



# Curriculum Map

Subject: Mathematics

Year group: Year 12

This document maps the Year 12 Curriculum in Mathematics.

	<b>Phase One</b> <i>September – January</i> <i>(19 weeks)</i>	<b>Phase Two</b> <i>February – May</i> <i>(15 weeks)</i>	<b>Phase Three</b> <i>June- July</i> <i>(6 weeks)</i>
<p><b>Content</b></p> <p><b>Declarative Knowledge – ‘Know What’</b></p>	<p><i><b>INTENT:</b> Students consolidate their advanced GCSE skills and apply them rigorously in learning new content.</i></p> <p><b>Pure Mathematics</b>            Algebraic Expressions including Indices and Surds            Quadratics            Solving Equations and Inequalities            Graph Sketching and Transformations            Coordinate Geometry including Circle Geometry            Algebraic Methods            Differentiation            Vectors            Trigonometric Ratios            Trigonometric Equations and Identities</p> <p><b>Statistics</b>            Data Collection including Sampling Techniques            Measures of Location and Spread            Data Representation            Linear Correlation and Regression            Probability</p> <p><b>Mechanics</b>            Modelling in Mechanics            Constant Acceleration            Forces and Motion</p>	<p><i><b>INTENT:</b> Students continue to learn new content and complete the AS Scheme of Work.</i></p> <p><b>Pure Mathematics</b>            Integration            Mathematical Proofs            Binomial Expansion            Exponentials and Logarithms</p> <p><b>Statistics</b>            Statistical Distributions and Binomial Distribution            Hypothesis Testing (Binomial probabilities)</p> <p><b>Mechanics</b>            Variable acceleration</p>	<p><i><b>INTENT:</b> Students complete an intensive revision programme for the Threshold exams and start the A2 Scheme of Work</i></p> <p>The revision programme is bespoke to each teaching group and will be focussed on key Pure Mathematics topics with the completion of past papers/exam question papers by topic.</p> <p><b>A2 Scheme of Work</b></p> <p><b>Pure Mathematics</b>  <i>(as much covered as time allows)</i>            Partial Fractions            Sequences and Series            Radians            Binomial Expansion</p>



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<p><b>Skills</b></p> <p><b><i>Procedural Knowledge – 'Know How'</i></b></p>	<p>Review intensively the GCSE advanced number and algebra concepts to be able to apply them confidently in new mathematical concepts.</p> <p>Learn to select appropriate knowledge and methodology to new algebra and geometry concepts and apply them in a range of modelling problems in different contexts.</p> <p>Learn to select appropriate statistical notation and interpret statistical answers in the context of a variety of problems.</p> <p>Learn to draw clear diagrams and use them to set up the equations required to solve problems. Recognise the limitations of the models used to answer a variety of problems in context.</p>	<p>Learn to select appropriate knowledge and methodology to new algebra and geometry concepts and apply them in a range of modelling problems in different contexts.</p> <p>Learn to select appropriate statistical notation and interpret statistical answers in the context of a variety of problems including the Edexcel large data set.</p> <p>Learn to select appropriate calculus skills and apply them to non-constant acceleration problems.</p>	<p>Review topics to consolidate mathematical understanding and how to apply this knowledge appropriately in the context of the exam.</p> <p>Learn to select appropriate knowledge and methodology to new algebra and geometry concepts and apply them in a range of modelling problems in different contexts.</p>
<p><b>Key Questions</b></p>			
<p><b>Assessment</b></p>	<p>Baseline (GCSE/summer work)</p> <p>Pure1 (Algebraic expressions, Quadratics, Equations and Inequalities and Graphs)</p> <p>Statistics and Mechanics1 (Data collection, sampling, mathematical modelling and constant acceleration)</p> <p>Pure2 (Coordinate Geometry, Algebraic Methods, Differentiation)</p>	<p>Statistics and Mechanics2 (Representing data, correlation, probability, and forces and motion)</p> <p>Pure 3 (Trigonometry and Vectors)</p> <p>Pure 4 (Integration with all pure topics excluding proof, binomial expansion and logarithms))</p> <p>Pure Mock threshold exam</p> <p>Statistics and Mechanics Mock threshold exam</p>	<p><b>Yr 12 Threshold Exams</b></p> <p>Students sit two AS level papers as follows::</p> <p>Pure Mathematics 2 hrs</p> <p>Statistics and Mechanics 1hr 15 mins.</p>



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<b>Literacy/Numeracy/ SMSC/Character</b>	Understanding and interpreting calculations used in mathematical modelling problems set in real-life contexts.  Understanding and applying the formulae used in solving problems.  Aspiration, Resilience, Initiative, Confidence	Understanding and interpreting calculations used in mathematical modelling problems set in real-life contexts.  Carrying out algebraic proofs of mathematical identities or formulae used in solving problems.  Aspiration, Resilience, Initiative, Confidence	Understanding and interpreting calculations used in mathematical modelling problems set in real-life contexts.  Carrying out algebraic proofs of mathematical identities or formulae used in solving problems.  Aspiration, Resilience, Initiative, Confidence
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