MATHEMATICS & FURTHER MATHEMATICS

"Pure Mathematics is, in its way, the poetry of logical ideas" Albert Einstein

Current Teaching Staff:
Mrs Z Carpenter Kay - Head of Department
Miss S Bucklar, Miss C Haynes, Mr N Hedden, Mrs S Jones

Examination board and syllabus: Edexcel

Entrance requirements:
For Mathematics - At least a Grade 7 in Mathematics at GCSE Higher level. Also, a Grade 6 or above in Core and Additional science, or at least a Grade 6 in 2 out of 3 separate sciences.

For Further Mathematics - At least a Grade 8 in Mathematics at GCSE Higher level. Also, a Grade 6 or above in Core and Additional science, or at least a Grade 6 in 2 out of 3 separate sciences.

The Courses

In year 12 and 13 you will be taught Pure Core and Applied content of the course. The Pure Core will cover such topics as Algebra, Trigonometry, Calculus and Vectors. The Applied is broken down into Statistics, covering topics such as Hypothesis Testing, Sampling, Probability and Statistical Distributions, and Mechanics, covering topics such as Kinematics, Forces and Newton's Law.

You will have two teachers: one who teaches some Pure content and Statistics, and the other Pure and Mechanics.

Further Mathematics will include Pure Mathematics topics such as Complex Numbers, Further Calculus and Algebra and Applied Mathematics will cover Further Statistics and Mechanics with an option to include Decision Mathematics.

The new course is designed to offer more opportunity to develop your ability to problem solve within mathematics and in other contexts and to reason, interpret and communicate mathematically.

Examinations

All exams will be sat at the end of year 13

Students will sit three 2-hour examination papers; 2 covering the Core Pure Content and 1 covering the Statistics and Mechanics.

Support

The department subscribe to Integral Mathematics, an online interactive Website and APP which includes support materials for the Edexcel Mathematics and further mathematics course. In addition the department continues to use "mymaths," "mathsnet" and recently we have introduced "Dr Frost Mathematics " an online homework and resources teaching tool.

As subscribers to the Further Mathematics Support Programme we have access to regular events and resources to ensure teaching material is up to date and exciting. Students have access to a plethora of resources on the school Intranet "Sharepoint" and are encouraged to use the APP "Desmos graphing Calculator" to support graphical work.

The department runs lunchtime sessions if extra help is needed. Also, an Immersion Day is run in Year 13 in the run up to the final examinations.

All students will be required to purchase a new Calculator Casio fx-991EZ and 2 textbooks per year. A saving scheme will be in place to help spread the cost of this.

Extra-Curricular

In Year 12 You will have the opportunity to participate in the National UK Mathematics Challenge. Student Ambassadors will be chosen to support National UK Mathematics Challenge. Team competitions as well as supporting regular Mathematics learning clinics and outreach activities.

CAREERS

It is important to have strong maths skills for progression to many degree courses at university. A level Mathematics is also essential or desirable for a wide range of degree courses including economics, computing, social sciences and business. A good understanding of algebra, graphs, logarithms and probability are beneficial for the study of chemistry, biology and geography.

Career opportunities include: Engineering (such as Aircraft Modelling, Fluid Flows, Acoustic Engineering, Electronics, Civil Engineering) and New scientific processes (such as Modelling Populations, Quantum Physics, Astronomy, Forensics, DNA sequencing).