calculator using multipliers	Use of multipliers including context	• Finding the radius or diameter given the area or circumference	Calculator and in terms of π	• Perpendicular lines	Gradient given and a point	• Calculating the mean from a frequency table	Discrete frequency table	**Module 17: Sequences**	
• Error intervals including truncation	Integers and decimals included	• Find percentage increase and decrease with a calculator using multipliers	Use of multipliers including context	• Perimeter and area of semi-circles and quarter circles	Calculator and in terms of π	**Module 11: Pythagoras & Trigonometry**		• Estimating the mean from grouped data	Continuous data (grouped)	• Arithmetic sequences revision	Finding nth term, substitution and is term in sequence
Module 2: Expressions and Equations		• Best buy problems with % increase and decrease	Use of multipliers including context	• Arc length	Using $\frac{\emptyset}{360}$ where Ø can be any angle in a minor segment	• Recap of Pythagoras basics	Includes decimal answers and rounding to decimal places or sig fig.	• Problem solving with averages	e.g. 5 numbers and given various averages. Work out the numbers	• Term-to-term rule problems (exam questions)	Includes numbers and patterns
• Substitution into formulae - include exam problems	Includes integers, decimals and negatives and powers	• Reverse percentage problems	Use of multipliers including context	• Sector area	Using $\frac{\emptyset}{360}$ where Ø can be any angle in a minor segment	• Recap of Pythagoras including contextual problems	e.g. circles with a triangle in to find the diameter.	• Problem solving with averages	Reverse mean	• Geometric and Fibonacci sequences	Recognition and continuation
• Expand and simplify (single brackets) in context	e.g. $2x(x+1)$ relate to area and perimeter	• Compound interest and depreciation	Choice of investment	**Module 9: 3D Geometry**		• Trigonometry - finding missing sides	Includes decimal answers and rounding to decimal places or sig fig.	• Scatter graphs and lines of best fit	Stating correlation and relationship & using line of best fit to estimate values	• Quadratic sequences	Recognition and continuation
• Factorise (single brackets) in context	e.g. $4x(x-1)$ relate to area	• Simple interest	Combines compound interest and simple interest problems	• 3D shapes and planes of symmetry	Names of common 3D shapes and planes of symmetry	• Trigonometry - finding missing angles	Includes decimal answers and rounding to decimal places or sig fig.	**Module 14: Inequalities**		**Module 18: Angles**	
• Recap - solving one and two-step equations revision including brackets	Answers can be fractions, negatives or decimals	• Repeated percentage change	Contextual problems including a mixture of increase and decrease in the same question.	• Plans and elevations including nets	Plans and elevations of 3D solids	• Exact trig values	Recalling and performing simple calculations not involving surds as well as finding sides and angles.	• Inequalities and number lines	Write the inequality and draw it on a number line (single and double)	• Recap basic angles rules (line, point, vertically opposite)	Problems including ratio
Module 3: Ratio & Proportion		**Module 6: Probability**		• Volume of prisms	Can include unit changes, decimals and fractions	• Multi-step problems involving Pythagoras and trigonometry	Two or more triangles joined together	• Solve linear inequalities	e.g. $2(x+5) \geq 1$	• Recap basic angles rules (triangles inc. multi-step)	Problems including ratio
• Writing as a ratio and simplifying	Includes worded problems as well as standard calculations	• Theoretical probability	General recap of single event probability including 'not' events.	• Volume of cylinders	Can include unit changes, decimals and fractions and working in terms of π	**Module 12: Transformations**		• Solve double inequalities	e.g. $-4 < 2x+1 \leq 7$	• Angles in parallel lines	Problems including ratio

