

**Learning Programme – A-Level Mathematics – Upper Sixth**

Topic/Teacher	Content/Objectives/Skills	Homework	Assessment	Success Criteria (A-Level grades)	Stretch & Challenge (Thirst for Learning)
	<b>Lent First Half Term</b>				
<b>Parametric Equations (A)</b>	<p>Understand how parametric equations work and be able sketch their curves.</p> <p>Be able to convert parametric equations to Cartesian equations.</p> <p>Be able to differentiate parametric equations to find the gradient on the curve, and prove properties of curves.</p>	<p>Assessment Homework – Parametric Equations</p>	<p>Half Term Test (week after Christmas break)</p>	<p>Mainly determined from Half-Term test, however, class work &amp; homework may also be used.</p> <p>A-Level Grade boundaries dependent on difficulty of test.</p>	<p>Students will be challenged using extension questions on the topics they are studying, designed to develop their ability to solve multi-staged problems.</p>
<b>Numerical Methods (A)</b>	<p>Be able to use the sign-change rule to find approximate solutions to an equation.</p> <p>Be able to use an iterative method to produce a sequence which converges to a root.</p> <p>Use the Newton-Raphson method to find approximations to the solutions of equations of the form <math>f(x)=0</math>.</p> <p>Be able to use Numerical Methods to solve problems in context.</p>				
<b>Vectors (B)</b>	<p>Be able to represent vectors using column vectors, components of unit vectors and vector algebra, in both two and three dimensions.</p> <p>Know and use the rules of vector algebra.</p> <p>Be able to understand and use displacement and position vectors.</p> <p>Be able to identify the vector equation of a line and solve problems involving intersecting, parallel and skew lines.</p>				