



Wollaston School: 2023 Curriculum Map for Mathematics
Curriculum Lead: Rachel Lynch



Curriculum Aim and scope:

Key Stage 3: We will build on the work that has been covered in the primary schools as well as beginning to introduce some lower level GCSE topics as part of the higher end challenging curriculum. Those working below the expected level will continue to build on their numeracy skills whilst following an appropriate curriculum designed to improve proficiency in shape, data and algebra so students are prepared for the start of GCSE in year 9. Homework will be set weekly and will include questions designed to master essential skills each term. Development of problem solving and reasoning skills will be enhanced alongside the teaching of the main curriculum. Students will be encouraged to become more independent learners as they will have access to on-line mathematical learning resources which they will use in school and for homework. Links to literacy will include the spelling and definitions of new words associated with mathematics. Students work will be checked for spelling, punctuation, and grammar. There will be three assessment points throughout the year.

Key Stage 4: We teach GCSE at two tiers 'Higher' and 'Foundation'. The content is prescribed but our aim is to develop problem solving skills and relate mathematics to real life needs.

Year	Term	Unit	Description of what is being taught <u>including</u> end learning goals	Links to National Curriculum	Subject Specific Terminology and Key Words	Prior knowledge (including previous key stage/retrieval required)	Assessment and Homework (How is the learning being checked- how do you know it is being remembered?)
Year 7	1	Unit 1: Place Value	Understanding place value including decimals Rounding to nearest 10,100,1000 Rounding to decimal places and significant figures Multiplying and dividing with powers of 10 Introduction of standard form and bounds	N1 N2 N8 N13	Figures Place value Positive Round Whole number Decimal Ordinary number Standard form Bounds Significant figures	Understand place value Ordering and comparing numbers Rounding Multiplying and dividing by powers of 10	Weekly Sparx HW Unit tests

			Identify the symmetries of all 2D shapes and name them				
	3	Unit 5: Fractions	Equivalent fractions Ordering fractions Simplifying fractions Mixed number into improper fraction and vice versa Add and subtract fractions including mixed numbers Equivalent fractions, decimals and percentages	N2 N4	Equivalent Ascending Descending Mixed number Improper fraction Simplifying	Use common factors to simplify fractions Compare and order fractions Add and subtract fractions including mixed numbers Multiply simple pair of fractions Divide proper fractions by whole numbers	Weekly Sparx HW Unit tests
		Unit 6: Fractions, decimals and percentages	Ordering FDP Fraction of an amount Percentage of an amount Percentage increase/decrease including simple interest Percentage change	N9 N10 N11 R8	Ascending Descending Depreciates Annum	Recall and use simple equivalence between simple f,d,p Solve problems involving calculations of %	
	4	Unit 7: Intro to Algebra	Use function machines Simplify expressions by collecting like terms including powers and also involving multiplication and dividing Expand single brackets Factorise into a single bracket	A1 A2 A4 A14 A15	Function Simplify Powers Indices Expand Factorise Linear Sequence nth term	Use simple formulae Generate and describe linear sequences	Weekly Sparx HW Unit tests End of term cumulative assessments (topics from 3 and 4)

		Unit 8: Coordinates and graphs	<p>Linear sequences</p> <p>Plot and read coordinates</p> <p>Find the midpoint of two points</p> <p>Draw linear graphs</p> <p>Read and interpret real life linear graphs</p> <p>Understand equation of line $y = mx + c$</p> <p>Identify parallel lines</p>	A8 A9 A11	<p>Plot</p> <p>Coordinate</p> <p>Midpoint</p> <p>Linear</p> <p>Gradient</p> <p>y-intercept</p> <p>parallel lines</p>	Describe positions on the full coordinate grid	
	5	Unit 9: Order of operations	<p>Use the order of operations to solve simple calculations including brackets</p> <p>Apply BIDMAS to solve a calculation including powers and roots</p> <p>Put the brackets into a calculation to make it true</p> <p>Solve complex BIDMAS calculations</p>	N5 N6	<p>Order</p> <p>Operations</p> <p>BIDMAS</p> <p>Powers</p> <p>Roots</p>	Use their knowledge of order of operations to carry out calculations	Weekly Sparx HW
		Unit 10: Ratio and proportion	<p>Equivalent ratios</p> <p>Simplify ratios</p> <p>Identify the relationship between ratios and fractions</p>	R1 R4 R5 R6 R7 R9	<p>Equivalent</p> <p>Simplify</p> <p>Ratio</p> <p>Proportion</p> <p>Direct proportion</p> <p>Inverse proportion</p>	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	Unit tests