	• Writing ratios in the form 1 : n and n : 1	Includes worded problems as well as standard calculations	• Probabilities from two-way tables	Two-way tables	• Surface area of prisms	Can include unit changes, decimals and fractions	• Translation	Use of vectors and describing	• Solve inequalities by adding x values to both sides	e.g. $2x + 1 \leq x + 2$	• Angles in polygons (interior and exterior)	Problems including ratio
	• Use ratios to share a total	Includes worded problems as well as standard calculations	• Systematic listing and probability	Listing all outcomes for two events	• Surface area of cylinders	Can include unit changes, decimals and fractions and working in terms of π	• Reflection	Use of equations and describing	**Module 15: Fractions**		• Angles in polygons (two or more polygons attached)	Problems including ratio
	• Solve "more" problems using ratios	Can be a two- or three-part ratio	• Venn diagrams - constructing	Including problems with ratio, percentages etc	• Spheres and cones	Can include unit changes, decimals and fractions and working in terms of π	• Rotation	On axes and describing	• Recap adding and subtracting fractions with mixed numbers	Both calc and non-calc		
	• Combining ratios	Combining two 2-part ratios to form a single 3-part ratio	• Probabilities, regions and set notation from Venn diagrams	Including notation e.g. $P(A' \cap B)$			• Enlargement positive SF	On axes and with centre including describing	• Fractional operations - adding and subtracting (cross topic context)	Cross topic context		
	• Ratio problems and geometry	Length, Perimeter, Area and Volume	• Probabilities from frequency trees	Calculating probabilities from frequency trees			• Enlargement fractional SF	On axes and with centre including describing	• Recap multiplying and dividing fractions with mixed numbers	Both calc and non-calc		
	• Proportion - unitary method and recipes	Recipes including FDPR	• Relative frequency	Worded problems and tables			• Combined transformations	Two or more transformations in the same problem	• Fractional operations - multiplying and dividing	Cross topic context		
	• Proportion - best buys	Best Buys including FDPR	• Drawing tree diagrams	Worded problems involving fractions, decimals and ratio			• Describing transformations	Mixed – describing all transformations using full mathematical descriptions				
			• Tree diagrams - independent events	Independent events								
			• Tree diagrams - dependent events	Dependent events								

Year 10 Lower Higher Overview & Module Breakdown

HT/WK	1	2	3	4	5	6	7
Aut 1	INSET	Fractions	Percentages	Indices	Standard Form	Sequences	Re-teach
Aut 2	Quadratics		Ratio & Proportion		Rounding & Accuracy	Probability	Mid-year exam prep
Spr 1	Equations & Formulae	Perimeter & Area	Pythagoras & Trig	Compound Measures		Re-teach	
Spr 2	Circles	3D Geometry		Inequalities	Angles		Re-teach

Sum 1	Statistics		Transformations		Re-teach
Sum 2	Graphs	EOY Exam	Surds	Vectors	Re-teach

