Mathematics Department

“Mathematics expresses values that reflect the cosmos, including orderliness, balance, harmony, logic, and abstract beauty.” **Deepak Chopra”**.

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology, and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Our curriculum in mathematics aims to develop fluency in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that students develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. We are also striving to allow students to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, develop mathematical arguments and proofs and make conclusions based on logical inferences. Our intention is also for students to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions as such resilience is a crucial skill that we will be cultivating in students.

Students also need to be able to utilise technology effectively, such as scientific calculators, to perform increasingly complex problems (as well having strong written and mental mathematical skills, not instead of).

As the repertoire of mathematical skills that a student possesses grows increasingly more complex, so should the ability of students to use their mathematics to model real life situations.

Key Stage 3

At key stage 3, we promote equality by working through the breadth of the curriculum at the same pace for all students so that all students can achieve regardless of their starting point. Students are taught in small groups to a maximum of 9. Teachers employ the use of a variety of activities during lessons. This includes the use of 'starter of the day', Mymaths activities, times table bingo, countdown activities etc. At key stage 3 we follow the **Edexcel 3-year scheme of work.**

Key Stage 4

Many employers will ask for a good grade in mathematics, even if their daily business does not involve maths. Mathematics is of central importance in numerous careers including: accountancy, actuary, air traffic controllers, architecture, astronomer, banking, big data analyst, business metrics analyst, civil engineering, claims adjuster, control statistician, cryptographer, database administrator, economist, finance, financial analyst, Insurance underwriter, logistics specialist, marketing consultant, operations research analyst, robotics analyst, systems operation analyst, technical mathematical modeller and video game designers.

At Key stage 4, we follow the **Edexcel scheme of work**. Students are taught in small groups of a maximum of 9. Students are assessed regularly. Year 11 students are allowed to sit a Mock exam to assess their grade levels in **December**. Students are entered for the GCSE Foundation or Higher Tier exams. GCSE Statistics is also offered on the Curriculum and taught as an option Subject for GCSE. This is an option open to all Students in Year 11.

Maths Enrichment

Enrichment activities takes place every **Wednesday** at different locations across the mathematics department. Opportunities are provided for 1-1 intervention sessions, paired activities, use or tarsia activities, exams preparation and other problem-solving activities. The department also run a **puzzle of the week** activity and **Countdown sessions** to improve students' Numeracy skills.