

# KS4 Maths

## Curriculum Overview

### Curriculum Intent

Our aims are to 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. To reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. To ensure that students 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.

The scheme of learning follows the National Curriculum content with well sequenced lessons. It builds on prior attainment and stretches all with depth and breadth of skills and knowledge. The stage 3 and 4 programmes of study are embedded through the scheme of work. Our curriculum shows the national Curriculum progression in the scheme of work from Key stage 2 through to Key Stage 5. Lessons are sequenced, with challenge for the most able students as well as scaffolded support for the low attainers. We have end of block and termly assessments which are adapted to suits the needs of all students.



<b>How is Maths assessed at THA?</b>	<b>Cross Curricular Links</b>	<b>How this prepares students for their next stage of education/employment</b>
<p>We use assessment to check for prior knowledge which allows teachers to build on the understanding already embedded. Diagnostic questions are used in every lesson along with white boards to record answers. Teacher are very quickly able to access understanding at any point before moving on. End of unit tests are used to check for recall and summative tests provide levels of attainment. All marking is scrutinized and time given within departments for moderation, to ensure standardisation and reliability of the data.</p>	<p>In Science, mathematics provides the foundation for analysing and modelling qualitative data, enabling scientific investigations. Maths also intersects with art through geometry and patterns. In Geography, with constructing and interpreting graphs.</p>	<p>The Maths curriculum equips students with a broad range of mathematical knowledge, skills and problem-solving strategies that are applicable to their future educational pursuits and professional endeavours. It prepares them to think critically, reason quantitatively and approach challenges with confidence, regardless of their chosen field.</p>
	<p><b>Enrichment Opportunities</b></p>	<p><b>Resources/Materials to Support Learning</b></p>
	<p>Supported Maths learning after school.</p>	<p><a href="http://www.sparxmaths.com">www.sparxmaths.com</a> for home learning <a href="http://www.corbetsmaths">www.corbetsmaths</a> for additional resources <a href="http://www.mathsonline.com">www.mathsonline.com</a> for free online GCSE papers <a href="http://www.pearsons.com">www.pearsons.com</a> for revision resources</p>

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10	<b>Topic: Similarity</b>	<b>Topic: Developing Algebra</b>	<b>Topic: Geometry</b>	<b>Topic: Proportions and Proportion al Change</b>	<b>Topic: Delving into data</b>	<b>Topic: Using Number</b>
	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Congruence, Similarity and enlargement</li> <li>• Trigonometry</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Equations and Inequalities</li> <li>• Simultaneous Equations</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Angles and Bearings</li> <li>• Working with circles</li> <li>• Vectors</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Ratios and fractions</li> <li>• Percentages and Interest</li> <li>• Probability</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Delving into Data</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Non – calculator Methods</li> </ul>
Year 11	<b>Topic: Graphs</b>	<b>Topic: Algebra</b>	<b>Topic: Reasoning</b>	<b>Topic: Revision and Communication</b>	<b>Topic: Revision Past Papers, AO2 and 3 questions</b>	<b>Topic: Examinations</b>
	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Gradients and lines</li> <li>• Non-linear graphs</li> <li>• Using graphs</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Expanding and factorising</li> <li>• Changing the subject</li> <li>• Functions</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Multiplicative reasoning</li> <li>• Geometric reasoning</li> <li>• Algebraic Reasoning</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Multiplicative reasoning</li> <li>• Geometric reasoning</li> <li>• Algebraic Reasoning</li> </ul>	<b>Key Knowledge:</b> <ul style="list-style-type: none"> <li>• Skills – fluency, reason mathematically and solve</li> <li>• Knowledge - refer to top 40</li> </ul>	<b>Key Knowledge:</b>