Module Breakdown with Associated Knowledge

Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Module 1: Fractions		**Module 6: Quadratics**		**Module 10: Equations & Formulae**		**Module 14: Circles**		**Module 18: Statistics**		**Module 20: Graphs**	
• Fraction of an amount including finding the original amount	Includes worded problems	• Recap solving linear equations including fractional	e.g. $2(x+1)=x-3$	• Rearranging formulae, one and two-step	e.g. Make g the subject $4g-p=s$	• Area and Circumference of circles	Calculator and in terms of π	• Calculating the mean from a frequency table	Discrete frequency table including finding a missing frequency given the mean	• Plotting straight lines	Including rearranging to plot
• Convert between fractions, decimals and percentages	e.g. $0.2=\frac{1}{5}=20\%$ Fractions in their simplest form.	• Recap forming and solving linear equations	Cross topic links e.g. area & perimeter	• Rearranging formulae, including powers and roots	e.g. Make g the subject $4g^2-p=t^2$	• Finding the radius or diameter given the area or circumference	Calculator and in terms of π	• Estimating the mean from grouped data	Continuous data (grouped)	• Length of a line segment	Use of Pythagoras from diagrams and coordinates
• Recurring decimal to fractions	Single fraction. Up to one number not recurring and two or more that are.	• Plot quadratics	Positive and negative coefficients of x^2	• Solve linear simultaneous equations with scaling	Scaling	• Perimeter and area of semi-circles and quarter circles	Calculator and in terms of π	• Complete and interpret frequency polygons	Given a continuous frequency table	• Midpoint of a line segment	Midpoints from coords and extend to finding end points given midpoint
• Recurring decimal to fractions advanced problems	e.g. Addition of two recurring decimals	• Plot quadratics and identify key properties	Turning points, roots and intercepts	• Solve linear simultaneous equations with scaling and rearranging	Scaling & rearranging	• Arc length	Using $\frac{\emptyset}{360}$ where Ø can be any angle in a minor segment	• Recap of interpreting pie charts	Angles fully or partially given. Use of proportion. Includes ratio	• Identify the gradient and y intercept of a line from an equation	From an equation
Module 2: Percentages		• Expand double brackets	e.g $(x+3)(2x-4)$	• Form and solve linear simultaneous equations	Worded problems only	• Sector area	Using $\frac{\emptyset}{360}$ where Ø can be any angle in a minor segment	• Construct cumulative frequency curves	Continuous data (grouped)	• Calculate the gradient of a line	From a graph and two coordinates
• Percentage increase and decrease with multipliers	Use of multipliers including context	• Expand triple brackets	e.g $(x+3)(2x-4)(x+2)$	**Module 11: Perimeter & Area**		**Module 15: 3D Geometry**		• Interpret cumulative frequency curves	Median & IQR and other basic interpretations including cross topic e.g. percentages	• Write the equation of a straight line from a graph	From a graph
• Percentage increase and decrease with multipliers inc. best buys	Use of multipliers including context	• Factorise when a = 1	e.g. x^2-x-6	• Recap perimeter of 2D shapes including compound shapes	Triangles, rectangles, parallelograms and trapezia	• Plans and elevations	Plans and elevations of 3D solids	• Construct box plots	From a line of numbers, table and from a CF graph	• Parallel lines & perpendicular lines	Gradient given and a point
• Reverse percentages	Use of multipliers including context	• Factorise (difference of two squares)	e.g. x^2-16	• Area of rectangles and triangles	Standard, ratio and algebra	• Volume of prisms	Can include unit changes, decimals and fractions and cross topic e.g. Pythagoras	• Interpret box plots	Basic interpretations e.g. percentages and identifying LQ etc	• Plotting quadratics and identifying the line of symmetry	Plotting, and identify lines of symmetry from table of values and graphs
• Compound interest	Including finding missing n values and original amount	• Solving quadratics by factorising	e.g. $x^2-x-6=0$	• Area of parallelograms and trapezia	Standard, ratio and algebra	• Volume of cylinders	Can include unit changes, decimals and fractions and working in terms of π	• Construct a histogram	Continuous data (grouped) No scaling of FD	• Interpreting to identify roots, turning points and intercepts	Turning points, roots and intercepts
• Compound interest problems	Choice of investment	• Solving quadratics by using the quadratic formula	Including cross topic problems	• Area of compound shapes	Standard, ratio and algebra	• Volume of spheres	Can include hemispheres and working in terms of π	• Scatter graphs and their interpretation	Completing, outliers and stating correlation and relationship	• Solve equations graphically	Between a quadratic and a linear equation
• Repeated percentage change	Two or more changes in the same problem	**Module 7: Ratio & Proportion**		**Module 12: Pythagoras & Trigonometry**		• Volume of pyramids and cones	Can include unit changes, decimals and fractions and working in terms of π	• Lines of best fit - interpolating and extrapolating	Using line of best fit to estimate values	**Module 21: Surds**	
• Simple interest and compound interest problems	Combined problems	• Use ratios to share a total	Includes worded problems as well as standard calculations	• Pythagoras in 2D	Including using to find area of trapezium	• Surface area of prisms	Can include unit changes, decimals and fractions	• Stratified sampling	Worded problems and from a table	• Simplify a surd	e.g. simplify $\sqrt{75}$ or $2\sqrt{8}\times\sqrt{5}$
Module 3: Indices		• Solve "more" problems using ratios	Can be a two- or three-part ratio	• SOHCAHTOA	Missing sides and angles	• Surface area of cylinders	Can include unit changes, decimals and fractions and working in terms of π	**Module 19: Transformations**		• Add, subtract, multiply and divide and simplify surds	e.g. $\sqrt{8}+3\sqrt{2}$
• Recap of index laws	Multiplying, dividing, raising to a power	• Combining ratios	Combining two 2-part ratios to form a single 3-part ratio	• Exact trig values	Recalling and performing simple calculations not involving surds as well as finding sides and angles.	• Surface area of spheres	Can include unit changes, decimals and fractions and working in terms of π	• Translation	Use of vectors and describing	**Module 22: Vectors**	
• More complex index laws combining operations	Combines all basic laws in one problem	• Ratio problems involving FDP	Worded problems and cross topic links	**Module 13: Compound Measures**		• Surface area of pyramids and cones	Can include unit changes, decimals and fractions and working in terms of π	• Reflection	Use of equations and describing	• Column vectors and diagrammatic representations	Creating diagrammatic representations of column vectors
• Negative and fractional indices	e.g. $25^{-\frac{3}{2}}$	• Proportion - unitary method and recipes	Recipes including FDPR	• Speed, distance, time	Calculate speed, distance and time for single journeys (contextual)	**Module 16: Inequalities**		• Rotation	On axes and describing	• Column vector arithmetic	Arithmetic with column vectors which also includes in reverse
Module 4: Standard Form		• Proportion - best buys	Best Buys including FDPR	• Multi-part journeys	Calculate speed, distance and time (contextual)	• Inequalities and number lines	Write the inequality and draw it on a number line (single and double)	• Enlargement positive SF	On axes and with centre including describing	• Column vector arithmetic reverse including simultaneous equations	e.g. $3\begin{pmatrix}2p\\7p\end{pmatrix}+\begin{pmatrix}4q\\-q\end{pmatrix}=\begin{pmatrix}-1\\6\end{pmatrix}$
• Recap standard form conversions	Including positive and negative powers	**Module 8: Rounding & Accuracy**		• Interpreting a distance-time graph	Calculating speed, and other basic interpretations e.g. how long stopped for	• Solve linear inequalities	e.g. $2(x+5)\geq 1$	• Enlargement fractional SF	On axes and with centre including describing		
• Recap standard form arithmetic (multiplying and dividing)	Including positive and negative powers including cross topic problems	• Rounding and truncating	Integers and decimals included	• Change of units	e.g. Km/hr to mph	• Solve double inequalities	e.g. $-4<2x+1\leq 7$	• Enlargement negative SF	On axes and with centre including describing		

