

Higher GCSE Maths Course Outline

1 & 2	3, 4 a/ b	Learning objective	MW clip	R	A	G
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A u t u m n 1	A u t u m n 1	UNIT 1: Number				
		LO1: To be able to solve problems using numerical reasoning	58, 69, 92			
		LO2: To be able to round numbers using significant figures and estimate	90, 91			
		LO3: To be able to find and apply HCF and LCM	78, 79, 80			
		LO4: To be able to calculate using integer indices	29, 82, 131			
		LO5: To be able to calculate using fractional and negative indices	154, 188			
		LO6: To be able to express numbers in and calculate using standard form	83			
		LO7: To be to simplify surds	207 a, b, c			
Unit 1 Assessment		Fine Grade				

Autumn form os t n 1	Autumn n 1/2	UNIT 2: Algebra				
		LO1: To be able to simplify algebraic expressions using indices rules	34, 35, 82, 154, 188			
		LO2: To be able to expand and factorise single brackets	93, 94, 134a			
		LO3: To be able to solve equations (including brackets and with fractions)	135a			
		LO4: To be able to substitute into and rearrange formulae	95, 136			
		LO5: To be able to form and use the nth term of a linear sequence	37, 102, 103			
		LO6: To be able to form and use the nth term of a non-linear sequence	163, 213, 104, 141			
		LO7: To be able to expand double brackets and factorise quadratics incl DOTS	134b, 157, 158			
Unit 2 Assessment		Fine Grade				

A u t u m n 2	A u t u m n 2	UNIT 4: Fractions, Ratio and Percentages					
		LO1: To be able to apply all operations to fractions and mixed numbers	71, 73, 74				
		LO2: To be able to simplify, compare and problem solve with ratios	106, 107, 156, 165abc, 200 a,b,c				
		LO3: To be able to recognise and use direct proportion	42, 105				
		LO4: To be able to solve percentage change problems incl reverse percentages	108, 109, 110				
	LO5: To be able to convert between fractions, decimals and percentages incl recurring decimals and reciprocals	76, 84, 85, 177, 189					
Unit 4 Assessment			Fine Grade				

Autumn 2	Spiral 1	UNIT 5: Angles and Trigonometry				
		LO1: To be able to use angle properties including in triangles quadrilaterals and parallel lines	45, 120, 121,122			
		LO2: To be able to calculate interior and exterior angles of polygons	123			
		LO3: To be able to use Pythagoras to calculate the length of a side of a right angled triangle and solve problems	150 a, b, c			
		LO4: To be able to use trigonometry to calculate an angles and sides in a right angled triangle	168			
		LO5: To give exact values of trig ratios and use to solve problems	173			
Unit 5 Assessment		Fine Grade				

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S p r i n g 1 / 2	S	UNIT 6: Graphs				
	P	LO1: To be able to plot a linear graph and solve problems involving $y=mx+c$	96, 97, 99, 159a,b			
	R	LO2: To be able to solve problems involving line segments	133			
	I	LO3: To be able to solve problems involving parallel and perpendicular lines	208			
	N	LO4: To be able to plot and interpret the graph of a quadratic function	98, 99			
	G	LO5: To be able to use a graph to solve $ax^2+bx+c = 0$	160			
	1	LO6: To be able to recognise and plot cubic and reciprocal graphs	161			
	/	LO7: To be able to plot and recognise the equation of a circle	197			
	2	LO8: To be able to draw and interpret distance - time graphs	143			
		LO9: To be able to draw and interpret velocity - time graphs	216a			
Unit 6 Assessment			Fine Grade			

