

AQA Further Maths Overview.

Autumn 1	Calculus (8 hours) (Started in year 10 as a contrast to the current syllabus)	The gradient of a curve
		Differentiation
		Differentiation using standard results
		Tangents and normal
	Number and algebra 1 (7 hours)	Numbers and the number system
		Simplifying expressions
		Solving linear equations
		Algebra and number
		Expanding brackets
		The binomial expansion
		Manipulating surds
		The product rule for counting
	Algebra 2 (5 hours)	Factorising
Rearranging formulae		
Simplifying algebraic fractions		
Solving linear equations involving fractions		
Completing the square		
Autumn 2	Algebra 3 (7 hours)	Function notation
		Domain and range of a function
		Composite functions
		Graphs of functions
		Graphs of linear functions
		Finding the equation of a line
		Graphs of quadratic functions
	Algebra 4 (9 hours)	Inverse functions
		Graphs of exponential functions
		Graphs of functions with up to three parts to their domains
		Quadratic equations
		Simultaneous equations in two unknowns
		The factor theorem
Spring 1	Algebra 4 (9 hours)	Linear inequalities
		Quadratic inequalities
		Indices
		Algebraic proof
		Sequences
	Coordinate Geometry (5 hours)	Limiting value of a sequence
		Simultaneous equations in three unknowns
		Parallel and perpendicular lines
		The distance between two points
		The midpoint of a line joining two points
Equation of a straight line		

		The intersection of two lines
		Dividing a line in a given ratio
		Equation of a circle
		Mensuration
		Pythagoras' theorem
		Angle facts
		Circle theorems
		Geometric proof
		Trigonometry in two dimensions
		Trigonometric functions for angles of any size
		The sine and cosine graphs
		The tangent graph
		Solution of trigonometric equations
		Trigonometric identities
Spring 2	Geometry 4 (4 hours)	The area of a triangle
		The sine rule
		The cosine rule
		Using the sine and cosine rules together
		Problems in three dimensions
		Lines and planes in three dimensions
	Matrices (4 hours)	Multiplying matrices
		Transformations
		The identity matrix
		Transformations of the unit square
		Combining transformations