

The curriculum exposes students to learning opportunities which deepen their educational experience and understanding of mathematics. This, in turn, builds a solid foundation of skills, subject knowledge and experience which is applicable beyond the individual subject of mathematics and their secondary education. Students are educated in the uniqueness and importance of mathematics as an individual discipline and of the beauty that the subject holds. Students in mathematics learn the traditions that allow access to other subjects and education beyond the classroom.

Student progress is governed by the development of their knowledge, skill, understanding, application, resilience and recall. The knowledge gained is powerful when it is remembered.

IMPLEMENTATION:

Students' understanding of mathematics is a gradual and accumulative process which develops knowledge. Links between principles are established over a period of time and when it is appropriate.

The delivery is specific in that it is clearly planned to accumulate knowledge which builds on prior learning.

The aim of making the curriculum accessible is done through the inclusivity and enrichment of the subject both within lessons and out of lessons. Support, intervention and revision are given at appropriate times both within and outside of lessons to help develop student resilience and improve their knowledge recall.

Students becoming more knowledgeable through the specific subject disciplines and their significance within mathematics. This may be interdisciplinary in a variety of other subject areas and hence extend students learning and application of issues raised within mathematical learning. The experiences gained within maths lessons will be enjoyable. This will allow for student development of their problem solving and analytical skills that are interdisciplinary within school subjects and life skills that are very highly valued in future life beyond their secondary education.

From Year 7 students regularly visit core concepts and the potential approaches of thinking within mathematics. The development of the ability to recall knowledge, key facts and processes that allow for various applications is essential to future progress. The deepening of understanding and mastery of thought processes is key to the future study within mathematics, within the Academy and beyond their secondary education.

The early years of secondary education develop new knowledge but importantly build the fluency and understanding of concepts that are applicable in a multitude of subjects both in school and beyond. The ability to be able to demonstrate clear and effective thinking when solving problems where information may be given in an unfamiliar context is a life skill that students benefit from for their future life. You become a more analytical person who will develop reasoning skills that will allow you to prove why a situation or conditions works or does not work. Lessons should be full of discussion, questioning and/or explaining as well as proving.

TERM	Overview
1	Unit 1 - place value Unit 2 & 3 – Addition and subtraction Unit 4 – Addition and subtraction of decimals
2	Unit 5, 6, 7 & 8 multiplication and division
3	Unit 9 – Working with units Unit 10 – Angles Unit 11 & 12 – Triangles and quadrilaterals Unit 13 - Symmetry and tessellation
4	Unit 14 – Understand and use fraction Unit 15 – Fractions of amounts Unit 16 – Multiplying and dividing decimals
5	Unit 17 – Order of operations Unit 18 – Introduction to algebra Unit 19 – Algebraic generalisation project
6	Unit 20 – Percentages Unit 21 – Handling data

TERM	Overview
1	Unit 1 - Understand and use prime factor decomposition Unit 2 - Add and subtract fractions
2	Unit 3 - Compare and calculate with negative numbers Unit 4 - Find and use both term-to-term and position-to-term rules to describe sequences Unit 5 - Form and solve linear equations
3	Unit 6 - Construction of triangles and quadrilaterals Unit 7 - Understand and use properties of angles in parallel lines Unit 8 - Understand and convert between metric units of area for all rectilinear shapes.
4	Unit 9 - Use percentage change including reverse percentages Unit 10 - Understand and use ratio Unit 11 - Understand and use multiplicative relationships in contexts including speed
5	Unit 12 - Understand and use the formulae for area and circumference of circles Unit 13 - Represent and use the properties of three-dimensional shapes Unit 14 - Find the volumes and surface areas of prisms and composite solids
6	Unit 15 - Understand and use appropriate strategies to collect, tabulate and classify data Unit 16 - Understand and use summary measures of data

TERM	Overview
1	Unit 1 - Number Unit 2 – Algebra 1
2	Unit 3 – Geometry 1 Unit 4 – Statistics 1
3	Unit 5 – Ratio Unit 6 – Geometry 2
4	Unit 7 – Geometry 2 Unit 8 – Algebra 2
5	Unit 9 – Algebra 2 Unit 10 – Statistics 2
6	Review of all work and the application of knowledge in problem solving. Development of statistical knowledge and the data cycle

TERM	Overview
1	Unit 1 - Number Unit 2 – Algebra 1
2	Unit 3 – Geometry 1 Unit 4 – Statistics 1
3	Unit 5 – Ratio Unit 6 – Geometry 2
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5	Unit 9 – Algebra 2 Unit 10 – Statistics 2
6	Review of all work and the application of knowledge in problem solving. Development of statistical knowledge and the data cycle.

Year 10 Mathematics builds on previous knowledge from KS3 to develop deeper conceptual knowledge, skills and to broaden knowledge on application and problem solving.

Regular retrieval practice is used across year groups. This checks that students can recall their knowledge and review their own learning which can then be used and applied to context, as well as link across subjects. Throughout each year there are regular pre learning and post learning check points for students which consist of use of questions that are appropriate to the student stage of development. The aim is to become familiar with the format of the questioning prior to end of unit assessments and the GRIT which allows students to reflect on their current progress. At the end of each term KS4 students sit a full GCSE paper to check on their knowledge development and to see how they can apply their knowledge. Teachers will feedback on these check points and provide students with individualised feedback and tasks to develop any areas of improvement needed.

TERM	Overview
1	Algebra 2 Statistics 1 Do Now and starters to follow content of Number 1 and Algebra 1 (from Autumn Y10 SOL)
2	Statistics 2 Geometry 2 Do Now and starters to follow the content of Geometry 1 and Ratio (from Spring Y10 content)
3	Consolidation of learning and areas identified from mock examinations as priorities for review, Do Now and starter activities. Any key areas that have been identified as requiring extra teacher input will be delivered as appropriate for the learners within each of the classrooms. Exam technique further preparation.
4	Consolidation of learning and areas identified from mock examinations as priorities for review, Do Now and starter activities. Exam technique further preparation.
5	Examination period. Review of topic areas examined on paper(s) and further study on areas that have not yet been examined.
6	Examination period. Review of topic areas examined on paper(s) and further study on areas that have not yet been examined.

Year 11 Mathematics builds on previous knowledge from KS3 and Y10 to develop deeper conceptual knowledge, skills and to broaden knowledge on application and problem solving.

Do Now and Starters for lessons in this term address the learning from the previous units in Year 10 to review, consolidate and develop student recall

Weekly retrieval practice is used in Y11 to develop memory recall and identify any further areas for independent study. The aim is to become familiar with the format of the questioning prior to end of unit assessments and the GRIT which allows students to reflect on their current progress. Y11 students sit a half GCSE paper to check on their knowledge recall and identify development requirements. Teachers will feedback on these weekly assessments and students will GRIT their work while the teacher demonstrates full worked examination solutions through WTM.

Extended learning

Useful websites

[hegarty](#) maths

mymaths

mrbartonmaths

corbettmaths

mathsgenie

onmaths

teachitmaths

PiXL maths APP

Careers that the study of Mathematics supports include:

- Actuarial analyst
- Actuary
- Chartered accountant
- Data analyst
- Data scientist
- Investment analyst
- Secondary school teacher
- Software engineer
- Statistician
- Civil Service fast streamer
- Financial manager
- Meteorologist
- Operational researcher
- Quantity surveyor
- Software tester