



## Curriculum Map

**Subject: Maths Applied**

**Year Group: 12**

	Autumn 1/Autumn 2	Autumn 2	Autumn 2/Spring 1	Spring 2	Summer 1	Summer 2
<b>Content</b>	Unit 1 - DATA COLLECTION  Unit 2 - MEASURES OF LOCATION & SPREAD	Unit 3 - REPRESENTATIONS OF DATA  Unit 4 - CORRELATION	Unit 5 – PROBABILITY  Unit 6 – STATISTICAL DISTRIBUTIONS	Unit 7 – HYPOTHESIS TESTING  Unit 8 - MODELLING IN MECHANICS	Unit 9 – CONSTANT ACCELERATION  Unit 10 - FORCES & MOTION	Unit 11 - VARIABLE ACCELERATION
<b>Skills</b>	Students will... <b>Transition Topics:</b> Cumulative frequency, Box Plots, Histograms, Averages (including from tables), Probability – Tree diagrams, Venn diagrams Correlation – Scatter diagrams.  <b>Unit 1 –</b> Understand populations & samples, Sampling methods and their advantages & disadvantages. Types of data (Qualitative, Quantitative, discrete & continuous data).	Students will... <b>Unit 3 –</b> Identify outliers. Draw & interpret Box Plots, Cumulative Frequency diagrams and Histograms. Compare two data sets.  <b>Unit 4 –</b> Draw and interpret scatter diagrams for bivariate data and interpret the correlation. Interpret the coefficients of a regression line equation for bivariate data. Understand when you can use a regression line to make predictions.	Students will... <b>Unit 5 –</b> Calculating probabilities for single events. Draw & interpret Venn diagrams. Understand mutually exclusive & independent events. Use and understand Venn diagrams.  <b>Unit 6 –</b> Understand and use simple discrete probability distributions including discrete uniform distributions. Calculate individual probabilities for the binomial distribution. Calculate	Students will... <b>Unit 7 –</b> Understand the concept of hypothesis testing. Finding critical values of a binomial distribution using tables. Carrying out one-tailed & two-tailed for the proportion of the binomial distribution and interpret results.  <b>Unit 8 –</b> Understand how the concept of a mathematical model applies to Mechanics. Understand and be able to apply the common	Students will... <b>Unit 9 –</b> Understand & Interpret displacement-time graphs & velocity-time graphs. Derive the constant acceleration SUVAT formulae and use them to solve problems. Use the SUVAT formulae to solve problems involving vertical motion under gravity.  <b>Unit 10 –</b> Draw force diagrams & calculate resultant forces. Understand & use Newton's first law. Calculate resultant forces by adding	Students will... <b>Unit 11 –</b> Understand that velocity, displacement and acceleration may be given as functions of time. Use differentiation to solve kinematics problems. Use calculus to solve problems involving maxima & minima. Use integration to solve kinematics problems. Use calculus to derive constant acceleration formulae.

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	<p>The LARGE DATA SET and how to collect &amp; interpret data from it.</p> <p><b>Unit 2</b> – Calculate measures of central tendency and location. Calculate measures of spread eg range &amp; Interquartile range. Variance &amp; Standard Deviation, Coding.</p>		cumulative probabilities for the binomial distribution.	assumptions used in mechanical models. Know the difference between scalar & vector quantities. Know SI units used in Mechanics for Mass, Length & Time	vectors. Understand and use Newton's second law $F=ma$ and apply it to vector forces & acceleration. Understand & use Newton's third law. Solve problems involving connected particles.	
<b>Key questions</b>	<p>YEAR 1/AS TEXTBOOK MIXED EXERCISE 1 PAGE 16 MIXED EXERCISE 2 PAGE 36</p>	<p>YEAR 1/AS TEXTBOOK MIXED EXERCISE 3 PAGE 54 MIXED EXERCISE 4 PAGE 66</p>	<p>YEAR 1/AS TEXTBOOK MIXED EXERCISE 5 PAGE 80 MIXED EXERCISE 6 PAGE 94</p>	<p>YEAR 1/AS TEXTBOOK MIXED EXERCISE 7 PAGE 109 MIXED EXERCISE 8 PAGE 128</p>	<p>YEAR 1/AS TEXTBOOK MIXED EXERCISE 9 PAGE 152 MIXED EXERCISE 10 PAGE 177</p>	<p>YEAR 1/AS TEXTBOOK MIXED EXERCISE 11 PAGE 193</p>
<b>Assessment</b>	End of Half Term Assessment	End of Term Assessment	End of Half Term Assessment	End of Term Assessment	End of Half Term Assessment	Year 12 End of Year Assessment - Statistics and Mechanics 1.25hr.
<b>Literacy/ Numeracy/ SMSC/ Character</b>	Understanding and interpreting calculations used in mathematical modelling problems set in real-life contexts. Carrying out algebraic proofs of mathematical identities or formulae used in solving problems. Aspiration, Resilience, Initiative, Confidence					