Curriculum Overview Maths

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Year 7		
Term	**Curriculum Content**	**Assessment**
Term 1	**Numeracy, Algebra & Number in Real Life**: Students build foundational numeracy and arithmetic fluency, exploring place value, operations, and estimation. Algebra is introduced through basic notation and simplifying expressions, while number work connects to real-life contexts such as money, measurement, and scaling. **Functions & Equations:** Learners develop understanding of functions and simple equations, representing relationships between quantities. **Percentages, Fractions and Decimals:** They deepen confidence with percentages, fractions, and decimals, focusing on equivalence and conversions to strengthen proportional reasoning.	Core Assessment DIRT
Term 2	**Ratio & Probability:** These topics focus on multiplicative relationships through ratio and proportion. Students also begin basic probability, understanding likelihood and simple outcomes. **Angles**: Geometry work includes classifying and calculating angles in various contexts. **Statistics:** Students are introduced to data handling — collecting, representing, and interpreting information using charts and averages. **Sequences:** Students also identify and describe number patterns, developing early algebraic reasoning through sequences.	Cumulative Assessment Assessment DIRT
Term 3	**Inequalities & Graphs**: The year concludes with introduction to inequalities and coordinate graphs. **Properties of Shape:** Learner's study 2D and 3D shape properties and relationships. **Pythagoras &Trigonometry**: Learners encounter Pythagoras' Theorem for the first time, applying it to right-angled triangles.	DIRT

Year 8		
Term	**Curriculum Content**	**Assessment**
Term 1	**Numeracy, Algebra & Number in Real Life:** Students revisit and strengthen core numeracy and algebra skills, applying them to problem-solving. They extend work on real-world number contexts, interpreting and estimating values across different situations. **Functions & Equations:** Algebraic manipulation becomes more complex, including solving linear equations. **Fractions, Decimals & Percentages:** Fraction, decimal, and percentage work focuses on multi-step and compound applications, ensuring accuracy and fluency across representations.	DIRT
Term 2	**Ratio, Probability & Angles:** Learners explore ratio and scaling in greater depth, applying ideas to geometry and proportion. Probability is extended to include experiments and predictions, while angle work revisits polygons and parallel lines. **Statistics & Sequences:** Students interpret a range of statistical representations and draw comparisons between data sets. Sequence work includes identifying term-to-term rules and using nth-term expressions for linear patterns.	Core Assessment DIRT
Term 3	**Inequalities, Graphs, Shape, Pythagoras & Trigonometry:** This final phase deepens algebraic reasoning with inequalities and graph plotting. Geometry topics consolidate understanding of shape properties and extend into practical applications of Pythagoras' Theorem.	Summative Assessment DIRT

Year 9		
Term	**Curriculum Content**	**Assessment**
Term 1	**Number, Algebra, Equations, FDP & Ratio:** This term consolidates KS3 fundamentals while introducing GCSE-style reasoning. Students strengthen number fluency, algebraic manipulation, and proportional reasoning, applying them in increasingly abstract and contextualised problems.	DIRT
Term 2	**Angles, Statistics, Sequence, Inequalities & Graphs:** Learners revisit key geometric reasoning, explore more complex statistical analysis, and extend work on sequences and inequalities. Graph work connects algebraic and geometric concepts, preparing students for coordinate geometry in KS4.	DIRT
Term 3	**Shape, Pythagoras & Trigonometry, Vectors & Transformations:** Students advance to complete KS3 learning by mastering geometric reasoning, trigonometric relationships, and transformations in 2D. Vectors are introduced, developing spatial understanding and precision.	Cumulative Assessment

KS4 (Y10/Y11)			
Term	**Curriculum Content**		**Assessment**
	Foundation	Higher	
Term 1	**Core Number, Algebra, Ratio, Probability, Geometry, & Statistics:** Foundation students consolidate and extend the key mathematical principles introduced at Key Stage 3, with a strong emphasis on developing **fluency, accuracy, and confidence in method selection**. They strengthen their understanding of number operations, working confidently with integers, decimals, fractions, and percentages. Students apply arithmetic and proportional reasoning to everyday contexts, including budgeting, measurement, and unit conversions. Work on powers and roots focuses on square and cube numbers, while standard form and estimation build numerical accuracy. In algebra, learners deepen their understanding of expressions, equations, and formulae. They practise simplifying expressions, expanding brackets, and solving linear equations, including those with unknowns on both sides. Sequences are explored through term-to-term rules and generating simple nth-term expressions. Students also begin to interpret linear graphs, recognising gradient and intercept as key features representing real-world relationships. Probability and statistics are introduced through practical and relatable examples. Learners represent probabilities using fractions and percentages, calculate simple combined probabilities, and construct frequency tables, bar charts, and scatter graphs to describe data. In geometry, students apply angle rules, properties of polygons, and symmetry, using geometric reasoning to explain results. Ratio and proportion are embedded throughout, supporting scaling, map work, and conversions between measures.	**Advanced Number, Algebra, Ratio, Probability, Geometry, & Statistics:** Higher tier students refine and extend their command of the number system, working with surds, indices (including fractional and negative powers), and standard form to ensure precision in complex calculations. They apply percentage and ratio reasoning to compound growth, direct and inverse proportion, and rates of change problems. Algebraic fluency is developed through expansion and factorisation of quadratic and cubic expressions, manipulation of algebraic fractions, and rearrangement of complex formulae. Students also solve linear, quadratic, and simultaneous equations (both linear–linear and linear–quadratic), and use function notation to describe mappings between variables. Probability and statistics are explored at greater depth, incorporating sample space diagrams, Venn diagrams, and tree diagrams to model combined and conditional probabilities. Statistical work includes comparing distributions, interpreting box plots, and analysing real-world data through cumulative frequency and histogram representations. Geometry builds on KS3 work through multi-step angle problems, proofs involving parallel lines and polygons, and algebraic reasoning within geometric contexts.	Year 11: Cumulative Assessment DIRT