	• Recap standard form arithmetic (adding and subtracting)	Including positive and negative powers including cross topic problems	• Estimation, including estimating roots	Standard calculations only	• Density, mass and volume	Including cross topic e.g. volume of cubes	• Solve inequalities by adding x values to both sides	e.g. $2x + 1 \leq x + 2$	• Combined transformations	Two or more transformations in the same problem		
	Module 5: Sequences		• Estimation, including contextual problems	Cross topic problems included.	• Force, pressure and area	Including cross topic e.g. area of face	**Module 17: Angles**		• Describing transformations	Mixed – describing all transformations using full mathematical descriptions		
	• Recap nth term of a linear sequence	Positive and negative values of n	• Error intervals including truncation	Integers and decimals included			• Recap basic angles rules	Problems including ratio				
	• Recognise and continue geometric sequences	Don't find nth term	**Module 9: Probability**				• Angles in parallel lines	Problems including ratio				
	• Further geometric sequences	Continuation of the sequence only	• Theoretical vs experimental probability	General recap of single event probability including 'not' events.			• Angles in polygons (interior and exterior)	Problems including ratio				
	• Recognise and continue quadratic sequences	Up to the form $an^2 + bn + c$	• Expected outcomes and probabilities summing to 1	From tables including algebra and ratio			• Angles in polygons (two or more polygons attached)	Problems including ratio				
	• Quadratic sequences nth term	Up to the form $an^2 + bn + c$	• Relative frequency	Worded problems and tables								
			• Venn diagrams - constructing, including questions with FDP	Including problems with ratio, percentages etc								
			• Interpreting Venn diagrams with set notation	Including notation e.g. $P(A' \cap B)$								
			• Frequency trees	Calculating probabilities from frequency trees								
			• Tree diagrams - independent events	Independent events								

Year 10 Upper Higher Overview & Module Breakdown

HT/WK	1	2	3	4	5	6	7
Aut 1	INSET	Fractions	Percentages	Indices	Standard Form	Sequences	Re-teach
Aut 2	Quadratics		Ratio & Proportion		Rounding & Accuracy	Probability	Mid-year exam prep
Spr 1	Equations & Formulae		Perimeter & Area	Pythagoras & Trig	Compound Measures	Re-teach	
Spr 2	Surds	Circles	3D Geometry		Graphs	Re-teach	
Sum 1	Statistics			Inequalities	Transformations	Re-teach	

Sum 2	Angles	Further Trig	EOY Exam	Advanced Accuracy	Similarity & Congruence	Re-teach