			Divide in a given ratio Best value problems Simple direct proportion including recipe questions Simple inverse proportion				
	6	Unit 11: Working with data	Calculate averages from a list of data and frequency table Draw and interpret stem and leaf diagrams Draw and fill in two way tables Draw and interpret bar charts Draw and interpret pictograms Complete and interpret scatter graphs Revision and consolidation of the year	S1 S2 S3	Average Mean Mode Median Range Frequency Stem and leaf Bar charts Axis Pictograms Key Scatter graph Correlation	Calculate and interpret the mean as an average Interpret and construct line graphs	Weekly Sparx HW Unit tests End of year assessment
Year 8	1	Unit 1: Number properties	Index laws for multiplication and division Understand factors, multiples and prime numbers HCF and LCM Prime factor decompositions	N3	Prime number Square number Cube number Square root Cube root Factor Multiple Product Lowest Common Multiple	<u>KS2</u> Times tables List multiples and factors Identify common multiples & factors Define prime numbers and prime factors Recall prime factors up to 19 <u>Year 7 Unit 2:</u>	Weekly Sparx HW Unit tests

		Unit 2: Positive and negative numbers	Ordering positive and negative numbers +/-/x/÷ positive and negative integers Substitute negative integers into expressions and formulae BIDMAS	N1 N2 N4 N5 N6 N7 N8	Highest Common factor Index / Indices Power Base Directed Number Positive Negative Inequality Substitute Index/Indices	Should already be familiar with factors, multiples, and HCF/LCM using listing strategies. Some HA pupils may have seen prime factorisation KS2 Use negative numbers in context, and calculate intervals across zero Year 7 Unit 1: Place Value Unit 9: Order of Operations	
		Unit 3: Rounding and estimation	Rounding to nearest 10,100,1000 Rounding to decimal places and significant figures Use rounding to significant figures to estimate in simple calculations including worded problems Use inequality notation to specify simple error intervals due to rounding	N1 N12 N13 N14	Round Significant figure Estimate Lower bound Upper bound Error interval Inequality Square root	Year 7 Unit 1: Place Value – Will have seen rounding to 10/100/1000 and decimal places. HA pupils will have seen significant figures and started to estimate Year 8 Unit 1: Square roots	
	2	Unit 4: Length and Area	Calculate the perimeter and area of all 2D shapes including circles Calculate the perimeter and area of compound shapes	G1 G2 N12	Perimeter Area Compound shape Parallelogram Trapezium	Year 7 Unit 3 Perimeter Area and Units All pupils will have seen area and perimeter of 2D	Weekly Sparx HW Unit test End of term cumulative

			Focusing on functional questions		Radius Diameter Circumference Chord Sector Segment Tangent	shapes including trapezium HA pupils will have looked at circumference and area of circles KS2 Recognise and describe 3D shapes Calculate the volume of cubes/cuboids Year 7/8 Calculating the area of 2D shapes KS2 Converting units	Assessment (topics from term 3 and 4)
		Unit 5: 3D shapes	Calculate the volume and surface area of cubes, cuboids, prisms including cylinders Convert between units of area and volume	G15 G16 N12	Volume Surface area Prism Cylinder Pi		
		Unit 6: Compound measures	Speed distance time including graphs Density, mass and volume Force, pressure and area	R1 R10	Formulae Axis Units Speed Distance Time Density Mass Volume Force Pressure Area		
	3	Unit 7: Calculations with fractions	Equivalent fractions Ordering fractions Simplifying fractions	N2 N3 N4	Equivalent Ascending Descending Simplify Mixed Number Improper fraction	KS2/Year 7 Use common factors to simplify fractions Compare and order fractions	Weekly Sparx HW Unit tests

