



The Priory Witham Academy : Curriculum Overview

Believe together, achieve together

SUBJECT	Maths	CURRICULUM LEADER	Mr Webster	YEAR	Year 10 – Higher Tier
ORGANISATION OF THE SUBJECT	<p>Mathematics is a core subject within the National Curriculum. It is a compulsory subject for all pupils up to the age of sixteen, taught in four, one-hour periods per week. It enables pupils to build a secure framework of mathematical reasoning, which they can use and apply with confidence.</p> <p>In Year 10 Mathematics is taught in groups set on the mathematical ability of the pupils. There is also extra support available within these lessons from another qualified maths teacher as well as Pupil Support Assistants.</p> <p>The Academy will follow the Edexcel linear syllabus. Students who are entered for the Higher tier will sit their exam at the end of Year 11 and the exam will be grade from the highest possible grade 9 to a grade 3.</p>				
Key Concepts (The big ideas underpinning this subject)			Key Skills in this subject		
<p>Mathematics at GCSE level should enable students to:</p> <ul style="list-style-type: none"> • develop fluent knowledge, skills and understanding of mathematical methods and concepts • acquire, select and apply mathematical techniques to solve problems • reason mathematically, make deductions and inferences and draw conclusions • comprehend, interpret and communicate mathematical information in a variety of forms appropriate to the information and context. 			<p>We aim to set challenging targets with high expectations for all pupils at all abilities; to offer a variety of approaches to teaching and learning; to smooth the transition for pupils between Key Stages and ensure progression in teaching and learning throughout their time at The Priory Witham Academy.</p> <p>The key skills taught in Mathematics through the GCSE curriculum are:</p> <ul style="list-style-type: none"> • Mathematical fluency • Mathematical Reasoning • Mathematical Problem Solving • Communication <p>These are skills that will be taught across all key areas of the GCSE Mathematics curriculum:</p> <ul style="list-style-type: none"> • Number • Algebra • Ratio, proportion and rates of change 		

	<ul style="list-style-type: none"> • Geometry and measures • Probability • Statistics
<p>What will be learnt in this subject?</p>	<p>How will learning take place in this subject?</p>
<p>Year One</p> <p>Module one</p> <ul style="list-style-type: none"> • Calculations, checking and rounding • Indices, roots, reciprocals and hierarchy of operations • Factors, multiples, primes, standard form and surds • Algebra: the basics, setting up, rearranging and solving equations • Sequences <p>Module two</p> <ul style="list-style-type: none"> • Averages and range • Representing and interpreting data and scatter graphs • Fraction and percentages • Ratio and proportion <p>Module three</p> <ul style="list-style-type: none"> • Polygons, angles and parallel lines • Pythagoras' Theorem and trigonometry • Graphs: the basics and real-life graphs • Linear graphs and coordinate geometry • Quadratic, cubic and other graphs <p>Module 4</p> <ul style="list-style-type: none"> • Perimeter, area and circles • 3D forms and volume, cylinders, cones and spheres • Accuracy and bounds • Transformations • Constructions, loci and bearings <p>Module 5</p>	<p>Work in Mathematics will vary depending on the subject matter being taught, the stage of the students learning and what the outcomes of each lesson are meant to be.</p> <p>In lessons written work will be expected to be of a high standard being presented in the correct way. We understand students learn differently and so the teaching will often adapt to cater for the needs of individual children.</p> <p>Work in class may include but not limited to:</p> <ul style="list-style-type: none"> • Problem solving tasks – these are more open ended tasks giving students the opportunity to explore mathematical concepts in more depth to create links between those concepts and to gain a greater understanding of them. • Questions from a worksheet or textbook – These tasks help to improve the student's mathematical fluency which is essential if a concept is to be fully understood, initial ideas are developed by working methodically through questions that may change in style or difficulty in order to embed a specific concept. • Tarsia or Loop card activities – These activities require students to work in groups, to develop their mathematical communication skills. They are encouraged to discuss their thoughts and reasoning through discussion and justify their theories in order to reach a desired outcome. • Testing – Inevitably in Years 10 there will be different levels of testing. These will range from end of unit tests that the teachers will use to inform future planning to full Mock examinations which your child will sit at the end of Year 10.

<ul style="list-style-type: none"> • Solving quadratic and simultaneous equations • Inequalities • Probability • Multiplicative reasoning <p>Module 6</p> <ul style="list-style-type: none"> • Similarity and congruence in 2D & 3D • Graphs of trigonometric functions • Further trigonometry 	<ul style="list-style-type: none"> • Revision activities – Throughout their GCSE course students will be taught revision techniques and in some lessons they will be given tasks that allow them to develop these essential skills that they will need in order to pass their examination at the end of the course. • Project work – At times within the course students will be given the opportunity to practise skills they have already learnt and take part in a larger scale project with other students. This ensures they have the skillset needed and will include things like methodology, proof, justification and evaluation. <p>In all of these tasks students are encouraged to challenge themselves and their limits. The work will be designed to ensure each and every student is stretched in order to achieve their potential. Within lessons work will be personalised and differentiated to support the individual needs to the students and they will be appropriately supported by the teaching staff.</p>
<p>What methods of assessment will be used?</p>	<p>How can you support learning and progress in this subject?</p>
<p>Final Assessment</p> <p>Three, 90 minute examinations.</p> <p>Paper 1 – Non-calculator 80 marks Paper 2 – Calculator 80 marks Paper 3 – Calculator 80 marks</p> <p>A student’s final grade will be derived from the total of 240 marks.</p>	<ul style="list-style-type: none"> • Support students at home, encouraging them to complete homework and discussing mock examination grades and progress. • Ensure you are aware of the different online and offline resources your child can access when they are not in school. • Support your child with effective time management. • Communicate with school, your child will certainly benefit from positive dialogue between yourself and your child’s teacher. • Support the school by allowing your child to attend extra-curricular clubs and intervention sessions. • Ensure you know how to access and use Show My Homework to support your child with their homework.
<p>Equipment needed for this subject.</p>	<p>Learning outside the classroom: enrichment opportunities in this subject.</p>

- Black pen
- Pencil
- 30cm ruler
- Protractor
- Pair of compasses
- Rubber
- Scientific calculator (We recommend the Casio FX-85GTPLUS which can be bought in most stationary shops).

All pupils have access to a variety of hard copy and online support such as:

- SharePoint
- MathsWatch
- BBC Bitesize
- Pinpoint Learning

All of which follow the curriculum taught in class. Students should know their own user names and passwords but they can all be obtained from the Mathematics office if needed. They can access these both in school and out. All pupils are encouraged to use these resources as often as possible.

Students can also purchase revision guides and revision workbooks. These are available from most school stationary shops. Please ensure you purchase the correct ones. You will need the Edexcel GCSE Mathematics 9-1 Specification Higher tier books.