Mathematics

Subject:
Maths, like English and Science, is a core subject at school, which we must all study at least up to GCSE level. Mathematics is an essential tool of communication as well as being a fascinating subject in its own right. Mathematics includes transferable skills to help you in your other subjects. You will learn to use problem-solving strategies and to work efficiently by breaking down complex situations into simpler steps. The course is split into four areas of study; algebra, number, statistics, geometry and measure and their application to problem solving. Just as languages provide the building blocks and rules we need to communicate, mathematics uses its own language, made up of numbers, symbols and formulas, to explore the rules we need to measure or identify essential problems like distance, speed, time, space, change, force and quantities. Mathematics helps us find patterns and structure in our lives. Practically, mathematics helps us put a price on things, create graphics, build websites, build skyscrapers and generally understand how things work or predict how they might change over time and under different conditions. Our aim is to continue to develop your child's imagination and flexibility of mind. We promote logical thinking and systematic approaches, both independently and as part of a team, in order that our students have confidence in their own mathematical abilities.

Team members:
Mr A Grady - Head of Department Mrs M Ramprogus- Second in Department Mrs S Raybould- Lead Teacher/KS5 Coordinator Mrs S Perkins Miss L Brown Mr R Kinrade Mrs D Obrien Mrs Z Ridley

Facilities:
Maths suite of classrooms Classroom based

Curriculum Summary: (*KS3, KS4 and KS5*)

KS3:
Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programme of study for Key Stage 3 is organised into apparently distinct domains, but pupils should build on Key Stage 2 and connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge in science, geography, computing and other subjects.

There are no changes to assessment at Key Stage 3, but the new GCSE assessment will alter what you need to learn at Key Stage 3. Within the new Key Stage 3 curriculum, the three aims (developing fluency, problem-solving and mathematical reasoning skills) carry much more emphasis within the new GCSE criteria.

Decisions about progression are based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content in preparation for Key Stage 4. Those who are not sufficiently fluent should consolidate their understanding, including through additional practice, before moving on.

KS4:
Together, the mathematical content set out in the Key Stage 3 and Key Stage 4 programmes of study covers the full range of material contained in the GCSE Mathematics qualification.

Wherever it is appropriate, given pupils' security of understanding and readiness to progress, pupils are taught the full content set out in this programme of study.
Students follow the AQA 8300 Linear Mathematics course. All students will sit three exam papers either at foundation or higher tier. Regular assessment helps our students prepare for their examinations at the end of Year 11.

There is no coursework element as Mathematics is assessed solely by examination.

Entry is at Higher Tier (Grades 4-9) or Foundation Tier (Grades 1-5). Both include 3 papers taken in June. Two Calculator papers and one Non-Calculator paper.

KS5:
AS and A level subject content sets out the knowledge, understanding and skills common to all AS and A level specifications in mathematics.
A level mathematics provides a framework within which a number of young people continue the subject beyond GCSE level. It supports their mathematical needs across a broad range of other subjects at this level and provides a basis for subsequent quantitative work in a very wide range of higher education courses and in employment. It also supports the study of AS and A level further mathematics.

A level mathematics builds from GCSE level mathematics; it introduces calculus and its applications, statistics and mechanics. It emphasises how mathematical ideas are interconnected and how mathematics can be applied to model situations mathematically using algebra and other representations, to help make sense of data, to understand the physical world and to solve problems in a variety of contexts, including social sciences and business. It prepares students for further study and employment in a wide range of disciplines involving the use of mathematics.

AS mathematics is co-taught with the A level as a separate qualification and is a very useful qualification in its own right. It consolidates and develops GCSE level mathematics and supports transition to higher education or employment in any of the many disciplines that make use of quantitative analysis, including those involving calculus.

Links to useful sites:

All our students have will access to Hegarty Maths and to revision videos on Corbett Maths. These help promote independent learning as they give our students ways to develop their maths skills outside of the classroom, perhaps when they are completing homework or working towards an assessment.

Extra-curricular activities available in the CA:

- Masterclasses
- UKMT Maths Individual and Team Challenges
- Visits to universities