		Unit 8: Probability	<p>Converting mixed numbers into improper fractions and vice versa</p> <p>Add and subtract fractions including mixed numbers</p> <p>Multiply and divide fractions including mixed numbers</p> <p>List outcomes</p> <p>Apply the property that the probabilities of mutually exclusive outcomes sum to 1</p> <p>Construct and complete a sample space diagrams</p> <p>Draw and interpret venn diagrams</p>	<p>P1</p> <p>P2</p> <p>P3</p> <p>P4</p>	<p>Outcome</p> <p>Event</p> <p>Probability</p> <p>Mutually exclusive</p> <p>Sample space</p> <p>Venn diagram</p> <p>Intersect</p> <p>Union</p> <p>Complement</p>	<p>Add and subtract fractions including mixed numbers</p> <p>Multiply and divide simple fractions (KS2 or top set in year 7)</p> <p>Probability will be a new topic but students will need prior knowledge of working with fractions and decimals from KS2 and year 7</p>	
	4	<p>Unit 9: Algebraic manipulation</p> <p>Unit 10: Solving equations</p>	<p>Simplify expressions by collecting like terms including powers and also involving multiplication and dividing</p> <p>Expand and factorise into a single bracket</p> <p>Expand and factorise into double brackets</p> <p>Solve linear equations</p> <p>Understand inequality notation</p> <p>Solve linear inequalities</p>	<p>A1</p> <p>A3</p> <p>A4</p> <p>A5</p> <p>A6</p> <p>A7</p>	<p>Expression</p> <p>Simplify</p> <p>Expand</p> <p>Factorise</p> <p>Linear</p> <p>Quadratic</p> <p>Solve</p> <p>Inequality</p> <p>Rearrange</p> <p>Changing the subject</p>	<p>Year 7:</p> <p>Unit 7 – intro to algebra</p> <p>Students would have dealt with single brackets in year 7</p> <p>KS2</p> <p>find pairs of numbers that satisfy an equation with unknowns</p>	<p>Weekly Sparx HW</p> <p>Unit test</p> <p>End of term cumulative Assessment (topics from term 1 and 2)</p>

			Rearranging formulae				
5	Unit 11: Angles	Apply the sum of angles around a point Vertically opposite angles Finding missing angles on a straight line Finding missing angles in a triangle Finding missing angles in a quadrilateral and angles in polygons both regular and irregular Use angle facts to find angles on parallel lines	G5 G7 G10 G11 G12 G13 G16	Angles Vertically Straight line Triangle Quadrilateral Polygon Regular Irregular Parallel lines Corresponding Alternate Co-interior angles	KS2 Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles Year 7 Unit 4 - Angle facts: Angles around a point, vertically opposite angles on a straight line, angles in a triangle, angles in a quadrilateral and angles in polygons both regular and irregular		
	Unit 12: Transformations	Transform 2D shapes by: Reflection Translation Rotation Enlargement Identify which transformation has occurred	G8 G9	Transformation Reflection Translation Vector Rotation Centre Enlargement Scale Factor	KS2 Students will be familiar with translating and reflecting shapes from KS2		
6	Unit 13: Statistics	Calculate averages from a list of data and frequency table	S1 S2 S3	Averages Mean Median Mode	KS2 Calculate and interpret the mean as an average	Weekly Sparx HW Unit tests	

		Unit 3: Fractions, decimals and percentages	<p>Simplifying surds</p> <p>Equivalent fractions, ordering fractions and simplifying fractions</p> <p>Converting mixed numbers into improper fractions and vice versa</p> <p>Add, subtract, multiply and divide fractions including mixed numbers</p> <p>Calculate exactly with fractions, including solving problems</p> <p>Find equivalent fractions, decimals and percentages</p> <p>Ordering FDP</p> <p>Change recurring decimals into fractions</p>				
	2	Unit 4: Algebraic manipulation	<p>Simplifying expressions by collecting like terms including powers and also involving multiplication and dividing</p> <p>Expand and factorise into a single bracket</p> <p>Expand and factorise into double brackets</p> <p>Simplify algebraic fractions</p>	<p>A1</p> <p>A3</p> <p>A4</p> <p>A5</p> <p>A12</p> <p>A13</p>	<p>Expression</p> <p>Simplify</p> <p>Expand</p> <p>Factorise</p> <p>Linear</p> <p>Quadratic</p> <p>Complete the square</p>	<p>Year 7</p> <p>Unit 7 – Intro to algebra</p> <p>Year 8</p> <p>Unit 9 - Algebraic manipulation</p> <p>Students will be familiar with collecting like terms, expanding and factorising from year 7 and 8.</p>	<p>Weekly Sparx HW</p> <p>Unit tests</p> <p>End of term cumulative assessment</p>

