Y9 Scheme of Work – AQA GCSE Maths 8300

Higher Tier

Term	Week	Lessons	Coding refers to AQA Teaching Guidance Sections.
Autumn 1	1	3	**Angles: G1, G3**
			Recap of: language, notation, labelling, drawing from descriptions, angles at a point, line, vertically opposite.
			Alternate and corresponding angles on parallel lines
			Extend all the above to problems linked to algebra including solving equations
	2	4	**Factors and Multiples: N4, N5**
			Recap: prime, factor, multiple, common factor/multiple, HCF, LCM, prime factor decomposition
			Find factors, multiples, HCF, LCM of algebraic expressions
			Use systematic listing strategies and the product rule for counting
			KPI Task: C1 and E1
	3	3	**Basic Number: N1, N2, N3, N14**
			Recap: order positive/ negative numbers, 4 ops with integers, financial terms, opposite operations, St Form
			Estimate answers to calculations
			Show inequalities on a number line
	4	3	**Scale Diagrams and Bearings: R2, G15**
			8 compass points, 3 figure bearings
			Scale diagrams with bearing, link to reminder of parallel lines rules
			Use and interpret maps, scales factors including 1:25000000 type
	5	3	**Basic Algebra: A1, N3, A3, A4**
			Use and interpret algebraic notation. BIDMAS to include powers, roots and reciprocals
			Understand expression, equation, formulae, identity, inequality, term, factor. Collect like terms. Multiply single term over a bracket, take out common factor
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	6	3	**Basic Fractions: N1, N2, N8**
			Recap ordering fractions and 4 operations, include negatives
			Find midpoint of 2 fractions, which fraction is closest to 1, area calculations, averages of fractions
			Apply 4 rules to simple algebraic fractions
	7	3 or 4	EXAM WEEK

Autumn 2			
	8 and 9	6	**Collecting and Representing Data: S2, S4, S3**
			Primary data, secondary data, discrete data, continuous data. Recap basic diagrams / tables
			Interpret construct and compare pie charts
			Tables and line graphs for time series data
			Box plots from numerical data, including median, LQ, UQ, IQR
			Cumulative Frequency graphs
			Interpret, analyse and compare distributions for discrete, grouped and continuous data
	10	4	**Coordinates and Linear Graphs: A8, G11, A9**
			Recap horizontal, vertical y=x y=-x Find coordinates for straight lines explicit and implicit equations
			Use y= mx+c to identify parallel lines
			Equations of perpendicular lines
			Find the Equation of line through 2 points, or through one point given the gradient
			KPI Task: C2 and E2
	11	3	**Basic Decimals: N1, N2, N10**
			Recap ordering decimals, including negatives, apply 4 Rules to decimals
			Extend to converting fractions to decimals, non-calculator
			Extend to identifying terminating and recurring decimals, link to prime factors of denominator
	12	3	**Rounding: N15, N16**
			Recap rounding to decimal places and SF. Include truncating and rounding
			Use inequality notation for error intervals, limits of accuracy
			Extend to upper and lower bounds
	13	3	**Sequences: A23, A24**
			Recap generating and rules of linear sequences, term to term and position to term. Include Fibonacci
			Quadratic sequences, extend to negative coefficient of x squared
			Simple geometric progressions, extend with surds
	14	3	**Financial Maths**
			Includes one Pod lesson

Spring 1	15 and 16	5 or 6	**Basic Percentages: R9, N12** **To include percentages > 100%**
			Recap finding percentage of amounts, with and without calculators, use a multiplier, one quantity as percent of another
			Compare quantities using percentages (include converting fractions and decimals)
			Extend to increase / decrease using multipliers. Simple interest.
			Reverse % questions for increase and decrease.
			Extend to compound interest
			KPI tasks: C3 and E3
	17 and 18	5 or 6	**Perimeter and Area: G12, G17, G16, G17**
			Recap names and properties of 3D shapes: faces, edges, vertices. Recap area of triangle, parallelogram and trapezium
			Practise area of 2D, and composite. Extend to include area of rhombus and kite
			Surface area of prisms and composite solids
			Surface area of pyramids
			Above skills linked with algebra
			KPI tasks: C4 and E4
	19 and 20	6	**Real Life Graphs: A14, R14**
			Plot and interpret distance time graphs
			Find gradient of distance-time graph to give speed
			Plot and interpret real life graphs that are reciprocal and exponential
			Extend to look at speed time graphs - plot and interpret
			Find instantaneous rate of change of a curve by using tangent, for speed-time graph this gives acceleration
			Extend to find area under a speed time graph to give total distance travelled

