

# Year 11 Higher Set 1 2024/25

Extending their learning even further into more complex and abstract mathematics, students will learn to become agile and resourceful in their approaches to solving advanced multi-discipline problems, preparing them well for post-16 qualifications, such as A-Level Mathematics.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<b>Knowledge &amp; Skills Overview</b>	<p><b>Linear Inequalities</b> Represent, construct &amp; solve inequalities. Identify feasible regions on graphs</p> <p><b>Circle Theorems</b> Know and use the circle theorems to solve multi-step angle reasoning problems.</p> <p><b>Advance Triangles</b> Use Trigonometry and Pythagoras with problems in 3D. Extend the use of trigonometry to non-righted angled triangles.</p>	<p><b>Advance Data Analysis</b> Construct and interpret data using frequency polygons, cumulative frequency graphs, histograms &amp; boxplots</p> <p><b>Functions</b> Solve numerical &amp; algebraic problems with functions</p>	<p><b>Algebraic Proof</b> Explore how to prove things mathematically from algebraic &amp; number problems, circle theorems &amp; other geometric problems.</p> <p><b>Rates of Change</b> Solve speed, distance &amp; time problems. Explore distance-time, and velocity-time graphs</p> <p><b>Advance Equations</b> Solve non-linear simultaneous equations algebraically &amp; graphically. Solve quadratic inequalities. Transform functions</p>	<p><b>Vectors &amp; Geometric Proof</b> Represent vectors and calculate related magnitudes and angles. Use vectors to solve geometric problems</p> <p><b>Coordinate Geometry</b> Explore graphically &amp; algebraically problems with non, linear equations, parallel &amp; perpendicular lines.</p> <p><b>Transformations</b> Construct and describe reflections, rotations, translations and enlargements on coordinate axes.</p>	<p><b>Personalised Revision Plan</b> Using rich and detailed question level analysis of all practice examination material, students will have the support to focus their revision on their personalised areas for development.</p>	<b>Exam Season</b>
					<b>Exam Season</b>	
<b>Opportunities for Recall &amp; Retrieval of Prior Learning</b>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>• Linear equations &amp; graphs</li> <li>• Angle facts</li> <li>• Trigonometry</li> <li>• Pythagoras' theorem</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>• Analysing data with averages</li> <li>• Displaying data</li> <li>• Fraction, decimals &amp; %</li> <li>• Link equations to functions</li> <li>• Changing the subject</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>• Writing expressions</li> <li>• <math>+</math> <math>-</math> <math>\times</math> <math>\div</math> algebraic fractions</li> <li>• Ratio &amp; proportion</li> <li>• Equations</li> <li>• Non-linear graphs</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>• Properties of 2D Shapes</li> <li>• Manipulating algebra</li> <li>• Linear graphs &amp; equations</li> <li>• Coordinates</li> </ul>	<p><b>From Year 10</b></p> <p>Personalised revision</p>	<p><b>From Year 10</b></p> <p>Personalised revision</p>
	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>• Use sine &amp; cosine rule to work with angle problems in circles</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>• Use of inequalities with continuous data</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>• Circle theorems</li> <li>• Functions</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>• Sketching graphs from their equations</li> </ul>	<p><b>From Year 11</b></p> <p>Personalised revision</p>	<p><b>From Year 11</b></p> <p>Personalised revision</p>

# Year 11 Higher Set 2-3 2024/25

Extending their learning even further into more complex and abstract mathematics, students will learn to become agile and resourceful in their approaches to solving advanced multi-discipline problems, preparing them well for post-16 qualifications, such as A-Level Mathematics.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<b>Knowledge &amp; Skills Overview</b>	<p><b>Linear Inequalities</b> Represent, construct &amp; solve inequalities. Identify feasible regions on graphs</p> <p><b>Proportionality</b> Use direct &amp; inverse proportion to solve complex problems. Express relationships using algebra</p> <p><b>Solving Quadratics</b> by factorising, using the formula, rearranging, and iteration.</p> <p><b>Non-Linear Graphs</b> Explore the graphs of quadratics, cubic, reciprocals, exponentials &amp; circles</p>	<p><b>Probability</b> of more than one event using two-way tables, sample space diagrams, tree diagrams &amp; Venn diagrams – Set Theory</p> <p><b>Advance Area &amp; Volume</b> Spheres, cones, pyramids including complex compound 3D shapes. Explore area &amp; volume proportion problems with similar 3D solids. Calculate arc lengths &amp; area of sectors.</p>	<p><b>Circle Theorems</b> Know and use the circle theorems to solve multi-step angle reasoning problems.</p> <p><b>Advance Data Analysis</b> Construct and interpret data using frequency polygons, cumulative frequency graphs, histograms &amp; boxplots</p> <p><b>Advance Triangles</b> Use Trigonometry and Pythagoras with problems in 3D. Extend the use of trigonometry to non-righted angled triangles.</p>	<p><b>Rates of Change</b> Solve speed, distance &amp; time problems. Explore distance-time, and velocity-time graphs</p> <p><b>Functions</b> Solve numerical &amp; algebraic problems with functions</p> <p><b>Vectors &amp; Geometric Proof</b> Represent vectors and calculate related magnitudes and angles. Use vectors to solve geometric problems</p> <p><b>Advance Equations</b> Solve non-linear simultaneous equations algebraically &amp; graphically. Solve quadratic inequalities. Sketch non-linear graphs &amp; illustrate functional transformations</p>	<p><b>Construction &amp; Loci</b> Construct 2D shapes &amp; bisectors. Apply them to loci problems. Draw &amp; calculate bearings</p> <p><b>Coordinate Geometry</b> Explore graphically &amp; algebraically problems with non linear equations, parallel &amp; perpendicular lines.</p>	<b>Exam Season</b>
	<b>Exam Season</b>					
<b>Opportunities for Recall &amp; Retrieval of Prior Learning</b>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Linear equations &amp; graphs</li> <li>Proportion tables</li> <li>Changing the subject</li> <li>Factorise quadratics</li> <li>Plotting coordinates</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Fractions, decimals, percentages &amp; ratio equivalence</li> <li>Bound problems in area &amp; volume</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Trigonometry</li> <li>Pythagoras</li> <li>Angle problems</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Proportionality</li> <li>Manipulating algebra</li> <li>All equation types</li> <li>Linear simultaneous equations</li> </ul>	<p><b>From Year 10</b></p> <p>Linear graphs Angle problems Trigonometry Pythagoras</p>	<p><b>From Year 10</b></p> <p>Personalised revision</p>
	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Solving equations involving fractions &amp; graphs</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Manipulating quadratic equations from area &amp; volume problems</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Manipulating algebra</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Solving quadratics</li> <li>Non linear graphs</li> <li>Linear inequalities</li> </ul>	<p><b>From Year 11</b></p> <p>Vectors Non linear graphs</p>	<p><b>From Year 11</b></p> <p>Personalised revision</p>

