



## Year 12 Mathematics Program of study

<b>Learning</b>	<b>Loving</b>	<b>Living</b>
<p>Key Knowledge  <b>Link apply and adapt</b>            Build knowledge and skills  <b>Self-regulated, reflective independent</b>  <b>Know what they are good at and what to improve</b>            Stretched, challenged supported            Wider ideas culture and the world            Use technology flexibly and responsibly</p>	<p><b>Well informed global citizens</b>            Believe they can make a difference            Shape community and school            Care about the environment and each other            Responsible for their own behaviour            Grow spiritually  <b>Respect and tolerance</b>            Charity, volunteering and fundraising</p>	<p>Wider learning            Leadership, teamwork, collaboration            Success for all abilities            Value creative subjects            Interactions with the world of work            Safety, mental and physical health            Equipped for their unique future  <b>Apply to the world beyond</b></p>
<b>Curriculum Intent</b>		
<p><b><u>Provide pupils with the knowledge and skills they need in order to take advantage of opportunities, responsibilities and experiences of later life</u></b></p> <ul style="list-style-type: none"> <li>➤ Teach students key skills such as how to analyse and evaluate statements through statistical calculation and interpretation.</li> <li>➤ Offer students curriculum related opportunities such as the support programme for A* students organised by Imperial College</li> <li>➤ Develop their understanding of knowledge in lessons and assess these through regular exam-based practice.</li> <li>➤ Empower students to think strategically when solving problems.</li> <li>➤ Regular use of independent work to consolidate and extend their understanding on all parts of the specification.</li> <li>➤ Opportunities to pursue external courses offered by Oxford and Cambridge Universities.</li> <li>➤ An A level Mathematics qualification opens up opportunities to study the subject in higher education, as well as other derived subjects like engineering.</li> <li>➤ Pupils develop an analytical approach to problem solving that is widely acknowledged in many disparate careers</li> </ul> <p><b><u>Clearly state the end points that pupils are building towards and the knowledge and skills required to reach them</u></b></p> <ul style="list-style-type: none"> <li>➤ Clear learning objectives in individual and sequential lessons.</li> <li>➤ Students are aware of their TMG and have a clear understanding of their strengths and areas of improvement through the use of the assessments on a regular basis and feed forward on assessments.</li> <li>➤ Clear outline of assessment requirements with use of student friendly markschemes from Edexcel.</li> <li>➤ Pupils progress through Summary Questions, end of Topic question and end of Section questions questions. Some of these are automatically marked through the Integral site whilst section tests are marked by and feedback is provided by staff.</li> </ul> <p><b><u>Is planned and sequenced so that knew knowledge and skills build on what has been taught and builds towards clearly defined end points</u></b></p> <ul style="list-style-type: none"> <li>➤ Students study Pure Mathematics topics for paper 1 alongside Statistics and Mechanics topics for paper 2 allowing students to gain an understanding of the different aspects of Pure and Applied Mathematics so that they can build a full understanding of the subject.</li> </ul>		



- Students study each topic in clear chunks with integrated assessments which allows them to show skill progression.
- Pupils work through retrieval homeworks that imbed knowledge

**Has high ambition for all pupils**

- Regular use of stretch and challenge within lessons and on homework tasks.
- Challenging assessment tasks are used within each unit with students also given the opportunity to test their understanding with extension tests via the Integral platform from MEI.
- Problem solving skills are explored and developed.

**Spaced memory retrieval for each topic**

- The hierarchy of questions detailed above combined with the formal assessments produces many time spaced memory retrieval opportunities.

(2 lessons used for test and review of test- 3 weeks after or later completion of content. These are not built into the timings of each chapter below and may need to be adjusted to reflect the need to complete the course so that pupils can take AS exams in May if they are available. It will need to be determined which assessments are used-the multiple choice tests on Integral, which may be used as a homework, or the full integral tests that are available after each section. )