Module Breakdown with Associated Knowledge

Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Module 1: Fractions		**Module 5: Quadratics**		**Module 9: Equations & Formulae**		**Module 13: Surds**		**Module 17: Statistics**		**Module 20: Angles**	
• Fraction of an amount including finding the original amount	Includes worded problems	• Plot quadratics and identify key properties	Positive and negative coefficients of x^2 Turning points, roots and intercepts	• Recap rearranging formulae, including powers and roots	e.g. Make g the subject $4g^2 - p = t^2$	• Add, subtract, multiply and divide and simplify surds	e.g. simplify $\sqrt{75}$ or $2\sqrt{8} \times \sqrt{5}$	• Calculating the mean from a frequency table	Discrete frequency table including finding a missing frequency given the mean	• Angles in parallel lines	Problems including ratio
• Convert between fractions, decimals and percentages	e.g. 0.2 = $\frac{1}{5} = 20\%$ Fractions in their simplest form.	• Expand triple brackets	e.g $(x+3)(2x-4)(x+2)$	• Rearranging formulae, including factorising	e.g. Make g the subject $4g^2 - p = gt^2$	• Expand and simplify surds	e.g. $(\sqrt{8}+5)(2\sqrt{2}+7)$	• Estimating the mean from grouped data	Continuous data (grouped)	• Angles in polygons	Interior and exterior including ratio
• Recurring decimal to fractions	Single fraction. Up to one number not recurring and two or more that are.	• Factorise when a = 1 including DOTS	e.g. $x^2 - x - 6$	• Solve linear simultaneous equations with scaling and rearranging	Scaling & rearranging	• Rationalise denominator (simpler)	e.g. $\frac{3}{2\sqrt{8}}$	• Complete and interpret frequency polygons	Given a continuous frequency table	• Angles in polygons	Two or more polygons attached including ratio
• Recurring decimal to fractions advanced problems	e.g. Addition of two recurring decimals	• Factorise when a > 1	e.g. $2x^2 - 5x - 3$	• Form and solve linear simultaneous equations	Worded problems only	• Rationalise denominator (more complex)	e.g. $\frac{3}{2\sqrt{8}+5}$	• Recap of interpreting pie charts	Angles fully or partially given. Use of proportion. Includes ratio	**Module 21: Further Trigonometry**	
Module 2: Percentages		• Solving quadratics by factorising	e.g. $x^2 - x - 6 = 0$	• Solve linear and quadratic simultaneous equations	Substitution method & rearranging could be needed	**Module 14: Circles**		• Construct cumulative frequency curves	Continuous data (grouped	• Sine rule - missing sides	Missing sides
• Percentage increase and decrease with multipliers	Use of multipliers including context	• Solving quadratics by using the quadratic formula	Including cross topic problems	**Module 10: Perimeter & Area**		• Area and Circumference of circles	including finding radius or diameter given the area or circumference. Calculator and in terms of π	• Interpret cumulative frequency curves (median & IQR)	Median & IQR and other basic interpretations including cross topic e.g. percentages	• Sine rule - missing angles	Missing angles
• Percentage increase and decrease with multipliers inc best buys	Use of multipliers including context	• Complete the square	Up to $a(x+b)^2 + c$	• Recap area & perimeter of 2D shapes including compound shapes	Triangles, rectangles, parallelograms and trapezia	• Perimeter and area of semi-circles and quarter circles	Calculator and in terms of π	• Construct box plots	From a line of numbers, table and from a CF graph	• Sine rule - ambiguous case	SSA leading to more than one possible triangle
• Reverse percentages	Use of multipliers including context	• Complete the square to find turning point	From the completed square form only	• Area of parallelograms and trapezia including compound shapes	Standard, ratio and algebra	• Arc length	Using $\frac{\emptyset}{360}$ where Ø can be any angle in a minor segment	• Interpret box plots	Basic interpretations e.g. percentages and identifying LQ etc	• Cosine rule - missing sides	Missing sides
• Compound interest (including finding missing n values and original amount)	Including finding missing n values and original amount	• Sketch quadratics including roots, intercept and turning point	Positive and negative coefficients of x^2	• Area involving algebra and quadratics	Compound shapes	• Sector area	Using $\frac{\emptyset}{360}$ where Ø can be any angle in a minor segment	• Construct a histogram	Continuous data (grouped) No scaling of FD	• Cosine rule - missing angles	Missing angles
• Compound interest problems (choice of investment)	Choice of investment	**Module 6: Ratio & Proportion**		**Module 11: Pythagoras & Trigonometry**		• Combined arc length and sector area problems	Using $\frac{\emptyset}{360}$ where Ø can be any angle in a minor segment	• Interpret and solve problems with histograms	Cross topic including ratio and algebra	• Area rule	Non-right-angled triangle. Can include sine or cosine rule
• Repeated percentage change	Two or more changes in the same problem	• Combining ratios	Combining two 2-part ratios to form a single 3-part ratio	• Pythagoras in 2D (including using to find area of trapezium)	Including using to find area of trapezium	**Module 15: 3D Geometry**		• Estimate the mean and median from a histogram	Averages from histograms	**Module 22: Advance Accuracy**	
• Simple interest and compound interest problems	Combined problems	• Ratio problems involving FDP	Worded problems and cross topic links	• Pythagoras in 3D	Cross topic links e.g. cuboids	• Plans and elevations	Plans and elevations of 3D solids	• Scatter graphs and their interpretation	Completing, outliers and stating correlation and relationship	• Recap error intervals including truncation	Integers and decimals included
Module 3: Indices		• Direct proportion equations (including powers and roots)	Including powers and roots	• Trigonometry - finding missing sides and angles	Missing sides and angles	• Volume of prisms	Can include unit changes, decimals and fractions and cross topic e.g. Pythagoras	• Capture re-capture	Worded problems	• Upper and lower bounds of real-life problems	Cross topic problems
• Recap of index laws (multiplying, dividing, raising to a power)	Multiplying, dividing, raising to a power	• Inverse proportion equations (including powers and roots)	Including powers and roots	• Exact trig values	Recalling and performing simple calculations not involving surds as well as finding sides and angles.	• Volume of cylinders	Can include unit changes, decimals and fractions and working in terms of π	• Stratified sampling	Worded problems and from a table	• Upper and lower bounds cross topic problems	Cross topic problems
• More complex index laws combining operations	Combines all basic laws in one problem	• Combining direct and inverse proportion equations	Including powers and roots	• Trigonometry in 3D	Cross topic links e.g. cuboids	• Volume of spheres, pyramids and cones	Can include unit changes, decimals and fractions and working in terms of π	**Module 18: Inequalities**		**Module 23: Similarity & Congruence**	
• Negative and fractional indices	e.g. $25^{-\frac{3}{2}}$	**Module 7: Rounding & Accuracy**		**Module 12: Compound Measures**		• Volume of composite 3D shapes	Can include unit changes, decimals and fractions and working in terms of π	• Inequalities and number lines	Write the inequality and draw it on a number line (single and double)	• Congruency proofs	using SSS, SAS, ASA and RHS criteria
Module 4: Standard Form		• Rounding and truncating	Integers and decimals included	• Multi-part journeys	Calculate speed, distance and time (contextual)	• Surface area of prisms	Can include unit changes, decimals and fractions	• Solve linear inequalities	including double inequalities & unknowns on both sides	• Similar shapes (missing sides)	Missing sides
• Recap standard form conversions	Including positive and negative powers	• Estimation, including estimating roots	Standard calculations only	• Interpreting a distance-time graph	Calculating speed, and other basic interpretations e.g. how long stopped for	• Surface area of cylinders	Can include unit changes, decimals and fractions and working in terms of π	• Quadratic inequalities	Simultaneous	• Similar shapes (length, area and volume scale factors)	LAV SF and switching between the two in contextual problems
• Recap standard form arithmetic (multiplying and dividing)	Including positive and negative powers including cross topic problems	• Estimation, including contextual problems	Cross topic problems included.	• Change of units	e.g. Km/hr to mph	• Surface area of spheres, pyramids and cones	Can include unit changes, decimals and fractions and working in terms of π	• Regions	Vertical, horizontal, linear equations including rearranging.	• Similar shapes (length, area and volume scale factors) including ratios	LAV SF and switching between the two in contextual problems including ratio

