

## CURRICULUM OVERVIEW OF: GCSE MATHEMATICS

There are 5 main stands in Mathematics these are Number, Algebra, Ratio and Proportion, Statistics and Geometry. Within each of these areas of Mathematics we will be cover the aims of the national curriculum and ensure all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils 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
- can 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

In Year 9, students begin their GCSE course, building on the skills learned in Key Stage 3 and preparing them for Years 10 and 11. A large emphasis is now placed on GCSE content, which means that as well as giving the pupils the necessary skills needed to complete the course at an appropriate level in Year 10 and 11.

In Year 10, students continue their GCSE course, building on the skills learned in Year 9 and preparing them for Year 11 and GCSE Examination. Regular assessment throughout the year informs us and the student of progress and attainment. Students are increasingly aware of strengths and weaknesses, and are able to address these in class and at home using Hegarty Maths.

In Year 11, students begin their final year of their GCSE course, building on the skills learned in Years 9 & 10 and preparing them for their examinations at the end of Year 11. Students will consolidate their learning in readiness for the GCSE's.

As in Year 10, students are assessed regularly and their progress is stringently tracked to ensure that pupils are on track to reach their target grade.

At the end of Key Stage 4 we aim for all students to have achieved a minimum expected grade and encourage students to exceed this through mastering the content at their allocated tier. At the top end, students are encouraged to strive to achieve grade 7, 8 or 9, and are encouraged to continue with Mathematics in Year 12 such as A Level Mathematicians.

We endeavour to ensure that students leaving in year 11 have had an excellent journey in Mathematics and leave Lowton as accomplished problems solvers.

Qualification: GCSE Mathematics

Specification: Edexcel

Link to GCSE specification:

<https://qualifications.pearson.com/content/dam/pdf/GCSE/mathematics/2015/specification-and-sample-assesment/gcse-maths-2015-specification.pdf>

A – Algebra Unit, N – Number Unit, G – Geometry Unit, S – Statistics Unit, R - Ratio and Proportion Unit.

## HIGHER TIER

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 9 Topics</b>	N- Factor Theory, Further Indices, Surds A – Expressions, Equations and Formulae	<b>KEY ASSESSMENT 1</b>  S – Averages and Correlation N – F,D and %	G – Trig, Pythagoras and Polygons  <b>KEY ASSESSMENT 2</b>	G – Graphs and Functions G – Prisms and Sectors	G - Transformations  Revision and exam preparation	<b>END OF YEAR ASSESSMENT</b>  Reflection Enrichment
<b>Year 9 Rationale</b>	<ul style="list-style-type: none"> <li>To be fluent in Mathematical language.</li> <li>To introduce more advanced number systems.</li> <li>To be able to use more advanced functions of a scientific calculator.</li> <li>To begin to cover new GCSE concepts at an appropriate level.</li> <li>To regularly access GCSE level problem solving questions.</li> </ul>					
<b>Year 10</b>	A - Equations and Inequations S – Probability  <b>KEY ASSESSMENT 1</b>	N – Multiplication Theory G – Similarity G – Advanced Trigonometry	G – Advanced Trigonometry S – Representing grouped data	<b>KEY ASSESSMENT 2</b>  A – Equations and Graphs A - Change the subject	A – Functions and Proof  Revision and exam preparation	<b>END OF YEAR ASSESSMENT</b>  Reflection Enrichment
<b>Year 10 Rationale</b>	<ul style="list-style-type: none"> <li>Cover the majority of the GCSE specification.</li> <li>To be able to communicate their reasoning process to their peers using Mathematical language.</li> <li>To become a more reflective learner in Mathematics.</li> <li>To understand the different revision techniques required at GCSE.</li> </ul>					
<b>Year 11</b>	Consolidate year 10 G – Vectors G – Geometric Proof  <b>KEY ASSESSMENT 1</b>	A – Graphs and Proportion  <b>MOCK EXAM 1</b>	Revision and exam preparation	<b>MOCK EXAM 1</b>  Revision and exam preparation	Revision and exam preparation	
<b>Year 11 Rationale</b>	<ul style="list-style-type: none"> <li>To complete the GCSE specification.</li> <li>To show resilience to all aspects of Mathematics.</li> <li>To use and act upon feedback from full mock examinations.</li> </ul>					