S p r i n g 1 / 2	S	UNIT 9: Equations and Inequalities				
	P	LO1: To be able to set up and solve quadratic equations by factorising incl DOTS where $a = 1$ ($ax^2+bx+c=0$)	157, 158			
	R	LO2: To be able to solve quadratic equations by factorising incl DOTS where $a > 1$ ($ax^2+bx+c=0$)	192			
	I	LO3: To be able to set up and solve quadratic equations using the quadratic formula	191			
	N	LO4: To be able to set up and solve quadratic equations by completing the square	209a, 209b			
	G	LO5: To set up and solve simultaneous equations using elimination	162			
	1	LO6: To be able to solve simultaneous equations where one is quadratic	211			
	/	LO7: To be able to solve linear inequalities	138, 139			
	2					
Unit 9 Assessment			Fine Grade			

S u m m e r 1	S	UNIT 7: Area and Volume				
	U	LO1: To calculate area and perimeter of 2D shapes, incl circles and compound shapes	52, 53, 54, 55,56, 117, 118			
	M	LO2: To convert between metric units of length, area, volume	112			
	M	LO3: To calculate volumes of prisms incl. cylinders	115, 119			
	E	LO4: To be able to calculate surface area of prisms incl cylinders	114a, 114b, 118			
	R	LO5: To calculate area and perimeter of sectors of circles	167			
	1	LO6: Calculate volume and surface area of spheres	169			
		LO7: To calculate surface area and volume of cones, frustums & pyramids	170, 171, 172,			
		LO8: Calculate error intervals including truncating, and upper and lower bounds	132, 155, 206			
Unit 7 Assessment			Fine Grade			

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S u m m e r 1	S u m m e r 1	UNIT 8: Transformations and constructions				
		LO1: To be able to draw plans and elevations	51			
		LO2: To perform/describe reflections, rotations and translations	48, 49, 50			
		LO3: To be able to perform and describe enlargements	148, 181b			
		LO4: To be able to perform and describe combinations of transformation	182			
		LO5: To be able to solve problems involving bearings and scale drawings	38, 124			
		LO6: To be able to construct lines and angles using a ruler and compass	145a, b, c 147			
		LO7: To be able to draw a locus and solve problems involving loci	146			
Unit 8 Assessment			Fine Grade			

S u m m e r 2	S u m m e r 2	UNIT 10: Probability			
		LO1: To be able to use a sample space to list outcomes and solve problems	58, 69, 126		
		LO2: To be able to calculate with mutually exclusive events	60		
		LO3: To be able to calculate experimental and theoretical probabilities	125		
		LO4: To be able to calculate probabilities using frequency and probability diagrams	57, 151		
		LO5: To be able to calculate probabilities of independent events	175, 204		
		LO6: To be able to calculate probabilities of dependent events	204		
		LO7: To be able to use Venn diagrams and set notation	127, 185		
Unit 10 Assessment			Fine Grade		

S u m m e r 2	S u m m e r	UNIT 3: Interpreting and Representing Data				
		LO1: To be able to construct and interpret stem and leaf diagrams	128b			
		LO2: To be able to construct and interpret pie charts	128a			
		LO3: To be able to plot and interpret frequency polygons	65b			
		LO4: To be able to plot and interpret time series graphs	153			
		LO5: To be able to construct and interpret scatter graphs	129			
		LO6: To be able to calculate averages from frequency tables	130a, 130b			
	2	2	LO7: To be able to construct and interpret two-way tables	61		
Unit 3 Assessment				Fine Grade		

S u m 2	A u t 1	UNIT 11: Multiplicative Reasoning				
		LO1: To be able to use repeated percentage change for growth and decay	164			
		LO2: To be able to use compound measures for rates of change	142			
		LO3: To be able to use compound measures for pressure and density	142			
		LO4: To be able to calculate using direct and inverse proportion	199			
Unit 11 Assessment			Fine Grade			

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A u t u m n 1	A u t u m n 1/2	UNIT 12: Similarity and Congruence				
		LO1: To be able to prove that triangles and shapes are congruent or similar	166,144			
		LO2: To prove shapes are congruent using geometric reasoning	166			
		LO3: To be able to calculate missing lengths on similar shapes	144			
		LO4: To use linear, area and volume scale factors to solve problems	201			
		Unit 12 Assessment	Fine Grade			
Unit 12 Assessment			Fine Grade			