	• Recap standard form arithmetic (adding and subtracting)	Including positive and negative powers including cross topic problems	• Error intervals including truncation	Integers and decimals included	• Density, mass and volume	Including cross topic e.g. volume of cubes	• Surface area of composite 3D shapes	Can include unit changes, decimals and fractions and working in terms of π	**Module 19: Transformations**			
	Module 5: Sequences		**Module 8: Probability**		• Force, pressure and area	Including cross topic e.g. area of face	**Module 16: Graphs**		• Translation and reflection	Use of vectors, Use of equations and describing		
	• Recap nth term of a linear sequence	Positive and negative values of n	• Recap basic probability including from tables and frequency tress	General recap of single event probability including 'not' events.			• Plotting straight lines	Including rearranging to plot	• Rotation	On axes and describing		
	• Recognise and continue geometric sequences (don't find nth term)	Don't find nth term	• Relative frequency	Worded problems and tables			• Calculate the gradient of a line	From a graph and two coordinates	• Enlargement (positive/fractional scale factors)	On axes and with centre including describing		
	• Further geometric sequences	Continuation of the sequence only	• Probability of successive events including list outcomes	Worded problems with two or more events			• Write the equation of a straight line from a graph	From a graph	• Enlargement (negative scale factors)	On axes and with centre including describing		
	• Recognise and continue quadratic sequences	Up to the form $an^2 + bn + c$	• Venn diagrams - constructing, including questions with FDP	Including problems with ratio, percentages etc			• Parallel lines & perpendicular lines	Gradient given and a point or two coordinates				
	• Quadratic sequences nth term	Up to the form $an^2 + bn + c$	• Interpreting Venn diagrams with set notation	Including notation e.g. $P(A' \cap B)$								
			• Venn diagrams - using algebra	Use of algebra								
			• Tree diagrams - independent events	Independent events								
			• Tree diagrams - dependent events	Dependent events								
			• Tree diagrams - forming a quadratic	Use of algebra								

Year 11 **LEGACY** All Tiers Overview & Module Breakdown

Lower Higher tier

The Lower Higher tier curriculum has been refined for the final year of this legacy curriculum. Topics beyond grade 6, which sit within the Upper Higher curriculum, have been removed and replaced with high-leverage content to strengthen retrieval and revision. QLA outcomes should also inform planning. Full details of the Year 11 Pathway Strategy are available on the Portal.

