

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 including 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 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

	Unit 2: Written Methods	Understand and know how to use written methods including with decimal numbers Understand factors, multiples HCF and LCM Prime factor decompositions	N4 N3	Add Subtract Multiply Divide Integer Column method Factor Multiple Highest common factor Lowest common multiple Prime number	Written methods with integers Times tables List multiples and factors Identify common multiples & factors Define prime numbers and prime factors Recall prime factors up to	
2	Unit 3: Perimeter, area and units	Perimeter and area of all 2D shapes including circles Perimeter and area of compound shapes Problem solving questions involving area and perimeter Conversion between units	G1 G2 N12	Estimate Convert Perimeter Area Rectangle Triangle Parallelogram Compound shape Trapezium Circumference Pi	Convert between units Recognise when it is possible to use formulae for area of shapes	Weekly Sparx HW Unit tests End of term cumulative assessments (topics from term 1 and 2)
	Unit 4: Angles and 2D Shapes	Drawing and measuring angles Angle facts: Angles around a point, vertically opposite angles angles on a straight line, angles in a triangle, angles in a quadrilateral and angles in polygons both regular and irregular	G3 G7 G10 G11 G12	Protractor Acute Obtuse Right angle Reflex Straight line Degrees Quadrilateral Poylgons Irregular	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	

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

	6	Unit 11: Working with data	Divide in a given ratio Best value problems Simple direct proportion including recipe questions Simple inverse proportion 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	KS2 Times tables List multiples and factors Identify common multiples & factors Define prime numbers and prime factors Recall prime factors up to 19 Year 7 Unit 2:	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

	Unit 5: 3D shapes Unit 6: Compound measures	graphs Density, mass and volume Force, pressure and area	G15 G16 N12 R1 R10	Radius Diameter Circumference Chord Sector Segment Tangent Volume Surface area Prism Cylinder Pi Formulae Axis Units Speed Distance Time Density Mass Volume Force Pressure Area	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)
3	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

		Converting mixed numbers into			Add and subtract fractions	
		improper fractions and vice versa			including mixed numbers	
		Add and anhance for attack			Multiply and divide simple	
		Add and subtract fractions including mixed numbers			fractions (KS2 or top set in year 7)	
		including mixed numbers			year 77	
		Multiply and divide fractions				
		including mixed numbers				
	Linia O. Donib abilia	Link authorium	D4	0	Dook ability will be a green	
	Unit 8: Probability	List outcomes	P1 P2	Outcome Event	Probability will be a new topic but students will	
		Apply the property that the	P3	Probability	need prior knowledge of	
		probabilities of mutually	P4	Mutually exclusive	working with fractions and	
		exclusive outcomes sum to 1		Sample space	decimals from KS2 and	
				Venn diagram	year 7	
		Construct and complete a sample space diagrams		Intersect Union		
		space diagrams		Complement		
		Draw and interpret venn		ooproc		
		diagrams				
4	Unit 9: Algebraic	Simplify expressions by collecting	A1	Expression	Year 7:	Weekly Sparx HW
7	manipulation	like terms including powers and	A3	Simplify	Unit 7 – intro to algebra	Weekly Spark IIW
	·	also involving multiplication and	A4	Expand	Students would have dealt	Unit test
		dividing	A5	Factorise	with single brackets in	
			A6	Linear	year 7	End of term cumulative
		Expand and factorise into a single bracket	A7	Quadratic Solve		Assessment (topics from term 1 and 2)
		Diacket		Inequality		2)
		Expand and factorise into double		Rearrange		
		brackets		Changing the subject		
					<u>KS2</u>	
	Unit 10: Solving equations	Solve linear equations			find pairs of numbers that satisfy an equation with	
	equations	Understand inequality notation			unknowns	
		Singularity installed			3	
		Solve linear inequalities				

		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	G5 G7 G10 G11 G12 G13 G16	Angles Vertically Straight line Triangle Quadrilateral Polygon Regular Irregular Parallel lines Corresponding Alternate Co-interior angles	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 angles on a straight line, angles in a triangle, angles in a quadrilateral and angles in polygons both regular and irregular	
	Unit 12: Transformations	parallel lines 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