Spring 2	21 and 22	6	**Circumference and Area: G9, G17**
			Recap names and definitions of parts of circle and simple circumference and area problems
			Use circumference and area formulae with composite shapes, and simple sectors
			Reverse style questions using circumference and area formulae
			Calculate arc length, angles and areas of sectors - extend to reverse style
			Surface area of spheres, cones and composite solids
			Link the above to rearranging formulae. Extend to '2solids have the same SA, find missing length' style
	23 and 24	7	**Equations: A2, A17**
			Substitute values into formulae and expressions, include scientific and extend to unfamiliar
			Substitute into unfamiliar formulae, and where the formulae need to be rearranged
			Recap solving equations with unknowns on both sides, include brackets
			Solve equations with unknowns on both sides where negative coefficient of largest term, fractions, decimal/fractional solutions.

			Extend to solve equations with algebraic fractions
			KPI task: C5 and E5
	25	3	**Ratio and Proportion: N11, R3, R4, R5, R6, R7, R8**
			Recap basics of ratio: simplifying, sharing, link to fractions, if x:y is 3:2 then 2x = 3y
			Extend to 3-part ratios, knowing the difference between parts, combining ratios to solve problems
			Value for money and best buy problems
	26	4	**Scatter graphs: S6**
			Use and interpret scatter graphs, know correlation terms, know that correlation is not causation
			Draw estimated lines of best fit, make predictions
			Understand interpolation and extrapolation. Extend to time series
			KPI task: C6 and E6

Summer 1	27 and 28	4 or 5	**Indices: N6, N7**
			Recap squares, cubes, roots, powers of 10. recognise powers of 2, 3, 4, 5
			Estimate powers and roots of positive numbers. Can extend to negatives, fractions
			Rules of indices, with numbers, letters and both
			Extend to look at meaning of fractional / negative indices. Use index rules with these
			Perform calculations with integer and fractions indices. Extend to include negatives
	29 and 30	6	**Pythagoras: G20**
			Know and use the Pythagoras formula and use the find missing lengths
			Practice using Pythagoras with real life problems
			Extend to include lengths given as algebra or surds
			Extend to find distance between 2 coordinates, and reverse style to find missing part of coordinate
			Extend to 3D Pythagoras
			Summary lesson
	31 and 32	4 or 5	**Standard Form: N2, N9**
			Recap writing large and small numbers in and out of standard form
			Perform calculations involving use of calculator and interpreting calculator display
			Perform calculations using a written method
			Extend to link to compound measures calculations
			Summary lesson if needed

Summer 2	33 and 34	6	**Transformations: G7, G24 in all lessons link to congruent and similar shapes**
			Recap common equations of lines and perform / describe reflections
			Perform / describe rotations
			Perform / describe enlargements - include fractional and negative scale factors
			Perform / describe translations using a column vector
			Problems involving combined transformations and those needing a 'single transformation' answer
			Understand invariance with rotations, translations and reflections
	35 and 36	6	**Basic trigonometry: G20, R12**
			Introduce the 3 trig ratios. Conventions for labelling sides. Start to find missing lengths
			Find missing lengths where x or division is needed, extend to problem style situations
			Find missing angles, extend to problem style situations
			Extend to include a mix of Pythagoras and Trigonometry
			Extend to include 3 dimensional situations
			Extend to include method for finding exact trig values for 30, 45, 60, 90
	37 and 38	4 or 5	**Basic Probability: P1, P4, P7**
			Recap of using tables, sample space diagrams and frequency trees to find probabilities
			Recap of: mutually exclusive, sum to 1 for exhaustive set of outcomes, (relative frequency)
			Extend to include constructing Venn diagram from given information and use to find probabilities
			Extend to include constructing 2-way table from given information and use to find probabilities
			Extend to introduce tree diagrams
	39	3	**Financial Maths**
			Includes one Pod lesson