Term 2	**Algebraic Reasoning, Graphical Techniques, Geometry, & Trigonometry:** In the spring term, Foundation students continue to link algebraic and graphical representations, building on linear relationships to include real-world graphs such as distance–time and conversion graphs. They extend equation solving to include simultaneous linear equations and explore inequalities on number lines and coordinate grids. Work on shape and space focuses on perimeter, area, and volume, including compound shapes and surface area of prisms. Basic trigonometry is revisited through right-angled triangles, enabling students to find missing lengths and angles using sine, cosine, and tangent ratios. The focus is on interpreting results sensibly within geometrical contexts. Students also explore circle geometry, including naming and identifying features such as radius, diameter, tangent, and chord. Work on scale drawings and bearings develops spatial reasoning and connects geometry to navigation and measurement. Throughout the term, students interpret and compare data sets, using averages and range to describe variation. They apply these statistical measures to solve practical problems, drawing conclusions from information presented in charts and graphs.	**Algebraic Reasoning, Graphical Techniques, Geometry, Trigonometry, & Circle Theorems:** The spring term consolidates students' ability to model and interpret relationships graphically. They study the properties of linear, quadratic, cubic, reciprocal, and exponential graphs, analysing gradients as rates of change and interpreting intercepts within context. Inequalities are solved and represented graphically, and simultaneous equations are solved algebraically and using intersection points on graphs. In geometry, students extend their understanding of shape through formal proofs involving congruence and similarity, and by solving problems using the sine and cosine rules and area of triangles formula. Trigonometric equations are solved algebraically and applied to non-right-angled triangles. Circle theorems are introduced, and learners use formal reasoning to prove and apply relationships involving tangents, chords, and radii. This term develops the ability to justify conclusions using mathematical arguments and to structure solutions using logical steps — key requirements of the GCSE higher tier.	Year 11: Cumulative Assessment DIRT

Term 3	**Transformations, Constructions, & Functional Maths:** In the summer term, the focus shifts to applying mathematics in more open-ended and functional contexts. Students perform and describe transformations — reflections, rotations, translations, and enlargements — on coordinate grids, identifying invariant points and lines of symmetry. They revisit accurate construction skills learnt at KS3, using a compass and ruler, drawing perpendicular bisectors, angle bisectors, and expand to loci representing real-world constraints. Students revisit number and algebra through problem-solving tasks that combine multiple strands, encouraging them to interpret worded problems, plan strategies, and check the validity of results. Real-life applications, such as best-buy comparisons, scale drawings, and interpreting graphs in context, help solidify their understanding. By the end of the Foundation course, students demonstrate secure procedural fluency, confidence in applying methods to familiar and unfamiliar situations, and the ability to explain reasoning clearly — meeting the National Curriculum aims of fluency, reasoning, and problem solving.	**Vector Geometry, Transformations & Constructions:** In the final term, higher-tier students extend their understanding of vectors and spatial reasoning. They perform vector addition, subtraction, and scalar multiplication, and use these skills to solve geometric problems involving parallel and intersecting lines. Students apply vector methods to proofs, linking algebraic reasoning with geometry. Transformations are studied in algebraic form, including combined transformations and invariant properties. Students also develop precise construction techniques and apply loci to multi-step reasoning problems involving geometric constraints. Real-world applications and modelling tasks require them to select and justify appropriate mathematical methods. By the end of KS4, higher-tier students demonstrate fluency across the full range of mathematical content, can move confidently between algebraic, graphical, and numerical forms, and construct clear, logical arguments to solve unfamiliar problems. This secures readiness for progression to A Level Mathematics or other Level 3 qualifications, fully meeting the National Curriculum's aims of fluency, reasoning, and problem solving.	Year 10: Cumulative Assessment Year 11: GCSEs