			Find averages from stem and leaf diagrams Read, complete and interpret two way tables Construct and interpret pie charts Complete and interpret scatter graphs Revision and consolidation of the year		Range Stem and leaf Key Two way tables Pie charts Protractor Scatter graph Correlation Relationship	Interpret and construct line graphs Year 7 Unit 11 - working with data	End of year assessment
Year 9	1	Unit 1: Arithmetic Unit 2: Powers and roots	Use formal written methods for +/-/x/÷ involving decimals +/-/x/÷ positive and negative integers Problem solving with the above Apply BIDMAS to solve a calculation including powers Recognise and define square numbers, square roots, cube numbers and cube roots Use index laws including fractional and negative Convert between ordinary form and standard form +/-/x/÷ with numbers written in standard form	N1 N2 N3 N4 N5 N6 N7 N8 N9 N10 N11 N13 N15 N16 R3	Integer BIDMAS Powers Square numbers Square roots Cube numbers Cube roots Index Laws Standard form Ordinary form Surds Simplify Equivalent Mixed numbers Improper fractions Exact value Recurring decimals	Year 7 Unit 1 – Place value Unit 2 – Four operations Unit 5 - Fractions Unit 6 – FDP Unit 9 – Order of operations Year 8 Unit 1 – Number properties Unit 2 – Positive and negative numbers Unit 7 – Calculations with fractions Students will be consolidating what they have previously learned in year 7 and 8 on these core skills before extending each unit to a higher level.	Weekly Sparx HW Unit tests End of term cumulative assessment

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

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

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

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

	6	Unit 12: Constructions, loci and bearings	Use constructions to solve simple loci problems Use scale factors, diagrams and maps Construct and measure bearings on diagrams Find bearings Revision and consolidation of the year	G3 G4 G9 R2	Construct Locus/Loci Scale Factor Bearing	Year 7 Unit 4 – Measure Angles Measure and draw angles accurately Unit 10 – Ratio and proportion Year 8 Unit 11 – Angles (including measuring accurately) Year 9 Unit 11 - proportion	Weekly Sparx HW Unit tests End of year assessment
Year 10 Foundation	1	Unit 1: Rounding and error intervals	Rounding to nearest 10,100,1000 Rounding to decimal places and significant figures Error intervals Estimation	N2 N8	Round Estimate Truncate Lower Bound Upper Bound Error Interval	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 Unit 3: Rounding and estimation	Weekly HW Unit tests End of term cumulative assessment
		Unit 2: Percentages	Percentages of an amount Percentage increase/decrease Percentage change	Consolidate KS3 content R6	Percentage Multiplier Profit Loss Compound interest Simple interest	Year 7 Unit 6: FDP Year 9 Unit 10: Percentages	

		Reverse percentages		Depreciation		
	nit 3: Ratio and	Simple interest and compound interest Growth and decay problems Equivalent ratios	R1 R3	Ratio Direct Proportion	<u>Year 7</u> Unit 10: Ratio	
		Simplify ratios Identify the relationship between ratios and fractions Divide in a given ratio Best value problems Simple direct proportion	R4 N7	Inverse proportion Simplify Best Value	Year 9 Unit 11: Proportion	
		including recipe questions Simple inverse proportion				
_	nit 4: Perimeter	Perimeter and area of all 2D	G3	Perimeter	Year 7	Weekly HW
and	nd area	shapes including circles	G7	Area	Unit 3: Perimeter, area	
		Desimator and area of acres and	N4	Compound	and units	Unit tests
		Perimeter and area of compound shapes		Sector Arc	Year 8 Unit 4: Length and area	End of term cumulative assessment
		Shapes		Volume	Year 9	Life of term community cussessment
		Focusing on functional questions		Surface area	Unit 6: 2D shapes	
				Cube		
		Area of sectors and length of an		Cuboid		
		arc		Prism Cylinder		
Un	nit 5: Volume	Volume and surface area of	G5	Pyramid	Year 8	
	nd surface area	cubes, cuboids, prisms including	G8	Sphere	Unit 5: 3D shapes	
		cylinders		Hemisphere	Year 9	
				Cone	Unit 7: 3D shapes	

		Volume and surface area of				
		pyramids, Spheres, Hemispheres				
		and cones				
3	Unit 6: Angles and	Angles around a point	G6	Vertically opposite	<u>Year 7</u>	Weekly HW
	bearings	Vertically appeaite angles	R1	Quadrilateral Polygon	Unit 4: Angles and 2D	Unit tests
		Vertically opposite angles		Regular	shapes Year 8	Offic tests
		Angles on a straight line		Irregular	Unit 11: Angles	End of term cumulative assessment
				Exterior angle	Year 9	
		Angles in a triangle		Interior angle	Unit 6: 2D shapes	
				Corresponding		
		Angles in a quadrilateral and		Alternate		
		angles in polygons both regular		Co-interior		
		and irregular		Scale factor Bearing		
		Angles in parallel lines		Dearing		
		7 mgres m paraner mies				
		Use scale factors, diagrams and				
		maps				
		Construct and measure bearings				
		on diagrams				
		Find bearings				
		Tima scarings				
	Unit 7:			Transformation	Year 8	
	Transformations	Transform 2D shapes by:	G1	Rotation	Unit 12: Transformations	
		Reflection	G2	Reflection		
		Translation	G9	Enlargement		
		Rotation	G14	Translation		
		Enlargement	G15 R1	Invariant Vector		
		Identify which transformation has	I/T	Centre		
		occurred		Scale factor		
				Similar		
		Describe directional vectors as				
		column vectors and vice versa				

