

Autumn Term plan

Year 13 Mathematics A Level

Mrs Laidler	Mr Bullock/Mr Ahluwalia
<p>CORE</p> <p>Differentiation</p> <ul style="list-style-type: none"> • Review using the chain, product and quotient rules • Differentiate parametric equations • Differentiate inverse functions • Construct simple differential equations <p>Integration</p> <ul style="list-style-type: none"> • Integrate exponentials and trigonometric functions • Find the area between two curves • Integrate by substitution • Integration by parts • Integrate using partial fractions • Integration giving logs • Solve differential equations • Interpret solutions of differential equations in the context of solving problems, including links to kinematics <p>Mechanics</p> <p>Kinematics</p> <ul style="list-style-type: none"> • Use the constant acceleration formulae in two dimensions using vectors • Use calculus to solve problems in two dimensions with variable acceleration. • Solve problems involving the motion of a projectile under gravity 	<p>CORE</p> <p>Trigonometry</p> <ul style="list-style-type: none"> • Understand and use trigonometric identities • Understand compound angles and double angles and the geometric proofs of these formulae • Understand and use harmonic form • Construct proofs involving trigonometric functions and inequalities • Use trigonometric functions to solve problems in context <p>Sequences and Series</p> <ul style="list-style-type: none"> • Extend the binomial expansion to any rational power, being aware of the validity of the expansion • Work with nth term sequences and iterative sequences • Understand increasing, decreasing and periodic sequences • Understand and use sigma notation for sums of series • Understand and work with arithmetic and geometric sequences and series including nth term and sum to n terms, and sum to infinity for convergent geometric progressions • Use sequences and series in modelling <p>STATISTICS</p> <p>Probability and Statistical Distributions</p> <ul style="list-style-type: none"> • Understand and use conditional probability, including the use of tree diagrams, Venn diagrams, two-way tables. • Understand and use the conditional probability formula • assess and determine whether a stated probability model is appropriate in a given context • consider whether or not assumptions being made in order to use a given probability model are likely to be valid and the likely effect on results when more realistic assumptions are made. • Understand and use the Normal distribution as a model; find probabilities using the Normal distribution • Link to histograms, mean, standard deviation, points of inflection and the binomial distribution.
End of term assessment	