

Maths

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Curriculum Intent: We build confidence with mathematical reasoning, which is essential for everybody's future. We ensure that all students have the mathematical fluency, reasoning and problem-solving skills to not only excel in assessments, but to fulfil their hopes and dreams in the world beyond. We motivate, challenge, and inspire all learners, while providing support to those who may lack confidence in the subject. We deliver a curriculum which allows students to achieve their full potential.

Core Knowledge	Procedural Knowledge
Topics: Guided by the subject content of the KS4 National Curriculum, building on KS3 and preparing for KS5, and the OCR GCSE Maths Syllabus under the headings: • Number • Algebra • Ratio, proportion and rates of change • Geometry and measures • Probability • Statistics The exact content of core curriculum is defined by the schemes of work for each year group, which are based on the OCR GCSE syllabus. • Calculating • Using Our Number System • Accuracy • Fractions • Percentages • Ratio and Proportion • Number properties • Starting Algebra • Sequences • Functions and Graphs • Algebraic methods • Working with Quadratics • Properties of non-linear graphs • Units and scales • Properties of Shapes • Measuring shapes • Construction • Transformations • Three-dimensional shapes • Vectors • Statistical Measures • Statistical diagrams • Collecting Data • Probability	Students will: Become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time, so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. Apply their mathematics to solve both abstract and real-world problems with increasing sophistication, breaking down complex tasks into simpler steps and persevering to reach solutions., Have a willingness to have a go and know that making mistakes is part of the learning process. Develop mathematical skills through independent practice in and out of lesson. Set out mathematics in an ordered and structured way, showing all working and take pride in their work. Have a good level of subject oracy and be able to justify and explain their mathematical reasoning. Use a scientific calculator and geometric instruments accurately. Be able to apply their mathematical knowledge in Science, Geography, Computing and other subjects. Be able to: • describe numbers and shapes in terms of their properties; • apply proportional reasoning in a range of problems – pie charts, recipes, value for money, rates of change; • plot coordinates and draw graphs; • recall, apply and manipulate a range of formulae and analyse and compare data sets; • use algebra to solve contextual problems.

Homework:

Weekly homework is set using MathsWatch or Dr Frost, mostly practising the skills learnt that week.

Revision tasks are also set as homework to prepare for the two main assessments.

In the Spring Term of Year 11, there will be a programme of practice exam papers to complete in class and at home.

Assessment:

Exam board: OCR

There are two assessments in Year 10, assessing the skills taught and the student's ability to apply the skills and knowledge to GCSE problems. Results will help determine any tier changes from Higher to Foundation during the two-year course.

There are two assessments in Year 11. The first one in the Autumn Term will be two GCSE papers, one calculator and one non-calculator. Students will be provided with a revision list and resources to help them prepare. The second assessment in the Spring Term will be a full set of three GCSE papers, two calculator and one non-calculator. Class teachers will guide students on how to use past papers and other revision resources to prepare for these assessments.

Assessment for learning is used in every Maths lesson to check understanding of prior learning and new content, to address misconceptions and to adapt teaching to students' needs.

Links to Personal Development:

Mathematical knowledge, skills and their application to problem solving is key and requires resilience and the willingness to make mistakes and learn from them.

The curriculum is linked to the real world wherever possible. We make cross-curricular links with Science, Technology, Geography and Food wherever possible.

We support students to get the best grades that they can, so they have as much career choice as possible.

How is my knowledge developed further at Key Stage Five?

Studying GCSE Higher Maths facilitates progression to a wide range of KS5 courses, including A Level Maths, Further Maths and the Sciences. At Key Stage Five, Maths builds on the core skills developed at GCSE, such as algebra, trigonometry and coordinate geometry, while introducing new areas of study, such as differentiation, integration, mechanics and more advanced problem solving.

Students completing GCSE Foundation Maths can progress to Core Maths at KS5. Core Maths strengthens the practical, real-world application of mathematics and supports subjects that rely on data-handling and quantitative reasoning, such as Geography and Psychology.