Y10 Scheme of Work – AQA GCSE Maths 8300

Higher Tier

Term	Week	Lessons	**Autumn 1 - 7 weeks - All sets studying the same topics (the only higher content is box plots & cumulative frequency)**
Autumn 1	1 and 2	6	**Calculating with Percentages: R9**
			Recap of basic percentages - FDP equivalents, one amount as a percentage of another and percentage of an amount (both with and without a calculator)
			Finding the percentage change when given the amounts
			Percentage increase and decrease. By addition & subtraction and with a multiplier.
			Simple interest (and more practice with use of multipliers). (compound interest and repeated change isn't until year 11)
			Reverse percentages (finding the original value)
			Mixed exam questions on all percentages
	3	3 or 4	**Measures: N16, G14, N13, R1, R11**
			Revision of metric units used for used for length, volume, mass and their metric conversions. Speed calculations (including using time in different units and decimal time)
			Compound measures - Density and pressure. Rate of pay and rate of flow.
			Upper and lower bounds with measures (N16)
			Mixed exam question practice on these topics
	4 and 5	6	**Statistical Measures: S4, S4h, S5, S1**
			Revise finding mean, median, mode and range from a list, a frequency table and a grouped frequency table. Revise meaning of discrete & continuous and the benefits & limitations of grouped data.
			Sampling - definition of sample/population, methods of sampling, using sample data to predict for population (S1)
			Higher: Find median, UQ, LQ and IQR from a small data set (1 less than a multiple of 4). Draw a box plot. Compare two box plots
			Higher: Draw a cumulative frequency graph and use it to find median, LQ, UQ, IQR and estimate the number of values above or below a given value
			Which is the best average and measure of spread? Definition of outlier and adv/disadvantage of range vs IQR and mean vs median
			Mixed exam questions on statistics
	6	3 or 4	**2D representations of 3D shapes: G13**
			Revise names of 3d shapes and faces, edges & vertices. Draw plan, front and side elevation of cube, cylinder, cone, prism etc
			Nets - draw nets of 3D shapes. Interpret nets and predict the 3D shape they will make.
			Isometric drawing and plans and elevations with cubes
			Mixed exam questions on this topic or make some more 3d shapes from nets
	7	3 or 4	**Revision and assessment**
			Revision lesson
			Catch up time for any topics from this half term or number work

Autumn 2	8 and 9	6	**Properties of Polygons: G3, G4**
			Revise angle properties and angles in parallel lines (from year 9 week 1)
			Triangles - names & properties, calculating missing angles and sides (include algebra or Pythagoras recap to extend?)
			Quadrilaterals - names, properties and missing angle calculations
			Polygons (1) - Names of polygons and calculation of interior and exterior angles
			Mix of exam questions (including problem solving type) on angles in polygons and parallel lines
			Simultaneous Equations: A19, A21 (No quadratics yet)
	10 and 11	6	Revision of solving equations with unknown on both sides
			Solve simultaneous equations by elimination where one variable has the same coefficient
			Solve linear simultaneous equations by elimination where neither variable has the same coefficient
			Solve simultaneous equations by substitution where one variable has the same coefficient
			Solve linear sim e.g. in context (forming the equations)
			Solve linear sim equations from graphs
			Construction and Loci: G2
	12 and 13	5	Construct triangles
			Construct perpendicular bisector, perpendicular from given point to line, perpendicular from point on line and parallel lines
			Construct angle bisector, 60 degree angle, 90 degree angle, 45 degree angle
			Construct loci and start to solve loci problems in context
			Revision lesson
	14	2 or 3	**Catch up week**
			More time on loci and constructions as needed
			Extra time to catch up on any topics from the term
			Number work or Christmas fun!
Spring 1			**Number: N10, N16, N7 - All Higher content**
			Convert recurring decimals to fractions and vice versa (N10h)
			Fractional indices & powers and roots (recap year 9 week 34) (N7h)
			Limits of accuracy and upper and lower bounds (N16h)
			Surds: N8h, A24h
	16 and 17	6	Simplifying surds
			Multiplying and dividing surds
			Adding and subtracting surds
			Multiplying brackets using surds
			Rationalising the denominator
			Geometric sequences with surds and recap of sequences (A24h)
			Probability: P2, P3, P5, P6, P8, P9 - The only higher content is conditional probability
	18 and 19	6	Recap of basic probability from year 9 including frequency trees & sample space
			Probability from experiments - relative frequency, expected frequency and deciding if outcomes are fair or biased (P2, P3, P5)