	FOUNDATION		**LOWER HIGHER**		**UPPER HIGHER**	
	Autumn 1		**Autumn 1**		**Autumn 1**	
Module Breakdown with Associated Knowledge	**Module 23: Vectors**		**Module 1: Revision**		**Module 25: Vectors**	
	• Column vectors and diagrammatic representations	Creating diagrammatic representations of column vectors	• Parallel Lines & Triangles	Including basic angle facts	• Vector notation	Creating diagrammatic representations of column vectors
	• Column vector arithmetic	Arithmetic with column vectors which also includes in reverse	• Sum of Interior angles	Proving and using the sum formula	• Resultant vectors	Arithmetic with column vectors which also includes in reverse

Module 24: Polygons		• Interior angles	One or more polygons stuck together	• Vector midpoints	Basic problems
• Parallel Lines & Triangles	Including basic angle facts	• Exterior angles	One or more polygons stuck together	• Vector ratios	Including 1 : n
• Sum of Interior angles	Proving and using the sum formula	• **Trigonometry – Side**	Basic right-angled triangle including multi-step problems	• Collinear vectors	Proving two or more vectors are collinear
• Interior angles	One or more polygons stuck together	• **Trigonometry – Angle**	Basic right-angled triangle including multi-step problems	• Geometric proof using vectors	Use of all aspects of vectors including algebra to prove a statement.
• Exterior angles	One or more polygons stuck together	• **Prime Factorisation & HCF/LCM**	Calculator and non-calculator methods involving Venn Diagrams	**Module 26: Angles in Polygons**	
Module 25: Bearings		• Area of Trapezium	Basic and reverse problems	• Angle Facts	Parallel lines and triangles
• Draw and measure bearings	Including vectors that go beyond 180 degrees	• **Area of Circle problems**	including finding radius or diameter given the area or circumference. Calculator and in terms of π	• Sum of Interior	Proving and using the sum formula
• Calculate bearings	Including vectors that go beyond 180 degrees	• **Area of Non-right-angled triangle**	Basic problems only using the formula.	• Exterior angles	One or more polygons stuck together
• Solve problems with bearings	Involving parallel lines	• Venn Diagrams & Set Notation	Two and three circle Venn's.	**Module 27: Circle Theorems**	
Module 26: Congruence		• Probability – Venn & Tables	Two and three circle Venn's.	• Angle at the centre and circumference	Incorporates other angle rules and proofs of the circle theorems
• Identify congruent triangles	using SSS, SAS, ASA and RHS criteria	• Probability – Tree Diagrams	Independent events only.	• right-angle in a semi-circle & same segment	Incorporates other angle rules and proofs of the circle theorems
• Prove triangles are congruent	using SSS, SAS, ASA and RHS criteria	• Reflect & Translate	Performing and describing	• Cyclic quadrilateral	Incorporates other angle rules and proofs of the circle theorems
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Rotate	Performing and describing	• Tangent to radius & problems	Incorporates other angle rules and proofs of the circle theorems
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Enlargements (Pos & Fractional)	Performing and describing	• Alternate segment	Incorporates other angle rules and proofs of the circle theorems
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Inequalities	Representing on a number line and reading from a number line	• Mixed problems	Incorporates other angle rules and proofs of the circle theorems
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Error Intervals	Rounding and truncating	**Module 28: Bearings**	
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• **Standard Form Conversions**	Including positive and negative powers	• Calculate bearings	Including vectors that go beyond 180 degrees
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• **Standard Form Arithmetic**	Including positive and negative powers including cross topic problems	• Solve problems with bearings	Involving parallel lines
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	**Module 29: Congruence**	
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Identify pairs of congruent triangles	using SSS, SAS, ASA and RHS criteria
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Prove triangles are congruent in complex diagrams	using SSS, SAS, ASA and RHS criteria

Module Breakdown with Associated Knowledge

FOUNDATION

Autumn 2

Module 27: Linear Graphs

• Coordinates and midpoint of a line	Both graphically and coordinates only
• Straight line graphs from linear equations	Drawing the graphs
• Equation of a straight line	Identify the gradient and y-intercept for straight line graphs
• Equation of a straight line	Identify the equation of a linear graph ($y = mx + c$)
• Finding the equation of straight line algebraically	Identify the equation of a line given one or two co-ordinates
• Parallel lines	Work out the equation of lines parallel to a given equation

Module 28: Linear Inequalities

• Solving simple inequalities	Solve simple 1 and 2-step equations
• Forming and solving equations	Form and solve equations from word problems and diagrams
• Forming and solving equations with unknown on both sides	Form and solve equations with unknown on both sides
• Forming and solving inequalities	Form and solve inequalities contextual
• Representing inequalities on a number line	Solve single inequalities representing your solution on a number line
• Solving inequalities with unknown on both sides	Solve inequalities with unknown on both sides

