**Hutton Grammar Sixth Form Prospectus information**

**Department: Mathematics**

**Subject:** Mathematics

|  |
| --- |
| **What topics are covered in this subject?**  You will study Pure Mathematics, Mechanics and Statistics. The Pure topics include proof, algebra and functions, trigonometry, calculus, coordinate geometry, sequences and series, exponentials and logarithms and numerical methods. The Statistics topics cover statistical sampling, data presentation and interpretation, probability, statistical distributions and hypothesis testing. The Mechanics topics include quantities and units in Mechanics, kinematics, forces and Newton’s laws of motion and moments. There are three examination papers, which are taken at the end of the course. Each paper is 2 hours and a calculator may be used on each one. |
| **How is this subject taught?**  You will have 2 teachers, one will teach Pure and Statistics and the other will teach Pure and Mechanics. Classes are generally small and lessons are a mixture of explanations, note taking, working through relevant examples and student centred learning. In order to achieve the best grades possible, students should anticipate spending at least 3 hours of their own time on set work, topic familiarisation or reading round the subject. Staff in the Mathematics Department are specialists and are available for extra help or consultation. Homework is set regularly and you are usually assessed after each topic with a more formal assessment at least three times each year. |
| **What are the enrichment opportunities in this subject?**  Students studying Mathematics are invited to assist in KS3 lessons to help weaker students. Students are encouraged to enter the individual Senior Mathematics Challenge organised by the UKMT and we also enter the team Competition at Lancaster University. We have also entered the Ritangle competition run by MEI and attended Problem Solving courses at Lancaster University. |
| **Where does this subject lead at 18+?**  When you obtain your A Level in Mathematics there will be many options available to you. University courses allow students to specialise in various branches of mathematics or to study Mathematics in combination with other subjects. As there is a shortage of well qualified mathematicians, there are many well paid career options open in finance, commerce, industry, engineering and education. Having a mathematical background can sometimes provide exemption from some professional examinations and can be very favourable when applying for degree apprenticeships. |