Department / Syllabus Link: AQA GCSE Mathematics Foundation Level

	GCSE Unit, Topic or Summary of work covered	Knowledge & Skills Developed	Assessment	Personal Development
Autumn 1	Basic Number (N1, N2, N3, N14)	Apply the four operations to integers – both positive and negative. Recognise and use relationships between operations including inverse operations Check calculations using approximation and estimation, including answers obtained using technology	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
	Factors and multiples (N4, N5)	Use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation, and the unique factorisation theorem		
	Basic fractions (N1, N2, N8)	Apply the four operations, including formal written methods, to simple fractions (proper and improper) and mixed numbers - both positive and negative		
	Angles, constructions and loci (G1, G2, G3)	Use the conventional terms, notation, and apply the angle properties of triangles, quadrilaterals and parallel lines. Carry out the standard ruler and compass constructions.		
Autumn 2	Basic decimals and rounding (N1, N2, N10, N15, N16)	Apply the four operations, including formal written methods, to decimals – both positive and negative Work interchangeably with terminating decimals and their corresponding fractions. Round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures). Apply and interpret limits of accuracy.	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
	Statistical measures (S1, S4, S5)	Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate measures of central tendency and spread. Infer size of a population using sampling. Use statistics to describe a population.		

	Collecting and representing data (S2, S4)	Interpret and construct tables, charts and diagrams including frequency tables, bar charts, pie charts, pictograms, vertical line charts for ungrouped discrete numerical data tables and line graphs for time series data as well as know their appropriate use. Record, describe and analyse the frequency of outcomes of probability experiments using tables and frequency trees.		
	Basic probability (P1, P4, P7)	Construct theoretical possibility spaces for single and combined experiments with equally likely outcomes and use these to calculate theoretical probabilities.		

Spring 1	Basic algebra (A1, A3, A4)	Use the concepts and vocabulary of expressions, equations, formulae, identities, inequalities, terms and factors. Simplify and manipulate algebraic expressions.	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
	Equations (A2, A17)	Substitute numerical values into formulae and expressions, including scientific formulae. Solve linear equations in one unknown algebraically including those with the unknown on both sides of the equation		
	Quadratics, rearranging formulae and identities (A4, A5, A6, A7)	Understand and use standard mathematical formulae Rearrange formulae to change the subject Simplify and manipulate algebraic expressions by: expanding products of two binomials factorising quadratic expressions of the form $x^2 + bx + c$		
	Perimeter and area (G12, G16, G17)	Calculate the perimeter and area of common 2D shapes and composite shapes, including those involving circles or sectors. Calculate surface area of a 3D shape.		
Spring 2	Ratio and proportion (N11, R3, R4, R5, R6, R7, R8)	Apply ratio to real contexts and problems (such as those involving conversion, comparison, scaling, mixing and concentrations) Understand and use proportion as equality of ratios	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
	Scale diagrams and bearings (G15, R2)	Measure line segments and angles in geometric figures, including interpreting maps and scale drawings and use of bearings		

	Calculating with percentages (R9, N12)	Solve problems involving percentage change, including: percentage increase / decrease problems, original value problems, simple interest, including in financial mathematics		
Summer 1	Pythagoras' Theorem (G20) Indices and standard form (N2, N6, N7, N9) Sequences (A23, A24, A25)	Know the formula for Pythagoras' Theorem $a^2 + b^2 = c^2$. Apply it to find length in right angled triangles in two dimensional figures Calculate with roots and with integer indices Calculate with and interpret standard form Recognise and use: sequences of triangular, square and cube numbers, simple arithmetic progression, Fibonacci type sequences, quadratic sequences and simple geometric progressions. Deduce expressions to calculate the `nth term of a linear sequence	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
Summer 2	Volume (R12, G16, G17, N8) 2D representations of 3D shapes (G13) Probability (P2, P3, P4, P5, P6, P8)	Know and apply formulae to calculate the volume of cuboids and other right prisms, including cylinders, spheres, pyramids, cones and composite solids Construct and interpret plans and elevations of 3D shapes Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions Enumerate sets and combinations of sets systematically using tables, grids, Venn diagrams and tree diagrams	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	

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Autumn 1	Trigonometry (G20, G21, R12)	Know and use the trigonometric ratios and apply them to find angles and lengths in right-angled triangles in two-dimensional figures.	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
	Congruence and similarity (G5, G6, G19)	Apply and use the concepts of congruence and similarity, including the relationships between lengths in similar figures		
	Direct and inverse proportion (R10, R13, R14)	Solve problems involving direct and inverse proportion, including graphical and algebraic representations		
	Transformations (G7, G24)	Identify, describe and construct congruent and similar shapes, on co-ordinate axes, by considering rotation, reflection, translation and enlargement		
Autumn 2	Coordinates and linear graphs (A8, A9, A10, G11)	Solve geometrical problems on co-ordinate axes Plot graphs of equations that correspond to straight line graphs in the co-ordinate plane	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
	Sketching graphs (A12)	Recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions		
	Simultaneous equations (A19, A21)	Solve two simultaneous equations in two variables (linear / linear) algebraically		
Spring 1	Solving quadratic equations (A18)	Solve quadratic equations algebraically by factorising Find approximate solutions using a graph	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
	Quadratic graphs (A11, A12)	Recognise, sketch and interpret graphs of quadratic functions		
		Identify and interpret roots, intercepts and turning points of quadratic functions graphically		

	Properties of polygons (G3, G4)	Derive and use the sum of angles in a triangle (e.g. to deduce and use the angle sum in any polygon, and to derive properties of regular polygons)		
Spring 2	Measures (N13, N16, G14, R1, R11) Real life graphs (A14, R14) Growth and decay (R16) Inequalities (A22) Vectors (G25) Scatter graphs (S6)	Apply and interpret limits of accuracy Plot and interpret graphs (including reciprocal graphs) and graphs of non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration Set up, solve and interpret the answers in growth and decay problems, including compound interest Solve linear inequalities in one variable Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representation of vectors Use and interpret scatter graphs of bivariate data Recognise correlation and know that it does not indicate causation	Pupils will be assessed regularly through classwork, homework, end of topic tests and termly assessments.	
Summer 1	Revision and exam preparation			
Summer 2				