

# Summer Term plan

## Year 12 Mathematics A Level

<p>Mrs Laidler/Mr Storey-Scott</p> <p><b>Mechanics Assessment</b> Students will take a Mechanics assessment on Wednesday 4 May covering all the work from the Mechanics section, this will be followed by a feedback and review session.</p> <p><b>Parametric Equations</b> Using parametric equations and converting between parametric and cartesian equations</p> <p><b>Differentiation</b></p> <ul style="list-style-type: none"> <li>• Consider the shape of functions looking at concavity and points of inflection</li> <li>• Differentiating Trigonometric functions</li> <li>• Differentiating Exponential and Logarithmic functions</li> <li>• Chain rule</li> <li>• Product rule</li> <li>• Quotient rule</li> <li>• Differentiating Inverse functions</li> </ul>	<p>Mr Bullock/Mr Ahluwalia</p> <p><b>Exponentials and Logarithms</b></p> <ul style="list-style-type: none"> <li>• Manipulate logs and exponentials</li> <li>• Be able to use the laws of logarithms</li> <li>• know that <math>\log_a a = 1</math> and <math>\log_a 1 = 0</math> for <math>a &gt; 0</math></li> <li>• Solve equations of the form <math>a^x = b</math></li> <li>• Use logarithmic graphs to estimate parameters in relationships of the form <math>y = ax^n</math> and <math>y = kb^x</math>, given data for <math>x</math> and <math>y</math>.</li> <li>• Understand and use exponential growth and decay; use in modelling, consider limitations and refinements of exponential models</li> </ul> <p><b>Functions</b></p> <ul style="list-style-type: none"> <li>• Use graphs of the modulus of a linear equation</li> <li>• Use composite functions, inverse functions, and their graphs</li> <li>• Define a function as a mapping, including the range and domain</li> <li>• Use correct language and notation to describe functions accurately</li> <li>• Find and use inverse functions</li> <li>• Understand the effects of combinations of transformations</li> </ul> <p><b>Fractions</b></p> <ul style="list-style-type: none"> <li>• Simplify rational expressions</li> <li>• Decompose rational functions into Partial fractions</li> </ul> <p><b>Trigonometry</b></p> <ul style="list-style-type: none"> <li>• Work with radian measure, including use for arc length and area of sector</li> <li>• Understand and use the standard small angle approximations of sine, cosine and tangent •</li> <li>• Understand and use the definitions of secant, cosecant and cotangent and of arcsin, arccos and arctan; their relationships to sine, cosine and tangent; understanding their graphs; their ranges and domains</li> <li>• Use trigonometric formulae for compound angles, double angles and half angles</li> </ul>
<p><b>UCAS Prediction exams 4 July – 12 July</b> Students will be given past paper practise to enable them to consolidate their learning and will have revision sessions leading up to the exams.</p> <p>The assessment is made up of two papers</p> <ul style="list-style-type: none"> <li>• Core with Mechanics</li> <li>• Core with Statistics</li> </ul> <p>Core makes up two thirds of the assessment with Statistics and Mechanics a sixth each.</p>	