		Unit 5: Coordinates and graphs	<p>Complete the square on an algebraic expression</p> <p>Plot and read coordinates</p> <p>Find the midpoint of two points</p> <p>Draw linear graphs</p> <p>Read and interpret real life linear graphs</p> <p>Understand equation of line $y = mx + c$</p> <p>Identify parallel lines</p> <p>Identify perpendicular lines</p> <p>Find the equation given two points</p>	A8 A9 A10 A11 A12	<p>Plot</p> <p>Coordinate</p> <p>Midpoint</p> <p>Linear</p> <p>Gradient</p> <p>y-intercept</p> <p>Parallel lines</p> <p>Perpendicular lines</p>	<p>Year 7</p> <p>Unit 8 – Coordinates and graphs</p> <p>Students would have learnt as far as parallel lines if they have been in set 1 or 2 in year 7.</p> <p>Sets 3 and 4 – as far as drawing straight line graphs</p>	
	3	Unit 6: 2D shapes	<p>Find unknown angles using angle facts</p> <p>Calculate the area and perimeter for 2D shapes</p> <p>Use Pythagoras theorem to find a missing length and apply it to solve problems involving area and perimeter of shapes</p> <p>Use SohCahToa to find missing sides or angles in a right angle triangle</p>	G1 G2 G5 G6 G10 G12 G13 G14	<p>Trapezium</p> <p>Parallelogram</p> <p>Symmetry</p> <p>Pythagoras Theorem</p> <p>Sine</p> <p>Cosine</p> <p>Tangent</p> <p>Opposite</p> <p>Adjacent</p> <p>Hypotenuse</p> <p>Area</p> <p>Perimeter</p>	<p>Year 7</p> <p>Unit 3 – Perimeter & Area</p> <p>Area & perimeter of 2D shapes and compound shapes</p> <p>Unit 4 – Angles & 2D Shapes</p> <p>Basic angle facts</p> <p>Year 8</p> <p>Unit 4 Length & area</p> <p>Recap of 2D area</p> <p>Unit – 11 – Angles</p> <p>Angles in polygons</p>	<p>Weekly Sparx HW</p> <p>Unit tests</p> <p>End of term cumulative assessment</p>

		Unit 7: 3D shapes	<p>Know the 3D shapes and their nets</p> <p>Calculate the volume and surface area of cubes, cuboids, prisms including cylinders</p> <p>Calculate the volume and surface area of pyramids, Spheres, Hemispheres, frustums and cones</p> <p>Apply Pythagoras to cone problems</p>	G15	<p>Cube Cuboid Prism Cylinder Sphere Pyramid Cone Frustum Volume Surface area</p>		
	4	<p>Unit 8: Solving equations</p> <p>Unit 9: Sequences</p>	<p>Solve linear equations</p> <p>Form and solve linear equations</p> <p>Change the subject of the formula</p> <p>Solve quadratics by factorising</p> <p>Solve simultaneous equations including worded problems</p> <p>Recognise and continue sequences</p> <p>Find the nth term of a linear sequence</p> <p>Find the nth term of a quadratic sequences</p> <p>Extension: geometric sequences</p>	<p>A1 A3 A4 A5 A7 A12 A13</p> <p>A14 A15 A16</p>	<p>Solve Linear Quadratic Subject Expand Factorise Simultaneous</p> <p>Term Position Linear sequence Arithmetic sequence Quadratic sequence Geometric sequence Nth term Generate</p>	<p>Year 8 <u>Solving Equations</u> Solving linear equations including x on both side and brackets Higher – change the subject</p> <p>Year 7 Unit 7 – Introduction to Algebra Intro to Linear sequences</p>	<p>Weekly Sparx HW</p> <p>Unit tests</p> <p>End of term cumulative assessment</p>

	5	<p>Unit 10: Percentages</p> <p>Unit 11: Proportion</p>	<p>Calculate percentages of an amount</p> <p>Perform a percentage increase/decrease</p> <p>Find the percentage change</p> <p>Reverse percentages – solve original value problems</p> <p>Calculate simple interest and compound interest</p> <p>Set up, solve and interpret the answers growth and decay problems</p> <p>Solve best value problems</p> <p>Adapt a recipe and use this to solve problems</p> <p>Solve direct proportion problems</p> <p>Solve inverse proportion problems</p> <p>Apply statistics to a capture and recapture problem</p> <p>Form an equation using variables in direct and inverse proportion and use this to solve problems (finding k)</p>	<p>N10 N11</p> <p>R8 R9 A2 A5 A6</p>	<p>Percentage Multiplier Compound interest Simple interest Depreciation</p> <p>Direct proportion Inverse proportion</p>	<p>Year 7 Unit 6 – FDP Finding basic percentages of amounts and percentage change Higher – simple interest</p> <p>Year 7 Unit 10 – Ratio & Proportion Best value problems, recipe problems, direct proportion problems Higher – simple inverse problems</p> <p>Year 8 Unit 10 – solving equations</p> <p>Year 9 Unit 8 – Solving equations</p>	<p>Weekly Sparx HW</p> <p>Unit tests</p> <p>End of term cumulative assessment</p>