A u t u m n 1	A u t u m n 1/2	UNIT 13: More Trigonometry				
		LO1: To be able to plot, translate and reflect the graphs of sine, cosine and tangent	195a, b, 196b			
		LO2: To be able to use the sine rule and cosine rule to find lengths and angles	202a, b,			
		LO3: To be able to use the sine and cosine rules to solve multi step problems (including with bearings)	202a, b 124			
		LO4: To be able to calculate the area of any triangle	203			
		LO5: To be able to solve problems in 3D using Pythagoras and trig	217, 218			
Unit 13 Assessment			Fine Grade			

A u t u m n 2	A u t u m n 2	UNIT 14: Further Statistics				
		LO1: To be able to take random and stratified samples incl capture recapture	152, 176			
		LO2: To be able to draw and interpret cumulative frequency diagrams	186			
		LO3: To be able to draw and interpret box plots	187			
		LO4: To be able to draw and interpret histograms	205			
		LO5: To be able to compare two sets of data				
Unit 14 Assessment			Fine Grade			

A u t u m n 2	S p r i n g 1	UNIT 15: Equations and Graphs				
		LO1: To be able to solve simultaneous equations graphically	140			
		LO2: To be able to represent and solve inequalities on a graph (incl quadratic)	198, 212			
		LO3: To be able to draw/sketch quadratic functions (incl turning points and intercepts)	98, 160			
		LO4: To be able to solve quadratic equations graphically	160			
		LO5: To be able to solve polynomial equations using iteration	179,180			
		LO6: To be able to expand three brackets, sketch and find roots of cubic equations	178, 160, 161			
Unit 15 Assessment			Fine Grade			

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S p r 1	S p r 1	UNIT 16: Circle Theorems				
		LO1: To be able to solve problems with radii, chords and angle properties within a circle and semi circle	183			
		LO2: To be able to solve problems using facts about tangents to circle	183			
		LO3: To be able to solve problems using angles in cyclic quadrilaterals	183			
		LO4: To be able to apply circle theorems to solve complex problems	183			
		LO5: To be able to prove circle theorems	184			
Unit 16 Assessment			Fine Grade			

S p r i n g 1	S p r i n g 1	UNIT 17: More Algebra				
		LO1: To be able to rearrange formula with powers and where the subject appears twice	190			
		LO2: To be able to simplify algebraic fractions	210a			
		LO3: To be able to add, subtract, multiply and divide algebraic fractions	210a			
		LO4: To be able to solve equations that involve algebraic fractions	210b			
		LO5: To be able to simplify surds including rationalising the denominator	207a, b,c			
		LO6: To be able to evaluate functions and find composite and inverse functions	214a, b 215			
		LO7: To be able to prove a result using algebra	193			
Unit 17 Assessment		Fine Grade				

S p r i n g 2	S p r i n g 2	UNIT 18: Vectors and Geometric Proof				
		LO1: To be able to use vector notation, represent vectors graphically and calculate using vectors	174			
		LO2: To be able to use the resultant of two vectors to solve problems including with parallel lines	219			
		LO3: To be able to prove lines are parallel and points are collinear	219			
		LO4: To be able to solve geometric problems using vectors and apply vectors for proofs.	219			
Unit 18 Assessment			Fine Grade			

S p r i n g 2	S p r i n g 2	UNIT 19: Proportion and Graphs			
		LO1: To be able to write and use equations to solve problems involving direct proportion	199		
		LO2: To be able to write and use equations to solve problems involving inverse proportion	199		
		LO3: To be able to recognise and sketch graphs of exponential functions	194		
		LO4: To be able to calculate the gradient of a tangent and estimate the area under a non-linear graph	216b		
		LO5: To be able to translate and reflect function graphs	196a		
Unit 19 Assessment			Fine Grade		

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