

Crossover Tier

Term	Week	Lessons	Coding refers to AQA Teaching Guidance Sections. Underlined parts should be a main focus.
Autumn 1	1 and 2	6	Algebra: further quadratics, rearranging formulae and identities A4, A5, A6, A7
			Recap of manipulating expressions - collecting like terms, multiplying over a single bracket, factorising single bracket
			Expanding double brackets
			Factorise quadratics and include simplifying algebraic fractions (A4 and A4h)
			Show that two expressions are equivalent (A6). Option to look at proof (A6h)
			Formulae - change the subject and substitute values into a formulae (A5)
			Functions - introduction to function notation and inputs and outputs (A7) - Option to extend to A7h (composite and inverse)
	3	2 or 3	Trigonometry recap and extension G20, G21, G6, R12
			Recap of Pythagoras and trig ratios in right angled triangles
			More practice with trig ratios (option to extend to 3D - G20h) and include exact values (G21)
			Revision lesson for pre-mock
	4	4 or 5	Growth and Decay R16
			Recap of percentage change and reverse percentages with a multiplier.
			Repeated proportional change using a multiplier and a power, including compound interest
			Set up growth and decay calculations and use them to solve problems. Understand the limits of and assumptions used in modelling exponential growth (R16h)
	5 and 6	6	Circle Theorems G10h (option for foundation students to revise foundation angles & geometry)
			Names of parts of a circle. Triangle formed by two radii is isosceles. A tangent makes a right angle.
			The angle in a semi-circle is a right angle. A diameter bisects a chord at right angles.
			The angle at the centre is double the angle at the circumference. Angles subtended by an arc in the same segment are equal
			Cyclic quadrilaterals
			Two tangents from a single point are the same length and Alternate Segment Theorem
	7	3	Equation of a circle A16h
			Revision of finding gradient of parallel and perpendicular lines and equation of line when given two points
			Introduction to the equation of a circle. Sketch circles and determine radius from the equation (and vice versa)
			Finding the equation of a tangent to a circle at a given point

Autumn 2	8 and 9	6	Sine and cosine Rule G22h, G23h OR More practice on Foundation Pythagoras, Trigonometry and geometry
			Sine rule to find missing lengths
			Sine rule to find missing angles
			Cosine rule to find missing lengths
			Cosine rule to find missing angles
			Area = $\frac{1}{2}ab\sin C$
			Revision if time allows
	10 11	8	Mock Exams Fortnight
	12 and 13	7	Vectors G25
			Vector and scalar definition and notation. Draw vectors (and their scalar multiples, include neg). Determine if two vectors are parallel
			Addition and subtraction of vectors including drawing the vectors and the resultant
			Intro to vector geometry problems.
			More vector geometry problems including midpoints and ratio
			Option to extend to higher vectors questions - Using vectors to prove that 3 points are colinear (G25h)
	14	4 or 5	Catch up and start Quadratics
			Recap factorising quadratics
			Solving quadratic equations by factorising
Spring 1	15	4 or 5	Continue Quadratics
			Recap factorising quadratics
			Solving quadratic equations by factorising, link to graphs
	16 and 17	7	Further Quadratic Equations and Graphs A11, A17, A18, A12,
			Solve quadratic equations by completing the square (A11h & A18h)
			Solve quadratic equations using the quadratic formula (A18h)
			More practice solving quadratics using the 3 methods and linking to the properties of the graph
			Algebra practice as required depending on pre-mock.
			More practice of foundation algebra
			or spend more time on the higher algebra topics covered.
	18	3	Inequalities A22
			Solve linear inequalities and represent the solution on a number line. Write a list of integers that satisfy an inequality
			Represent inequalities on a coordinate grid. Use dashed/solid lines and determine the feasible region
			Optional: Quadratic inequalities (A22h)
	19 and 20	7	Direct and Inverse Proportion (R12 & R13)
			Direct proportion (unitary method to solve problems in context)
			Inverse proportion (unitary method to solve problems in context)
			Direct proportion with algebra
			Inverse proportion with algebra
			Recognise and interpret graphs that illustrate direct and inverse proportions

Spring 2	21	4	Part 1 - Further Sketching Graphs A12 & A12h (Tier dependent - Recap linear graphs if needed)
			Recognise, draw and interpret exponential graphs
			Further practice on exponential graphs. Link back to growth and decay
			The sine graph.
			The cosine graph
	22 23	6	2nd Mocks
	24	4	Part 2 - Further Sketching Graphs A12 & A12h (Tier dependent - Recap linear graphs if needed)
			The tangent graph.
			Recap of quadratic, cubic and reciprocal graphs
			Mix of questions on this topic as needed depending on group
			Should now know final tier of entry. The remaining new content is for Higher only.
	25	4	Transforming Functions A13h
			Translate functions
			Reflect functions
			Mix of transformations and functions (including trig)
			Further practice of graph sketching and transforming if 4th lesson
	26	4	Algebraic Fractions (A4h)
			Simplify algebraic fractions by factorising the numerator and denominator
			Multiplying and dividing algebraic fractions (express as a single fraction)
			Adding and subtracting algebraic fractions (express as a single fraction)
Summer 1	27	3	Numerical Methods A20h
			Find an approximate solution to an equation (change of sign) including giving answer to 1dp
			Further practice on finding an approximate solution to an equation (change of sign) including giving answer to 1dp
			Recursive iteration
	28	3	Gradients and rate of change (R14h, R1h)
			Interpret gradient of a straight line as the rate of change and use in context
			Draw a chord and use to calculate the average rate of change between two points
			Draw a tangent to a curve and calculate the gradient at that point
	29-32		Catch up and Revision