

Year Group: 13	Subject: Mathematical studies	Term: Autumn 2021
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Topic	Objectives	Assessments
Critical analysis	<ul style="list-style-type: none"> • Understand how information can be presented to lead people into making decisions that are not good decisions • Understand why critical analysis is important. How to determine whether an argument is logical, well-constructed and reasonable. Analyse the underlying mathematical evidence to see if it supports the argument. • Understand how the data selected by a reporter or writer can bias the reader and give them a different view on research. • Critically appraise misleading data and graphs, understand how graphs can mislead. • Critically analyse mathematical models 	<p>Students will complete tutorial work and assignments on each topic.</p> <p>There will be a summative assessment at the end of each topic.</p> <p>Both the assignments and the topic end tests are based on past exam questions.</p>
Graphs	<ul style="list-style-type: none"> • Interpretation of a graph in particular using real life data, be able to describe what the graph shows using context and accuracy. • Begin to be able to plot a quadratic graph and understanding elements of an equation that translate a graph on the axis. • Understand how to solve a quadratic equation and understand the relationship between the roots of a quadratic and the graphical solution to an equation • Understand how to plot a cubic graph • Learn to solve simultaneous equations graphically including quadratic equations 	<p>After each assignment and topic end test there will be an opportunity for students to review their understanding.</p> <p>Teachers will provide students with targeted feedback, based on their test performance.</p>
Rates of Change	<ul style="list-style-type: none"> • Be able to draw and interpret time distance graphs • Understand that the gradient of a curve changes constantly - understand how to estimate the gradient of a curve using a tangent (an instantaneous rate of change) • Draw and interpret velocity time graphs. Calculate acceleration using a gradient • Understand how a distance time graph can be used to produce a velocity time graph • Learn and use SUVAT equations to answer speed distance and time problems. 	<p>At the end of the term students will have a longer summative assessment based on past exam questions.</p>