			<p>Add and subtract vectors, and multiply vectors by a scalar (use diagrammatic and column representations)</p> <p>Construct similar shapes by enlargement of a positive integer scale factor from a given point on a coordinate grid</p>				
	4	<p>Unit 8: Drawing graphs</p> <p>Unit 9: Straight line graphs</p>	<p>Plotting coordinates</p> <p>Drawing linear graphs</p> <p>Drawing quadratic graphs</p> <p>Plotting cubic, reciprocal and exponential graphs</p> <p>Find the midpoint of two points</p> <p>Read and interpret real life linear graphs</p> <p>Understand equation of line $y = mx + c$</p> <p>Identify parallel lines</p> <p>Find the equation given two points</p>	<p>A3</p> <p>A5</p> <p>A6</p> <p>A8</p> <p>A4</p>	<p>Plot</p> <p>Sketch</p> <p>Linear</p> <p>Quadratic</p> <p>Cubic</p> <p>Reciprocal</p> <p>Exponential</p> <p>Gradient</p> <p>Y-intercept</p> <p>Parallel</p> <p>Perpendicular</p>	<p>Year 7</p> <p>Unit 8: Coordinates and graphs</p> <p>Year 9</p> <p>Unit 5: Coordinates and graphs</p> <p>Year 7</p> <p>Unit 8: Coordinates and graphs</p> <p>Year 9</p> <p>Unit 5: Coordinates and graphs</p>	<p>Weekly HW</p> <p>Unit tests</p> <p>End of term cumulative assessment</p>
	5	Unit 10: Compound Measures	<p>Convert between units</p> <p>Speed distance time including graphs</p>	R2	<p>Speed</p> <p>Density</p> <p>Mass</p> <p>Volume</p>	<p>Year 7</p> <p>Unit 3: Perimeter, area and units</p> <p>Year 8</p>	<p>Weekly HW</p> <p>Unit tests</p>

		Unit 11: Probability	<p>Density, mass and volume</p> <p>Force, pressure and area</p> <p>List outcomes</p> <p>Apply the property that the probabilities of mutually exclusive outcomes sum to 1</p> <p>Sample space</p> <p>Venn diagrams</p> <p>Tree diagrams</p>	<p>N1</p> <p>P1</p> <p>P2</p> <p>P3</p>	<p>Force</p> <p>Pressure</p> <p>Probability</p> <p>Estimated frequency</p> <p>Relative frequency</p> <p>Mutually exclusive</p> <p>Exhaustive</p> <p>Independent</p> <p>Sample Space</p> <p>Venn diagram</p> <p>Tree diagram</p>	<p>Unit 4: Length and area</p> <p>Unit 6: Compound measures</p> <p>Year 8</p> <p>Unit 8: Probability</p>	<p>End of term cumulative assessment</p>
	6	Unit 12: Averages and range	<p>Averages from a list of data and frequency tables</p> <p>Averages from a stem and leaf diagram</p> <p>Recap prior content from KS3</p> <p>Revision and consolidation of the year</p>	<p>S4</p> <p>S5</p> <p>Recap KS3 content</p> <p>S1</p> <p>S2</p> <p>S6</p>	<p>Average</p> <p>Mean</p> <p>Mode</p> <p>Median</p> <p>Range</p> <p>Inter-quartile range</p> <p>Upper quartile</p> <p>Lower quartile</p>	<p>Year 7</p> <p>Unit 11: Working with data</p> <p>Year 8</p> <p>Unit 13: Statistics</p>	<p>Weekly HW</p> <p>Unit tests</p> <p>End of year assessment (Mocks)</p>
Year 11 Foundation	1	Unit 1: Multiples and Factors	<p>Recognise, list and define prime numbers</p> <p>Understand and can find the multiples and factors</p>	<p>Consolidate KS3 content focusing on more problem</p>	<p>Prime factors</p> <p>Factor</p> <p>Multiple</p> <p>Product of prime</p> <p>HCF</p>	<p>Year 7</p> <p>Unit 2: The four operations</p> <p>Year 8</p> <p>Unit 1: Number properties</p>	<p>Weekly HW</p> <p>Unit tests</p>

