

Curriculum Map - Maths

Intent:

- Ensure that all students become proficient problem solvers.
- To embed techniques into the students' learning so that they are able to use the correct tool to problem solve with confidence and efficiency.
- To enable students to take their learning as far as possible to see how it connects to the wider world as they know it and to the future wider world.
- The curriculum aims to provide the students with the building blocks to take their maths further, apply it to other subjects and unfamiliar situations and become responsible citizens and the innovators of the future.

	Autumn Term	Spring Term	Summer Term
Year 7	<p>Knowledge/Skills: HCF/LCM and primes Angles Negative numbers 2 stage linear equations and inequalities</p> <p>Built on: KS2 understanding</p>	<p>Knowledge/Skills: Averages and statistical diagrams Fractions Area/Perimeter of shapes Straight lines</p> <p>Built on: KS2 understanding Inequalities (Year 7 Autumn)</p>	<p>Knowledge/Skills: Shape and symmetry Probability</p> <p>Built on: KS2 understanding Straight lines (Year 7 Spring)</p>
Year 8	<p>Knowledge/Skills: Algebraic Manipulation and substitution Ratio and Proportion Scatter graphs and gathering data Roots, estimation, trial and improvement</p> <p>Built on: Linear equations (Year 7 Autumn) Negative numbers (Year 7 Autumn) Fractions (Year 7 Spring) Averages and statistical diagrams (Year 7 Spring)</p>	<p>Knowledge/Skills: Circle Volume Percentages Equations with x on both sides (and brackets)</p> <p>Built on: Algebraic manipulation (Year 8 Autumn) Roots and estimation (Year 8 Autumn) Area/Perimeter of shapes (Year 7 Spring) Linear equations (Year 7 Autumn)</p>	<p>Knowledge/Skills: Number patterns Bearings and scale drawings Constructions and Loci Travel Graphs</p> <p>Built on: Algebraic manipulation (Year 8 Autumn) Angles (Year 7 Autumn) Area/Perimeter of shapes (Year 7 Spring) Circle (Year 8 Spring) Straight lines (Year 7 Spring)</p>

<p>Year 9</p>	<p>Knowledge/Skills: Algebra manipulation and solving equations (including simultaneous equations and factorising quadratics) Drawing and interpreting statistical diagrams Indices and Standard form. Angles in Polygons.</p> <p>Built on: Equations and Expressions (Year 8 Autumn/Spring) Gathering Data (Year 8 Autumn) Roots (Year 8 Autumn) Number (Year 7 Autumn) Shape (Year 7 Summer)</p>	<p>Knowledge/Skills: Circle Theorems Functions and Algebraic Graphs. Transformations. Similarity and Congruence</p> <p>Built on: Angles (Year 7 Autumn) Circles (Year 8 Spring) Straight Lines (Year 7 Spring) Number Patterns (Year 8 Summer) Shape (Year 7 Summer) Angles in Polygons (Year 9 Autumn)</p>	<p>Knowledge/Skills: Probability Trigonometry and Pythagoras Vectors</p> <p>Built on: Probability (Year 7 Summer) Transformations (Year 9 Spring) Similarity and Congruence (Year 9 Spring) Angles in Polygons (Year 9 Autumn)</p>
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<p>Year 10</p>	<p>Knowledge/Skills: Number, indices and brackets Fractions and surds Solving linear equations and rearranging formulae Mensuration Standard form</p> <p>Built on: HCF/LCM (Year 7 Autumn) Algebraic manipulation (Year 8 Autumn) Quadratic expressions (Year 9 Autumn) Fractions (Year 7 Spring) Algebraic manipulation (Year 8 Autumn) Simultaneous Equations (Year 9 Autumn) Area/Perimeter (Year 7 Spring) Circle (Year 8 Spring) Estimation (Year 8 Spring) Standard Form (Year 9 Autumn)</p>	<p>Knowledge/Skills: Probability and Venn diagrams Pythagoras and trigonometry Calculations Algebraic Graphs Data Handling</p> <p>Built on: Probability (Year 9 Summer) Pythagoras and Trigonometry (Year 9 Summer) Bearings (Year 8 Summer) Fractions (Year 10 Autumn) Percentages (Year 8 Spring) Algebraic Graphs (Year 9 Spring) Statistics (Year 9 Autumn)</p>	<p>Knowledge/Skills: Ratio and Proportion Sequences and Functions Angles Vectors Inequalities</p> <p>Built on: Ratio (Year 8 Autumn) Sequences (Year 8 Summer) Functions (Year 9 Spring) Angles in Polygons (Year 9 Autumn) Vectors (Year 9 Summer) Inequalities (Year 7 Spring)</p>
<p>Year 11</p>	<p>Knowledge/Skills: Mensuration Quadratics Circle Theorems Curve Sketching Transformations Similarity and Congruence</p> <p>Built on: Mensuration (Year 10 Autumn) Factorising Quadratics (Year 9 Autumn) Algebra (Year 10 Autumn) Circle Theorems (Year 9 Spring) Algebraic Graphs (Year 10 Spring) Transformations (Year 9 Spring) Similarity (Year 9 Spring)</p>	<p>Knowledge/Skills: Advanced Algebra Graphs to solve problems, including chords and tangents to estimate speed and acceleration and transformations of graphs Advanced Trigonometry including sine rule cosine rule. Loci Compound Measure including estimating area under graphs with trapezia.</p> <p>Built on: Quadratics (Year 11 Autumn) Curve Sketching (Year 11 Autumn) Trigonometry (Year 10 Spring)</p>	<p>Knowledge/Skills: n/a</p> <p>Built on:</p>