# Year 11 Foundation 2024/25

Using their strong mathematical roots from key stage 3, students will extend their mathematical knowledge and skills by learning how to tackle more demanding contextual GCSE problems that require a firm grasp of, data, geometry, algebra, and particularly number, ratio and proportion

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<b>Knowledge &amp; Skills Overview</b>	<p><b>Further Proportion</b> Use direct proportion to work with recipes, currency conversion, and speed-distance-time. Solve problems with inverse proportion</p> <p><b>Probability</b> of more than one event using two-way tables, sample space diagrams, Venn diagrams &amp; simple tree diagrams.</p> <p><b>Displaying Data</b> Construct and interpret a range of different graphs and charts to understand how they display different aspects of data. Calculate averages from grouped tables</p>	<p><b>Area &amp; Volume</b> Calculate the area of 2D shapes including circles. Find the surface area &amp; volume of prisms, cones, spheres, and pyramid. Work with compound units like density &amp; pressure.</p> <p><b>Inequalities &amp; Equations</b> Represent inequalities in a variety of forms. Create &amp; solve linear inequalities.</p>	<p><b>Angles in Polygons</b> Solve interior and exterior angle reasoning problems within polygons.</p> <p><b>Pythagoras &amp; Trigonometry</b> Use a combination of Pythagoras and trigonometry to solve a range of geometric problems in 2D.</p> <p><b>Real Life Graphs</b> Construct and interpret liner graphs in context</p>	<p><b>Non-Linear Graphs</b> Explore the graphs of quadratics, cubic, reciprocals</p> <p><b>Loci &amp; Construction</b> Use construct skills, bearings &amp; map scales to identify points &amp; feasible regions from contextual mapping problems.</p> <p><b>Transformations</b> Construct and describe reflections, rotations, translations and enlargements on coordinate axes.</p>	<p><b>Vectors</b> Understand column vectors as a measure of direction &amp; magnitude. Calculate with column vectors</p> <p><b>Personalised Revision Plan</b> Using rich and detailed question level analysis of all practice examination material, students will have the support to focus their revision on their personalised areas for development.</p>	<b>Exam Season</b>
					<b>Exam Season</b>	
<b>Opportunities for Recall &amp; Retrieval of Prior Learning</b>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Percentage multipliers</li> <li>Fraction, decimals &amp; %</li> <li>Proportion tables</li> <li>Averages &amp; range</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Area &amp; perimeter</li> <li>Fractions &amp; percentages</li> <li>Proportion tables</li> <li>Solving equations</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Angle facts</li> <li>Pythagoras' Theorem</li> <li>Change the subject</li> <li>Proportion</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Straight line graphs</li> <li>Coordinates</li> <li>Solving equations</li> <li>Know quadratic &amp; cubic expressions</li> </ul>	<p><b>From Year 10</b></p> <ul style="list-style-type: none"> <li>Calculate with negatives</li> <li>Pythagoras' Theorem</li> </ul>	<p><b>From Year 10</b></p> <p>Personalised revision</p>
	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Use of proportion with probability &amp; pie chart problems</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Use of proportion with geometric problems</li> <li>Link Density, pressure to Speed, distance &amp; time</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Angles, perimeter &amp; area with Trig. &amp; Pythagoras' theorem</li> <li>Straight line graphs</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Angle facts</li> </ul>	<p><b>From Year 11</b></p> <ul style="list-style-type: none"> <li>Column Vector as a measure of bearing</li> <li>Translating shapes</li> </ul>	<p><b>From Year 11</b></p> <p>Personalised revision</p>