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

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

		solving exam	LCM		
	Find the LICE of a set of numbers	_	Prime factor		
	Find the HCF of a set of numbers	style			
	5: 1:1 1014 6	questions	decomposition		
	Find the LCM of a set of numbers				
	Solve worded problems involving				
	the lowest common multiple				
	Perform prime factor				
	decompositions				
	Use prime factor decomposition				
	to find the HCF or LCM of two				
	numbers				
Unit 2: Algebraic	Use function machines and find	A1	Function	Year 7	
manipulation	the output, input or function	A2	Substitute	Unit 7: Introduction to	
		A3	Expression	algebra	
	Substitute positive and negative	A12	Equation	Year 8	
	integers into expressions and	, , , , ,	Formulae	Unit 9: Algebraic	
	formulae		Simplify	manipulation	
	Torridae		Like terms	Year 9	
	Substitute positive and negative		Index	Unit 4: Algebraic	
	integers into expressions and		Indices	manipulation	
				manipulation	
	formulae, including with powers		Expand		
	Simplify oversesions by sellective		Factorise		
	Simplify expressions by collecting		Identity		
	like terms, including powers		Subject		
	6. 1.6				
	Simplify expressions involving				
	sums, products and powers,				
	including using index laws				
	Expand and simplify multiple				
	single brackets				
	Take out common factors to				
	factorise				

	Unit 3: Solving equations	Expand the product of two binomials Factorise a quadratic expression of the form x² + bx + c, including using the difference of two squares Use algebra to construct arguments and prove identities Change the subject of a formula Solve linear equations Form and solve linear equations Solve quadratics by factorising Solve simultaneous equations including worded problems	A12 A13	Solve Simultaneous	Year 8 Unit 10: Solving equations Year 9: Unit 8: Solving equations	
2	Unit 4: Indices and standard form	Find integer powers and roots Use the order of operations to solve calculations including brackets Apply order of operations to the four operations with negative integers Convert between ordinary numbers and standard form	N3 N5	Integer Power Index Root Ordinary Number Standard Form	Year 7 Unit 9: Order of operations Year 8 Unit 1: Number Properties Unit 2: Positive and negative numbers Year 9 Unit 2: Powers and roots	Weekly HW Unit tests Mocks

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

			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
			algebraic topics in year 10/11 but				
			not covered as a topic in fully				
			since year 9				
			Fractions				
	4	Tailored revision	GCSE Specification				
		from the mocks					
		analysis and a					
		focus on past					
		papers					
	5	Tailored revision	GCSE Specification				
		with a focus on	·				
		past papers					
	6	Tailored revision	GCSE Specification				
		for paper 2 and 3	·				
Year 10	1	Unit 1: Surds and	Simplify expressions involving	N2	Product	Year 8	Weekly HW
Higher		Indices	sums, products and powers,	N3	Power	Unit 9: Algebraic	·
			including using index laws	N4	Index	manipulation	Unit tests
				A14	Indices	Year 9	
			Fractional and negative indices		Surd	Unit 2: Powers and roots	End of term cumulative assessment
					Rational		
			Simplify surds		Irrational		
			, c, c		Rationalise		
			Expand brackets with surds		Geometric sequence		
			, , , , , , , , , , , , , , , , , , ,				
			Rationalise surds				
			Find and use the nth term of				
			geometric sequences (r^n, where				
			n is an integer and r can be a				
			surd)				
			53.3,				
		Unit 2: Solving	Expand double and triple	A1	Expand	Year 8	
		quadratics	brackets	A2	Factorise	Unit 9: Algebraic	
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		A13	Quadratic formula	manipulation	
			Solve quadratics by factorising,		Inequality	Year 9	
			quadratic formula and		Complete the square	Unit 4: Algebraic	
			completing the square including			manipulation	
			completing the square meluung			Unit 8: Solving equations	
						Offic of Solving Equations	

