

## Why is Mathematics important?

Mathematics is a creative and highly inter-connected discipline which equips us all with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills, and the ability to think in abstract ways. As such, mathematics is a creative discipline. It can stimulate moments of happiness and wonder when a child solves a problem for the first time, discovers a more efficient solution to a problem or suddenly sees hidden connections.

Throughout history, mathematics has shaped the way we view the world. From the early study of astronomy, discovering the size and weight of the earth, our distance from the sun and the fact that we revolve around it, through to the present day, it is mathematics that has allowed us to move forward. Without this body of knowledge we would not have any of our modern marvels of technology.

Mathematics remains as important today. It is essential to daily life, critical to science, technology and engineering, and necessary for most forms of employment. Many life stages and skills require a solid grasp of mathematics, from entering university to balancing a household budget, applying for a home loan, or assessing a possible business opportunity. When students eventually leave education and seek out a career, they will inevitably need to call upon the mathematical skills and strategies they have learnt at school. They will soon realise that many careers require a solid understanding of maths. Doctors, lawyers, accountants and other professionals use mathematics on a daily basis, as do builders, plumbers, engineers and managers.

Mathematics is a critical skill for many professions and opens a world of opportunity for students.

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.

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## Summary of the Department

The mathematics department is a successful, experienced team with a variety of expertise. All teachers within the department deliver this core subject to KS4, whilst at KS5 a small team work together to ensure a pathway to AS and A level that best suits the needs of each particular cohort.

- Mike Gaunt (Curriculum Leader)
- Steve Quinn (Assistant Curriculum Leader)
- Claire Neilson (PP/PA Coordinator)
- Mark Charlton (KS5 Coordinator)
- David Thompson
- Kylie Sproat
- Andrew O'Connell
- Alex Hands
- Jake Buttress
- Janette King
- Chris McAree (Headteacher)
- David Bones (Assistant Headteacher)
- Chris Mothersdale (Year Group Director of Learning)



## Key Stage 3 – Years 7 and 8

In Years 7 & 8 a flexible setting structure and consistent core Programme of Study provides opportunity for us to best cater for individual need, in line with achievement and progress. All strands of the curriculum are covered, with an increasing focus on problem solving, investigation and functional skills as we work towards equipping all students with essential life skills.

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## Key Stage 4 – Years 9, 10 and 11

During KS4 all students work towards their GCSE in Mathematics. To best meet the needs of each student we assess regularly, and according to attainment and progress the students may move sets throughout the course. Our programmes of study and pathways are specifically designed to cater for this level of flexibility to best ensure each student has the opportunity to progress and achieve their potential over time.

### GCSE Mathematics – AQA 8300

Assessment is done wholly by exam. There is a mixture of non-calculator and calculator papers and these are sat at the end of their final year of study. The two tier entry (Foundation and Higher) remains in place nationally for mathematics, and where appropriate the department does not make final decision about the level of entry for a student until the Spring term of their final year. Grades are achieved between 9 and 1 with 9 being above A\* and 1 being equivalent to G.

### Entry Level Certificate – AQA

This course is run alongside GCSE on an individual basis to further support students in preparation for GCSE and everyday life.

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## Key Stage 5

Mathematics is an ever popular and successful subject at KS5. It is considered an advantage for the majority of university courses and is an essential requirement for many science related degrees. We are also proud to offer Further Mathematics. This well-established course is held in high regard by top Universities due to its' invaluable extension of knowledge base, confidence and understanding, and increasingly forms a requirement for those students wanting to study Mathematics.

### GCE Mathematics (MEI)

This is a linear course and students can certificate in AS Maths or A-Level Maths. The course covers aspects of Pure Maths, Statistics and Mechanics. Grades achieved in AS exams no longer contribute towards the A-Level grade achieved as all content is re-examined at the end of the second year of study.

### GCE Further Mathematics (MEI)

This is a linear course and students can certificate in either AS Further Maths, having studied additional Pure Maths content, Numerical Methods and Modelling with Algorithms, or complete a full A-Level in Further Maths, including further study of Pure Maths content along with additional Mechanics or Statistics.

### Mathematical Studies (AQA) – Level 3 Certificate

This is a level 3 qualification for students who wish to continue mathematics study post 16, yet for whom the traditional GCE course is not appropriate. It gives students valuable skills for their lives and careers post-education, whilst supporting their studies in other subjects, for example Social Sciences, Geography and Psychology.

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## Outside the Classroom

To help with independent study outside the classroom all students have access to the following 2 online learning resources:

- [www.mymaths.co.uk](http://www.mymaths.co.uk)
- [www.vle.mathswatch.co.uk/vle](http://www.vle.mathswatch.co.uk/vle)

Within Key Stage 3 mymaths is regularly used for setting and tracking homework tasks. As students progress through Key Stage 4 and 5 both resources are used by staff to set more individual focused homework tasks and increasingly by students as an additional revision tool through to AS level.

The department encourages participation in the National Mathematics Challenges; junior, intermediate and higher, as well as the Team Challenges.

Through the AS and A level MEI online resource students have access to the student forum, STEM opportunities and further maths support groups.