			The AND and OR rule and set notation with Venn diagrams & conditional probability from a Venn diagram
			Tree diagrams & conditional probability (P9H)
Spring 2	21 AND 22	8	**EXAM FORTNIGHT**
			Statistics Recap and Review: S3h
	23	3	Extra time on probability if needed
			Histograms (S3h)
			Histograms including find the median (S3h)
			Optional revision of any other statistics or probability topics
	24 AND 25	6	**Linear Graphs: A9, A9h, A10, A21 - The only higher content is perpendicular lines**
			Revise drawing straight line graphs from table of values and y = mx+c and gradient and intercept
			y = mx + c cont. Identify parallel and perpendicular lines
			y = mx + c cont. Find equation of line between two points and other problem-solving exam questions
			Set up linear equations to solve problems and solve them (A21)
			Mix of exam questions on solving linear questions and drawing and interpreting linear graphs
	26	3	**Congruence and Similarity: G5, G6, G19**
			Definition of congruence and conditions for congruent triangles, Proof of congruence in triangles
			Definition of similarity and identification of similar shapes
			Calculation of scale factor and missing sides and angles and perimeters in similar shapes (G19)
Summer 1	27	3	**Congruence and Similarity: G5, G6, G19**
			Mix of geometrical problem solving (G6) including Pythagoras and isosceles triangles
			Introduction to area and volume scale factor (G19h)
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	28 AND 29	6	**Volume: R12, G16, G17, N8**
			Volume of prisms (including cuboid, triangular and cylinder)
			Volume of prisms (including cuboid, triangular and cylinder) - including exact solutions with pi (N8)
			Volume of cones, spheres, pyramids - including exact solutions with pi (N8)
			Volume of cones, spheres, pyramids and frustums
			Revision lesson
	30 AND 31	5 or 6	**Introduction to Quadratics: A4, A4h**
			Recap of expanding and factorising single brackets
			Expanding double brackets
			Factorising quadratics
			Factorising quadratics including difference of two squares and where the coefficients of x^2 is not 1
			Simplifying algebraic fractions by factorising
	32	3 OR 4	Catch up

Summer 2	33, 34 and 35	7 - 9	**Quadratic Equations and their Graphs: A11, A18, A12**
			Solve quadratic equations by factorising (A18) (extension - including rearranging first)
			Plot quadratics and identify key features (axes intercepts, turning point, symmetry) (A11)
			Use factorising to sketch quadratics. Match quadratics graphs to equations (A12)
			Solve quadratic equations using graphs
			Solve quadratic equations using graphs (including drawing a suitable straight line to find solutions)
			Plot quadratics and use to approximate x values when e.g. y = 3. Link back to sim e.g. and find intercepts with linear graphs
	36 and 37	6	**Geometry and Measures Recap and Review: G7, G7h, G8h, G11**
			Transformations - Recap of Rotations, reflections and translations (G7)
			Transformations - Enlargements - including fractional and negative scale factors (G7h)
			Transformations including combinations and invariance (G8h)
			Solving geometrical problems on coordinate axes (G11)
			Extra mixed practice on transformations
	38 and 39	6	**Non-Linear Graphs: A12, A12h, A14**
			More time on quadratic graphs if needed
			Draw, sketch, recognise and interpret cubics (A12)
			Draw, sketch, recognise and interpret y = 1/x (A12)
			Draw, sketch, recognise and interpret exponential functions (A12h)
			Interpret linear and non-linear graphs in context e.g. height of ball / water flowing out of a tank (A14)
			Mix of exam question practice as required