

# Maths @ WBS Year 12 Roadmap

**Subject Aim:** To build upon skills and content from GCSE Maths, extending into new concepts and highly developed ideas. To begin to understand a new strand of Mathematics in Mechanics and gain familiarity with A Level style exam questions. To develop resilience in our approach to challenging problems.

		Assessment	
Autumn Term	<b>ALGEBRA &amp; COORDINATE GEOMETRY</b>	<b>STEPPING UP TO A-LEVEL</b>	<p>We use the first few weeks to ensure you can <b>identify any gaps</b> in your current knowledge. This is mainly done on Dr Frost, and support is provided on Wednesdays after school in our A Level drop in. This enables us and you to know what areas you need to work on in order to be best prepared to study A Level Mathematics.</p> <p>Each week, you will sit a <b>Weekly Assessment</b>. This is an exam question designed to prepare you for the challenges of the terminal exams.</p> <p>Over the year you will sit a series of <b>Key Assessments</b>. These assessments over all content cover up to the assessment date, so will test both the most recent units studies, as well as previously gained knowledge.</p> <p>Before the Summer, you will sit a <b>Mock Exam</b> on all year 12 content.</p> <p>All assessments are marked and then fed back in class.</p>
	<ul style="list-style-type: none"> <li>Quadratics</li> <li>Simultaneous Equations</li> </ul>	<ul style="list-style-type: none"> <li>Surds &amp; Indices</li> <li>Linear Graphs</li> <li>Trigonometry &amp; Radians</li> <li>Proof</li> </ul>	
	<b>INEQUALITIES &amp; POLYNOMIALS</b>	<b>KINEMATICS 1</b>	
	<ul style="list-style-type: none"> <li>Inequalities</li> <li>Transforming Graphs</li> <li>Algebraic Division</li> </ul>	<ul style="list-style-type: none"> <li>Graphs of Motion</li> <li>Constant Acceleration</li> <li>Vertical Motion</li> <li>Vectors</li> </ul>	
Spring Term	<b>CALCULUS 2</b>	<b>FORCES</b>	
	<ul style="list-style-type: none"> <li>First Principles</li> <li>Differentiation</li> <li>Area Under a Curve</li> </ul>	<ul style="list-style-type: none"> <li>Resolving Forces</li> <li>F=ma</li> <li>Connected Particles</li> </ul>	
	<b>EXPONENTIALS &amp; LOGARITHMS</b>	<b>SEQUENCES</b>	
	<ul style="list-style-type: none"> <li>Exponential Functions</li> <li>Laws of Logs</li> <li>Growth &amp; Decay</li> </ul>	<ul style="list-style-type: none"> <li>Arithmetic &amp; Geometric</li> <li>Sequences &amp; Series</li> <li>Sum to Infinity</li> </ul>	
Summer Term	<b>FUNCTIONS</b>	<b>TRIGONOMETRY 1</b>	
	<ul style="list-style-type: none"> <li>Modulus Function</li> <li>Domain &amp; Range</li> <li>Composite &amp; Inverse Functions</li> </ul>	<ul style="list-style-type: none"> <li>Trigonometric Graphs</li> <li>The Unit Circle</li> <li>Trig Identities</li> <li>Solving Equations</li> </ul>	
	<b>STATISTICS</b>	<ul style="list-style-type: none"> <li>Reciprocal &amp; Inverse Trig Functions</li> </ul>	
<b>Where Next?</b>			
<p>In year 13, you will progress to applying these ideas on a bigger scale, extending to challenging Calculus &amp; Mechanics, as well as learning about the third strand of the course: Statistics!</p>			
<b>Enrichment</b>			
<p>The Senior Maths Challenge is a great opportunity for students to stretch themselves and compete with other mathematicians on a national scale.</p> <p>Further opportunities involve getting involved in leading Problem Solving Club sessions for younger students and supporting maths lessons to develop working with younger students.</p>		<p>Students are expected to complete exercises which are attached to the end of our teaching powerpoints. This should be done before the next lesson whenever possible.</p> <p>You will have homework set on Dr Frost every week, with a two week deadline to complete this. For most tasks you will be allowed reattempts, so make sure you reattempt and get support with any questions you struggle with.</p> <p>We offer a weekly after school Drop In Club every Wednesday, strongly recommended for you to practice and revise efficiently.</p>	