Term	Topic NB To include Spaced memory retrieval	No. of Lessons	Assessment
Autumn 1	<p><b>Quadratics (4 Lessons) (Pure chap 2)</b>  <b>Straight line graphs (4 Lessons) (Pure chap 5)</b>            Equations and inequalities (4 Lessons) (Pure Chap 3)  <b>Circles (2 Lesson) (Pure chap 6)</b></p> <p><b>Algebraic expressions (4 Lessons) (Pure chap 4)</b>  <b>Graphs and transformations (4 Lessons) (Pure chap 4)</b></p>	14 lessons	1 Hour Summer Prep. Assessment (covering Pure Work ) FF  Integral Assessment Chapter 2 Integral Assessment Chapter 5 Integral Assessment Chapter 3
Taught by Teacher 1			
Taught by Teacher 2	<p><b>Algebraic Methods ( 5 Lessons) Pure Chap 7</b>  <b>Modelling in Mechanics (1 Lessons) (Mechanics chap 8)</b></p>	14 lessons	Integral Assessment Chapter 4  Integral Assessment Chapter 7



<p>Autumn 2 <b>Taught by Teacher 1</b></p> <p>Taught by Teacher 2</p>	<p><b>October Assessment</b> Probability (5 Lessons) Stats Chap 5 <b>Binomial Expansions (5 Lessons) Pure Chap 8</b> <b>Circles (2 Lesson) (Pure chap 6)</b></p> <p><b>Modelling in Mechanics (3 Lessons) (Mechanics chap 8)</b> <b>Constant acceleration (6 Lessons) (Mechanics chap 9)</b> <b>Forces and motion (3 Lessons) (Mechanics chap 10)</b></p>	<p>12 lessons</p> <p>12 lessons</p>	<p>October Assessment -covering Mechanics Autumn Term1 Integral Assessment Chapter 8 Integral Assessment Chapter 6</p> <p>Integral Assessment Chapter 8 Mechanics Integral Assessment Chapter 9 Mechanics</p>
<p>Spring 1 <b>Taught by Teacher 1</b></p> <p>Taught by Teacher 2</p>	<p>Differentiation (9 Lessons) (Pure Chap 12) Statistical Distributions(3 Lessons) Stats Chap 6</p> <p><b>Forces and motion (8 Lessons) (Mechanics chap 10)</b> <b>Vectors (4 Lessons) Pure Chap 11</b></p> <p><b>Year 12 Mock exam Week</b></p>	<p>12 lessons</p> <p>12 lessons</p>	<p>Integral Assessment Chapter 9 Pure</p> <p>Integral Assessment Chapter 10 Mechanics</p> <p>Integral Assessment Chapter 11 Pure</p>
<p>Spring 2 <b>Taught by Teacher 1</b></p> <p>Taught by Teacher 2</p>	<p>Statistical Distributions(1 Lessons) Stats Chap 6 Integration ( 8 Lessons) (Pure Chap 13) Hypothesis Testing (3 lessons) Stats Chap 7</p>	<p>12 lessons</p> <p>12 lessons</p>	<p>Integral Assessment Chapter 6 Statistics Integral Assessment Chapter 13 Pure</p> <p>Integral Assessment Chapter 9/10 Pure</p>



	<p>Trigonometric Ratios ( 5 lessons) <b>Pure Chap 9</b></p> <p>Trigonometric equations and identities (7 Lessons) Pure chap 10</p> <p>Exponentials and Logarithms ( 1 Lessons) (Pure Chap 14)</p>		<p>1 Hour assessment Statistics Chap 6 FF</p> <p>1 Hour Assessment Pure Chap 12 (FF)</p>
<p>Summer 1 <b>Taught by Teacher 1</b></p> <p>Taught by Teacher 2</p>	<p>Hypothesis Testing (1 lessons) Stats Chap 7</p> <p>Data Collection (5 lessons) (Stats chap 1)</p> <p>Measures of spread and location (4 Lessons) Stats chap2</p> <p>Representation of data ( 2 Lessons) Stats Chap 3</p> <p>Exponentials and Logarithms ( 3 Lessons) (Pure Chap 14)</p> <p>Variable Acceleration ( 7 Lessons) Mechanics chap 11</p> <p>- Algebraic Methods- (2 Lessons) Pure 2 Chap1</p> <p><b>Revision for progress exam/ Real AS exam</b></p>	<p>12 lessons</p> <p>12 lessons</p>	<p>Integral Assessment Statistics Chap 7 FF</p> <p>1 Hour Assessment Statistics Chapters 2/3 FF</p> <p>Integral Assessment Pure Chap 14 (FF)</p> <p>Integral assessment Mechanics Chap 11 FF</p>