			<p>Find the HCF of a set of numbers</p> <p>Find the LCM of a set of numbers</p> <p>Solve worded problems involving the lowest common multiple</p> <p>Perform prime factor decompositions</p> <p>Use prime factor decomposition to find the HCF or LCM of two numbers</p> <p>Use function machines and find the output, input or function</p> <p>Substitute positive and negative integers into expressions and formulae</p> <p>Substitute positive and negative integers into expressions and formulae, including with powers</p> <p>Simplify expressions by collecting like terms, including powers</p> <p>Simplify expressions involving sums, products and powers, including using index laws</p> <p>Expand and simplify multiple single brackets</p> <p>Take out common factors to factorise</p>	<p>solving exam style questions</p> <p>A1 A2 A3 A12</p>	<p>LCM Prime factor decomposition</p> <p>Function Substitute Expression Equation Formulae Simplify Like terms Index Indices Expand Factorise Identity Subject</p>	<p><u>Year 7</u> Unit 7: Introduction to algebra</p> <p><u>Year 8</u> Unit 9: Algebraic manipulation</p> <p><u>Year 9</u> Unit 4: Algebraic manipulation</p>	
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		Unit 3: Solving equations	<p>Expand the product of two binomials</p> <p>Factorise a quadratic expression of the form $x^2 + bx + c$, including using the difference of two squares</p> <p>Use algebra to construct arguments and prove identities</p> <p>Change the subject of a formula</p> <p>Solve linear equations</p> <p>Form and solve linear equations</p> <p>Solve quadratics by factorising</p> <p>Solve simultaneous equations including worded problems</p>	A12 A13	Solve Simultaneous	<p>Year 8 Unit 10: Solving equations</p> <p>Year 9: Unit 8: Solving equations</p>	
	2	Unit 4: Indices and standard form	<p>Find integer powers and roots</p> <p>Use the order of operations to solve calculations including brackets</p> <p>Apply order of operations to the four operations with negative integers</p> <p>Convert between ordinary numbers and standard form</p>	N3 N5	Integer Power Index Root Ordinary Number Standard Form	<p>Year 7 Unit 9: Order of operations</p> <p>Year 8 Unit 1: Number Properties Unit 2: Positive and negative numbers</p> <p>Year 9 Unit 2: Powers and roots</p>	<p>Weekly HW</p> <p>Unit tests</p> <p>Mocks</p>

		Unit 5: Area, perimeter and right angled triangles	<p>Rewrite a number in correct standard form notation</p> <p>Multiply and divide with numbers written in standard form</p> <p>Add and subtract with numbers written in standard form</p> <p>Solve worded problems involving numbers written in standard form</p> <p>Solve functional problems by finding the area or perimeter of compound shapes made from rectangles</p> <p>Find the area of 2D shapes</p> <p>Apply Pythagoras theorem to find an unknown side</p> <p>Use trigonometric ratios to find an unknown side/angle in a right angle triangle</p> <p>Identify when to use Pythagoras' theorem and when to use the trigonometric ratios</p> <p>Know the exact values of trig</p>	G10 G11 R1	<p>Compound shape</p> <p>Pythagoras Theorem</p> <p>Trigonometric ratio</p> <p>Sine</p> <p>Cosine</p> <p>Tangent</p> <p>Hypotenuse</p> <p>Opposite side</p> <p>Adjacent side</p>	<p><u>Year 7</u></p> <p>Unit 3: Perimeter, area and units</p> <p><u>Year 8</u></p> <p>Unit 4: Length and area</p> <p><u>Year 9</u></p> <p>Unit 6: 2D Shapes</p> <p><u>Year 10</u></p> <p>Unit 4: Perimeter and area</p>	
	3	Tailored revision from the mocks analysis	<p>GCSE Specification</p> <p>Key topic to prioritise:</p> <p>Sequences – should have been interweaved when doing</p>				

			algebraic topics in year 10/11 but not covered as a topic in fully since year 9 Fractions				
	4	Tailored revision from the mocks analysis and a focus on past papers	GCSE Specification				
	5	Tailored revision with a focus on past papers	GCSE Specification				
	6	Tailored revision for paper 2 and 3	GCSE Specification				
Year 10 Higher	1	Unit 1: Surds and Indices Unit 2: Solving quadratics	Simplify expressions involving sums, products and powers, including using index laws Fractional and negative indices Simplify surds Expand brackets with surds Rationalise surds Find and use the nth term of geometric sequences (r^n , where n is an integer and r can be a surd) Expand double and triple brackets Solve quadratics by factorising, quadratic formula and completing the square including	N2 N3 N4 A14 A1 A2 A13	Product Power Index Indices Surd Rational Irrational Rationalise Geometric sequence Expand Factorise Quadratic formula Inequality Complete the square	Year 8 Unit 9: Algebraic manipulation Year 9 Unit 2: Powers and roots Year 8 Unit 9: Algebraic manipulation Year 9 Unit 4: Algebraic manipulation Unit 8: Solving equations	Weekly HW Unit tests End of term cumulative assessment

