

Faculty: Maths

Brief overview and aims of the Maths department

The priority in Y7 and Y8 is to ensure that all students 'master' the core skills required to make good or better progress at GCSE level. This involves working through micro-steps of large units including arithmetic, geometry and algebra. In addition, students will improve their fluency in key skills, become better problem solvers and make links back to previous skills. This process allows students to have higher confidence levels and cope with more challenging problems when the GCSE course begins in Y9.

The teaching of GCSE mathematics from Y9 to Y11 covers six main strands: number, algebra, geometry, ratio, probability and statistics. Plenty of emphasis is placed upon improving mathematical methods, applying techniques to solve problems, provide reasoning and interpret mathematical information in a number of forms. Students will also become familiar with the range of ways in which these topics and skills can be assessed. Their ability to overcome the more demanding problems in assessments is developed by consistently making links between a range of topics.

KS3

Topics taught:

	Y7	Y8
Autumn ½ term 1	Place Value Properties of Number Four Operations	Percentages Fractions and % as Operators Percentage Change
Autumn ½ term 2	Fractions Four Operations with Fractions Comparing and Ordering	Ratio Powers & Roots
Spring ½ term 1	Algebraic Expressions Sequences	BIDMAS & Substitution Solving Equations
Spring ½ term 2	Properties of Shape Perimeter Area Angle Rules	Linear & Quadratic Graphs Circles Volume of 3D Shapes
Summer ½ term 1	Angles in Parallel Lines Coordinates	Constructions
Summer ½ term 2	Transformations Data Tables Charts	Similarity & Congruence Probability

How will students be assessed in Maths?

All students will complete a topic test following each unit. Each assessment will cover a range of skills from the unit and students will be awarded gold, silver or bronze outcome depending on the percentage of marks achieved. In addition, students will also complete one termly holistic assessment covering a range of topics and skills to assess which curriculum grade they are currently able to be working at.

What homework is to be expected in Maths?

Homework tasks are set on a fortnightly basis as a minimum expectation. Students will be provided with one of two options. One homework type is a double-sided sheet of 'exam-style' questions with a total score and a pass mark for all students to aim for relative to the ability of the class. Alternatively, students can attempt a project style task by creating their own piece linked to the skills of the latest topic.

What extracurricular activities /enrichment will be offered to students Maths?

The maths faculty offer a range of 'house' activities on a termly basis for students to participate in to develop skills such as problem solving, numeracy and creativity. Both students and staff regularly attempt the 100-Club challenge aiming to successfully answer 100 multiplication questions in under 5 minutes. Also, students can use the faculty iPad resources to improve their arithmetic skills on the Pixl Maths applications by playing games such as 'Bounce' and 'Survival'.

Any useful websites that students could use for support or extra information

www.corbettmaths.com

<https://hegartymaths.com/>

Pixl Maths App

Pixl Times Tables App

KS4

Exam board information:

AQA GCSE Maths (8300) and OCR GCSE Maths (J560)

Exam information:

All students will sit three papers each lasting 90 minutes. Each AQA paper consists of 80 available marks (Total 240) and OCR papers have an additional 20 marks (Total 300). Students will be entered for the foundation (grade 1-5) or higher tier (grade 4-9) depending on the progress made throughout the GCSE course.

Topics taught

	Y9	Y10	Y11
Autumn ½ term 1	Basic Number & Calculations Number Properties Rounding & Approximations Fractions	Measures & Bearings Constructions & Loci Transformations Probability	Combined Probability Venn Diagrams Inequalities Limits of Accuracy
Autumn ½ term 2	Decimals Percentages	Statistical Calculations Statistical Diagrams Scatter Graphs	Variation Sine & Cosine Transforming Graphs Circle Theorems
Spring ½ term 1	Ratio & Proportion Angles	Linear Equations Sequences	Vectors Algebraic Fractions Functions Compound Measures
Spring ½ term 2	Measures & Bearings 2D & 3D Shapes Properties of Polygons	Linear Graphs Powers & Indices	Equation of a Circle Iteration Other Graphs Proof
Summer ½ term 1	Transformations	Standard Form Pythagoras	**REVISION & Exam Prep**
Summer ½ term 2	Constructions & Loci Expressions & Formulae	Trigonometry Congruence & Similarity Quadratics	

How will students' progress be assessed throughout the course?

All students will complete a topic test following each unit. Each assessment will cover a range of skills from the unit and students will be awarded gold, silver or bronze outcome depending on the percentage of marks achieved. Students track these outcomes in their exercise books to monitor their best topics and areas to improve. In addition, students will also complete a minimum of one termly GCSE paper covering a range of topics and skills to assess which curriculum grade they are currently able to be working at. Y11 and Y10 students also complete planned series of mock examinations building up to three papers in each Y11 block to provide familiarity with the summer exam series.

What homework will students expect?

Homework tasks are set on a fortnightly basis as a minimum expectation. Students complete a double-sided sheet of 'exam-style' questions with a total score and a pass mark for all students to aim for relative to the ability of the class. In addition, Y11 students are provided with homework and grade booklets at the start of the academic year to work through in their own time.

Any useful websites or information that students can use to support their learning?

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