

Further Mathematics at Samuel Whitbread Academy

Intent	<p>At Samuel Whitbread Academy, we aim to teach students that Mathematics beyond GCSE has applications in the real world. We aim for students to appreciate the power of mathematical modelling and demonstrate how Mathematics is intertwined and not a list of separate unrelated topics. The Further Mathematics qualification is designed to support those students that aspire to take Mathematics at university.</p> <p>Our KS5 curriculum has a high expectation of pupils and aims to develop knowledge, depth of understanding and application beyond the classroom. We intend for our students to see how the Mathematics they learn in the classroom could be used to model different situations from the path of a projectile to the spread of an oil slick. Differential equations form a fundamental part of the modelling process at this level and students develop an understanding of the diversity of Mathematics and the various models that can be applied.</p> <p>Mathematics beyond GCSE is a challenging and demanding experience and provides students a very specific skillset. At Samuel Whitbread Academy, we focus on developing and extending skills learned in Year 11 and the Further Mathematics qualification extends well beyond the A Level Mathematics course as well. We aim to create an environment where all students can extend their knowledge of Mathematics beyond GCSE and challenge all abilities and the Further Mathematics course will test the very best.</p> <p>Our curriculum aims to create knowledgeable, motivated individuals who are able to see the greater picture of mathematical modelling and play their part in developing such models in the future.</p>
Implementation	<p>A Level Mathematics at KS5 at Samuel Whitbread Academy is split into three areas; Pure, Mechanics and Statistics. This is advantageous to students as it allows for students of all abilities to access Mathematics beyond GCSE and provides a breadth of understanding for later application at university. Our Mathematics lessons follow the Edexcel A Level Mathematics.</p> <p>Practice is key to the development of knowledge and understanding and students receive feedback from their peers and teachers to identify strengths and weaknesses and enable targeted support. Students lessons are based primarily upon course content and delivered through the interactive whiteboards, challenge is built in with problem solving questions and exam standard questions providing the necessary extension during class.</p> <p>All subject material for Mathematics is accessible for students through the A-Level Learning Platform. We aim to ensure pupil's get the best possible opportunity to build on their learning inside and outside the classroom, and therefore our department's homework strategy is based on recall, retrieving knowledge already visited, and wider research which enriches their experiences at Sixth Form. This enables students to receive regular feedback on their knowledge retentions and ability to apply it to examination style questions.</p>

Our Intent and Implementation aim to ensure that all Mathematics students gain knowledge, techniques, understanding and application of how the world of Mathematics works and the modelling that can be achieved.

Students are regularly assessed to check their understanding and progress within each of the units they are taught in Key Stage 5.

Our assessments include:

- Regular homework questions set on Dr Frost and marked remotely
- Peer and self-assessment of lesson tasks.
- Questions set and assessed by the class teacher.
- IPE exams throughout Year 12 and 13.

The Mathematics department consistently and regularly provide feedback to our students through our assessment-based questions, verbal feedback and demonstration forming the majority. Self-assessment occurs during each term after internal test with identification of strengths and weaknesses forming the main aim of the assessment, thereby enabling more targeted practice to take place.

Uptake of our subject at As and A-Level is very high, with over 60 students taking Mathematics beyond GCSE in the sixth form in each year group, proving to be one of the most popular subjects post-16.