<p>Year 12 (Single)</p>	<p>Knowledge/Skills: Surds Indices Quadratics Inequalities Coordinate Geometry Circles Binomial 1 Trigonometry (Including radians and reciprocal functions) Data Collection and Large Data set Measure of location and spread Representing data Probability (including conditional)</p> <p>Built on: Surds/Indices (Year 10 Autumn) Quadratics (Year 11 Autumn) Straight Lines (Year 10 Spring) Graphs (Year 11 Spring) Advanced Trigonometry Year 11 Spring) Data Handling (Year 10 Spring) Probability (Year 10 Spring)</p>	<p>Knowledge/Skills: Transformations of Graphs Differentiation Exponentials and Logs Statistical Distributions Normal Distribution</p> <p>Built on: Graphs (Year 11 Spring) Binomial (Year 12 Autumn)</p>	<p>Knowledge/Skills: Integration Sequences Algebraic Methods Binomial 2 Proof Vectors Correlation and Regression Hypothesis Testing Large Data Set</p> <p>Built on: Compound Measure (Year 11 Spring) Sequences (Year 10 Spring) Advanced Algebra (Year 11 Spring) Scatters (Year 10 Spring)</p>
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<p>Year (Single) 13</p>	<p>Knowledge/Skills: Functions Trigonometry Parametrics Differentiation Integration Modelling Kinematics Forces Motion and Friction Moments Projectiles Application of Forces</p> <p>Built on: Functions (Year 10 Spring) Trigonometry (Year 12 Autumn) Calculus (Year 12 Spring/Summer)</p>	<p>Knowledge/Skills: Further Kinematics Numerical Methods</p> <p>Built on: Kinematics (Year 12 Autumn) Iteration (Year 11 Spring) Kinematics (Year 13 Autumn) Calculus (Year 12 Spring/Summer)</p>	<p>Knowledge/Skills: n/a</p> <p>Built on:</p>
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<p>Year 12 (Further)</p>	<p>Knowledge/Skills: Surds Indices Quadratics Inequalities Coordinate Geometry Circles Binomial 1 Trigonometry (Including radians and reciprocal functions) Transformations of Graphs Differentiation Exponentials and Logs Data Collection and Large Data set Measure of location and spread Representing data Probability (including conditional) Statistical Distributions Normal Distribution Correlation and Regression Modelling Kinematics Forces Motion and Friction</p> <p>Built on: Surds/Indices (Year 10 Autumn) Quadratics (Year 11 Autumn) Straight Lines (Year 10 Spring) Graphs (Year 11 Spring) Advanced Trigonometry Year 11 Spring) Data Handling (Year 10 Spring) Probability (Year 10 Spring)</p>	<p>Knowledge/Skills: Integration Series Algebraic Methods Binomial 2 Proof Vectors Functions Trigonometry Hypothesis Testing Large Data Set Moments Projectiles Application of Forces</p> <p>Built on: Graphs (Year 11 Spring) Binomial (Year 12 Autumn) Compound Measure (Year 11 Spring) Sequences (Year 10 Spring) Advanced Algebra (Year 11 Spring) Scatters (Year 10 Spring) Functions (Year 10 Spring) Trigonometry (Year 12 Autumn)</p>	<p>Knowledge/Skills: Parametrics Differentiation Integration Numerical Methods Further Kinematics</p> <p>Built on: Calculus (Year 12 Autumn) Iteration (Year 11 Spring) Kinematics (Year 12 Autumn)</p>
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<p>Year 13 (Further)</p>	<p>Knowledge/Skills: Complex Numbers Matrices Proof By Induction Series Hyperbolics Polar Coordinates Conics Methods in Calculus</p> <p>Either Momentum and Impulse Work, Power and Energy</p> <p>Or Discrete Random Variables Poisson Distribution Geometric and Negative Distributions Hypothesis Testing Hypothesis Testing Central Limit Theorem</p> <p>Built on: Series (Year 12 Spring) Calculus (Year 12 Spring) Motion (Year 12 Autumn) Normal Distribution (Year 12 Spring)</p>	<p>Knowledge/Skills: Differential Equations Inequalities t-formulae Volumes of Revolution Taylor Series Methods in Calculus</p> <p>Either Elastic Strings and Springs Elastic Collisions</p> <p>Or Chi-Squared Testing Probability Generating Functions Quality of Tests</p> <p>Built on: Inequalities (Year 12 Autumn) Calculus (Year 12 Spring)</p>	<p>Knowledge/Skills: n/a</p> <p>Built on:</p>
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