		Unit 3: Drawing graphs and graphing inequalities	<p>questions that require rearranging</p> <p>Solve quadratic inequalities</p> <p>Understand equation of line $y = mx + c$</p> <p>Identify parallel lines</p> <p>Identify perpendicular lines</p> <p>Find the equation given two points</p> <p>Plotting quadratic, cubic, reciprocal and exponential graphs</p> <p>Represent linear inequalities on graphs</p>	A5 A6 A8	Parallel Perpendicular Gradient Y-Intercept Linear Quadratic Cubic Reciprocal Exponential	<p>Year 7 Unit 8: Coordinates and graphs</p> <p>Year 9 Unit 5: Coordinates and graphs</p>	
	2	Unit 4: Arcs and sectors Unit 5: Circle theorems	<p>Finding the area or perimeter of compound shapes including parts of circles</p> <p>Area of sectors</p> <p>Length of an arc</p> <p>Find the perimeter of a sector when given the area or the area when given the perimeter</p> <p>Recognise and name the parts of a circle</p>	G3 G7 G4	<p>Sector Segment Arc Circumference Diameter Radius</p> <p>Chord Tangent Alternate segment Cyclic Quadrilateral</p>	<p>Year 8 Unit 4: Length and area</p> <p>Year 8 Unit 4: Length and area</p>	<p>Weekly HW</p> <p>Unit tests</p> <p>End of term cumulative assessment</p>

			Force, pressure and area				
5	Unit 11: Graphs of circles	Recognise and interpret the equation of a circle with centre at the origin Calculate whether a given point lies inside, on or outside a circle Solve problems using the equation of a circle Find the equation of a tangent to a circle at a given point Solve problems including find the equation of a tangent to a circle at a given point	A10	Origin Tangent Radius	New topic but knowledge from previous circle chapters and coordinate geometry may be helpful	Weekly HW Unit tests End of term cumulative assessment	
	Unit 12: Linear and quadratic simultaneous equations	Solve two linear simultaneous equations in two variables algebraically Form and solve two linear simultaneous equations in two variables algebraically Solve two linear simultaneous equations in two variables graphically Solve two simultaneous equations (one linear, one quadratic) algebraically and graphically	A12	Simultaneous Equation Linear Quadratic	Year 9 Unit 8: Solving equations		

	6	Unit 13: Histograms, cumulative frequency and boxplots	<p>Interpret and calculate quartiles and interquartile range</p> <p>Find the interquartile range from a stem and leaf diagram</p> <p>Construct, complete and interpret box plots</p> <p>Compare boxplots</p> <p>Construct and interpret a cumulative frequency diagram</p> <p>Construct and interpret a histogram with unequal class widths</p> <p>Estimate from a histogram</p> <p>Apply statistics to a capture and recapture problem</p>	S1 S2 S3 S4 S5 S6	<p>Lower Quartile</p> <p>Upper Quartile</p> <p>Interquartile range</p> <p>Histogram</p> <p>Cumulative frequency</p> <p>Boxplot</p> <p>Frequency polygon</p>	<p>Mainly new content but the following previous chapters may be helpful</p> <p>Year 7: Working with data</p> <p>Year 8 Unit 13: Statistics</p> <p>Year 9 Unit 11: proportion</p>	<p>Weekly HW</p> <p>Unit tests</p> <p>End of year assessment (Mocks)</p>
Year 11 Higher	1	Unit 1: Functions and iteration	<p>Show that a complex equation has a solution between two values</p> <p>Find a given x_n using iteration</p> <p>Find approximate solutions to equations using iteration, including using suffix notation in recursive formulae</p> <p>Obtain the output or input of a function using function notation</p>	A3 A11 R6	<p>Iteration</p> <p>Function</p> <p>Inverse function</p> <p>Composite function</p>	<p>New content but substitution and rearranging skills from previous years will be required for this unit</p>	<p>Weekly HW</p> <p>Unit tests</p>

