

## Year 13 Mathematics Curriculum

	AUT1	AUT2	SPR1	SPR2	SUM1	SUM2
<b>Topic:</b>	Pure Mathematics, Statistics and Mechanics		Pure Mathematics, Statistics and Mechanics		Pure Mathematics, Statistics and Mechanics	
<b>Knowledge Covered:</b>	<ul style="list-style-type: none"> <li>- <b>Algebraic and Partial Fractions</b></li> <li>- <b>Differentiation</b> (including Differentiating <math>\sin x</math> and <math>\cos x</math> from first principles, Second Derivatives and Rates of change problems)</li> <li>- <b>Integration (part 1)</b> (including Integrating exponentials and trigonometric functions and Integrating functions defined parametrically)</li> <li>- <b>Integration (part 2)</b> (including Integration by substitution, Parts and use of Partial Fractions)</li> <li>- <b>Parametric equations</b> (including Curve sketching and modelling)</li> <li>- <b>Numerical methods</b> (including iterative methods and Newton-Raphson)</li> <li>- <b>Trigonometry</b> (including Small Angle Approximations and Trigonometric Identities and Inverse Trigonometric Functions)</li> <li>- <b>Vectors (3D)</b></li> <li>- <b>Moments:</b> Forces' turning effect</li> <li>- <b>Forces at any angle</b> (including Friction forces)</li> <li>- <b>Applications of kinematics:</b> Projectiles</li> </ul>		<ul style="list-style-type: none"> <li>- <b>Series and Sequences</b> (including Recurrence and iterations)</li> <li>- <b>Functions and Modelling</b> (including Transformations)</li> <li>- <b>The binomial Theorem</b> (including Expansion of functions by first using partial fractions)</li> <li>-- <b>Proof</b> (including proof by deduction* and proof by contradiction)</li> <li>- <b>Trigonometry</b> -continued</li> <li>- <b>Applications of Kinematics:</b> Projectiles (continued)</li> <li>- <b>Applications of Forces</b> (including the Equilibrium, Statics and Dynamics of a particle.</li> <li>- <b>Further kinematics</b> (including Constant and Variable acceleration and using Calculus)</li> <li>- <b>The Normal distribution</b></li> <li>- <b>Regression and correlation</b></li> <li>- <b>Conditional Probability</b></li> </ul>		<ul style="list-style-type: none"> <li>Pure Mathematics Review</li> <li>Statistics Review</li> <li>Mechanics Review</li> <li>Examinations</li> </ul>	
<b>Online resources:</b>	<a href="http://www.mymaths.co.uk">www.mymaths.co.uk</a> , Integral Maths Wrenn School A Level Revision Website					