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

	Use the standard circle theorems to find a missing angle including in a complex problem Prove the standard circle theorems				
3 Unit 6: Similarity and congruence	Use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS) Prove two triangles are congruent Find a missing side length in two shapes that are similar in the context of a problem Apply the concepts of similarity, including the relationships between lengths, areas and volumes in similar figures Prove two triangles are similar	R1 G9	Similar Congruent Scale Factor		Weekly HW Unit tests End of term cumulative assessment
Unit 7: Complex transformations of shapes	Recap transformations of 2D shapes Enlargements including negative and fractional scale factors	G1 G2	Transformation Rotation Reflection Enlargement Translation Scale Factor Vector Centre	Year 8 Unit 12: Transformations	
Unit 8: Conditional probability	Calculate probabilities from a two way table, including conditional probabilities	P1 P2 P3	Probability Independent Mutually Exclusive	Year 8 Unit 8: Probability	

	Complete Venn diagrams, including when the intersection needs to be calculated Find conditional probabilities from a Venn diagram Complete probability tree diagrams and find probabilities	P4 N1	Exhaustive Conditional Venn diagram Probability tree Two-way table		
4 Unit 9: Volume and algebra	Volume and surface area of cubes, cuboids, prisms including cylinders Volume and surface area of pyramids, Spheres, Hemispheres, cones and frustums Apply Pythagoras to cone problems Apply algebra to the formulae for volume and surface area of a complex solids to solve problems	G5 G8 G9 G10 A12	Cube Cuboid Prism Pyramid Cone Sphere Frustum Surface area Volume	Year 8 Unit 5: 3D Shapes Year 9 Unit 7: 3D Shapes	Weekly HW Unit tests End of term cumulative assessment
Unit 10: Bounds and compound measures	Use inequality notation to specify simple error intervals due to rounding and truncation Find upper and lower bounds Convert compound units Speed distance time including graphs Density, mass and volume	N2 N8 R1 R2	Error interval Upper bound Lower bound Truncate Estimate Compound unit Speed Density Mass Volume Force Pressure	Year 8 Unit 3: Rounding and estimation Unit 6: Compound measure	

		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	Interpret and calculate quartiles and interquartile range Find the interquartile range from a stem and leaf diagram Construct, complete and interpret box plots Compare boxplots Construct and interpret a cumulative frequency diagram Construct and interpret a histogram with unequal class widths Estimate from a histogram Apply statistics to a capture and recapture problem	\$1 \$2 \$3 \$4 \$5 \$6	Lower Quartile Upper Quartile Interquartile range Histogram Cumulative frequency Boxplot Frequency polygon	Mainly new content but the following previous chapters may be helpful Year 7: Working with data Year 8 Unit 13: Statistics Year 9 Unit 11: proportion	Weekly HW Unit tests End of year assessment (Mocks)
Year 11 Higher	1	Unit 1: Functions and iteration	Show that a complex equation has a solution between two values Find a given xn using iteration Find approximate solutions to equations using iteration, including using suffix notation in recursive formulae Obtain the output or input of a function using function notation	A3 A11 R6	Iteration Function Inverse function Composite function	New content but substitution and rearranging skills from previous years will be required for this unit	Weekly HW Unit tests

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

	Use vectors to construct				
	geometrical proofs (lines are				
	parallel, points lie on a straight				
	line)				
Unit 5: Real life	Complete and read distance-time	A8	Velocity	Year 8	
graphs and rates	and speed-time graphs, and find	A9	Gradient	Unit 6: Compound	
of change	the speed from a distance-time	R4	Acceleration	measures	
	graph	R5	Tangent	Year 10	
	graph	S2	Trapezium	Unit 10: Compound	
	Find the average speed or	32	Time Series		
	Find the average speed or		Time Series	measures	
	acceleration on non-standard				
	real-life distance-time or speed-				
	time graphs				
	Estimate the speed or				
	acceleration on non-standard				
	real-life distance-time or speed-				
	time graphs by finding the				
	gradient of a tangent				
	gradient of a tangent				
	Find the areas under line graphs				
	and interpret the results				
	Estimate the areas under curved				
	graphs and interpret the results				
	Interpret line graphs for time				
	series data				
				Mainly new content but	
Unit 6: Algebraic	Use algebra to construct	A2	Identity	previous algebraic units	
proof	arguments and prove identities		Proof	will be helpful	
	, , , , , , , , , , , , , , , , , , ,			Year 8	
	Disprove by counterexample			Unit 9: Algebraic	
	Displace by counterexample			manipulation	
	Eveross a number property using			Year 9	
	Express a number property using				
	algebra			Unit 4: Algebraic	
	Construct simple algebraic proofs			manipulation	

		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	GCSE Specification		
	from the mocks	Gest specification		
	analysis and a			
	focus on past			
-	papers	CCCE Consideration		
5	Tailored revision	GCSE Specification		
	with a focus on			
	past papers			
6	Tailored revision	GCSE Specification		
	for paper 2 and 3			