		<p>Write the reverse process of a function as the "inverse function"</p> <p>Use the succession of two functions as a "composite function", including writing this as a single function</p> <p>Solve problems involving functions, including using simultaneous equations to find the function machine</p> <p>Complete the square to find the turning point of quadratic functions</p> <p>Find the roots, intercepts and turning point of quadratic functions</p> <p>Use the sketch of a quadratic graph to find the equation using the roots, intercepts and turning point</p> <p>Describe and sketch translations of functions</p> <p>Describe and sketch stretches of functions</p> <p>Describe and sketch reflections of functions</p> <p>Describe and sketch combined transformations of functions</p>	<p>A5</p> <p>A7</p>	<p>Turning point</p> <p>Root</p> <p>Intercept</p> <p>Translation</p>	<p>New content</p> <p>Useful previous chapters:</p> <p><u>Year 9</u></p> <p>Unit 4: Algebraic manipulation</p> <p><u>Year 10</u></p> <p>Unit 2: Solving quadratics</p> <p><u>Year 8 and 10</u></p> <p>Unit 12/Unit 7: Transformations</p>	
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		Unit 3: Advanced Trigonometry	<p>Interpret the effect combined transformations of functions on specific points</p> <p>Recap on Pythagoras and trigonometry ratios for right angle triangles</p> <p>Know the exact values of trig</p> <p>Apply the Sine rule for non right angle triangles</p> <p>Apply the Cosine rule for non right angle triangles</p> <p>Apply the area of triangle rule</p> <p>Recognise and sketch graphs of trigonometric functions</p>	G10 G11 G12 G13	<p>Pythagoras Theorem</p> <p>Trigonometric ratio</p> <p>Sine</p> <p>Cosine</p> <p>Tangent</p> <p>Hypotenuse</p> <p>Opposite side</p> <p>Adjacent side</p> <p>Sine Rule</p> <p>Cosine rule</p>	<p>Year 9</p> <p>Unit 6: 2D shapes</p> <p>Students will be familiar with trig in right angle triangles</p>	
	2	Unit 4: Vectors	<p>Describe directional vectors as column vectors and vice versa</p> <p>Add and subtract vectors, and multiply vectors by a scalar (use diagrammatic and column representations)</p> <p>Use vectors to solve geometrical problems, including midpoints</p> <p>Use vectors to solve geometrical problems, including midpoints and lines divided into a ratio</p>	G14 G15	<p>Vector</p> <p>Column vector</p> <p>Magnitude</p> <p>Scalar</p>	New content	<p>Weekly HW</p> <p>Unit tests</p> <p>Mocks</p>

			Use vectors to construct geometrical proofs (lines are parallel, points lie on a straight line)				
		Unit 5: Real life graphs and rates of change	<p>Complete and read distance-time and speed-time graphs, and find the speed from a distance-time graph</p> <p>Find the average speed or acceleration on non-standard real-life distance-time or speed-time graphs</p> <p>Estimate the speed or acceleration on non-standard real-life distance-time or speed-time graphs by finding the gradient of a tangent</p> <p>Find the areas under line graphs and interpret the results</p> <p>Estimate the areas under curved graphs and interpret the results</p> <p>Interpret line graphs for time series data</p>	A8 A9 R4 R5 S2	Velocity Gradient Acceleration Tangent Trapezium Time Series	<p>Year 8 Unit 6: Compound measures</p> <p>Year 10 Unit 10: Compound measures</p>	
		Unit 6: Algebraic proof	<p>Use algebra to construct arguments and prove identities</p> <p>Disprove by counterexample</p> <p>Express a number property using algebra</p> <p>Construct simple algebraic proofs</p>	A2	Identity Proof	<p>Mainly new content but previous algebraic units will be helpful</p> <p>Year 8 Unit 9: Algebraic manipulation</p> <p>Year 9 Unit 4: Algebraic manipulation</p>	

			Construct complex algebraic proofs Construct complex algebraic proofs in a problem solving context				
	3	Tailored revision from the mocks analysis	GCSE Specification Key topics to prioritise for higher: Ratio Recurring decimals Sequences				
	4	Tailored revision from the mocks analysis and a focus on past papers	GCSE Specification				
	5	Tailored revision with a focus on past papers	GCSE Specification				
	6	Tailored revision for paper 2 and 3	GCSE Specification				