Module 29: Linear & Non-Linear Graphs

• Conversion graphs	Interpret and draw conversion graphs
• Distance time graphs	Interpret distance-time graphs
• Drawing polynomials	Use table of values to draw polynomials for quadratic and cubic graphs
• Reciprocal graphs	Plot reciprocal graphs

LOWER HIGHER

Autumn 2

Module 2: Revision

• **Recurring decimals to fractions**	Single and problems involving operations to combine more than one.
• **Indices – Positive Powers**	Multiplication, division and power to power for simple and complex problems
• **Indices – Negative Powers**	Multiplication, division and power to power for simple and complex problems including reciprocal
• **Indices – Fractional Powers**	Multiplication, division and power to power for simple and complex problems
• Expanding Triple Brackets	e.g. $(x + 1)(2x - 1)(3x + 2)$
• Solving Equations including fractional	e.g. $\frac{2x+3}{4} = -7$
• Iteration	Finding the next terms and overall solution to a suitable degree of accuracy.
• **Quadratic Graphs – Drawing**	Completing a table of values and plotting
• Quadratic Graphs – Interpreting	Roots and turning points
• Cumulative Frequency – Drawing	Completing a table of values and plotting
• Cumulative Frequency – Interpreting	Finding median and IQR long with other problems
• Box Plots – Drawing	Finding the 5 key pieces of information and drawing
• Box Plots - Interpreting	e.g. finding the amount of people higher than the LQ
• Ratio Problems	Including fractions, decimals and percentages
• Exchange rates	Worded problems
• Density Mass & Volume Problems	Worded problems
• **Speed Distance and Time Problems**	Worded problems
• Frequency Polygons (EDEXCEL ONLY)	Drawing and interpreting

UPPER HIGHER

Autumn 2

Module 30: Linear Graphs

• Solving problems with co-ordinates, midpoint and endpoints	Find the midpoint and endpoint of line segments
• Equation of linear graph	Identify the equation of a linear graph ($y = mx + c$)
• Equation of a straight line	Identify the equation of a line given two co-ordinates
• Parallel and perpendicular linear graphs	Work out the equation of lines parallel or perpendicular to a given equation

Module 31: Linear Inequalities

• Solving single inequalities	Solve single inequalities representing your solution on a number line
• Solving double inequalities	Solve double inequalities and represent solutions using set notation
• Representing linear equations graphically and show regions	Represent linear inequalities graphically and show regions
• Solving several inequalities in two variables	Solve several inequalities in two variables, representing the solution set on a graph
• Solving quadratic equalities	Solve quadratic inequalities

Module 32: Non-Linear Graphs

• Cubic and Reciprocal graphs	Plotting and drawing
• Graphs of the form $y = k^x$	Plotting and drawing

Module 33: Trigonometric Graphs

• Recognising and sketching trigonometric graphs	Sketch trigonometric graphs
• Finding equivalent values on trigonometric graphs	Finding equivalent values on trigonometric graphs
• Solving simple trig equations	Solve simple trig equations graphically
Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps

FOUNDATION LOWER HIGHER UPPER HIGHER

Module Breakdown with Associated Knowledge	Spring 1		Spring 1		Spring 1	
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	**Module 34: Algebraic Proof & reasoning**	
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Algebraic proof	Use algebraic techniques such as expanding and factorising.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Algebraic proof	Use algebraic techniques such as expanding and factorising.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	**Module 35: Recurrence Relations**	
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Recurrence relations	Substitute into an iterative formula. Be able to use the 'ANS' button on a calculator. Use trial and improvement to use the decimal search method.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	**Module 36: Functions**	
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Function notation	Substitute numerical and algebraic terms into a function. Form and solve function equations.
					• Composite functions	Use numerical and algebraic substitutions to find composite functions.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Inverse functions	Rearrange a formula to find an inverse function.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	**Module 37: Transformation of Graphs**	
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Completing the square	Complete the square.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Reflections of graphs	Sketch a reflected graph.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Translation of graphs	Sketch a translated graph
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Transformation of graphs	Interpret transformations of graphs written in function notation and cartesian form.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	**Module 38: Further Graphs**	
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Decimal search method	Substitute values into expressions to find solutions.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Iteration	Identify a solution.
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Estimate gradients	Draw tangents
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Interpret gradients	Calculate gradients
	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	Revision – QLA's to fill knowledge gaps	• Estimating distance	Calculate areas under curves