



**Subject:** Mathematics

**Head of Department:** Ms S Arrowsmith

### **Curriculum Intent**

Hornchurch High School's Maths department equips students with the mathematical fluency and reasoning needed to tackle problems. Our curriculum is logically sequenced such that knowledge and skills are developed cumulatively, which ensures students are appropriately challenged and able to make links between mathematical strands. Our essential wider curriculum - including trips, workshops, competitions and access to careers advice - serves to provide our students with an appreciation of the application of maths to the world around them. We strive to ensure all students, regardless of their starting points, are able to master threshold concepts and cultivate a deeper understanding of the subject which, in turn, develops their confidence and resilience both in and outside the classroom. Indeed, students will leave us equipped with the ability to methodically analyse and break down problems – a skill transferable to any position they uphold in wider society - as well as the qualifications they require to move on their chosen next steps.

### **Year 7 Topics**

- Autumn Term 1 – Place value, four operations and negative numbers
- Autumn Term 2 – Multiplication and division, area and decimals
- Spring Term 1 – Fractions and ratio
- Spring Term 2 – Algebra and angles
- Summer Term 1 – Angles, representing data and probability
- Summer Term 2 – Probability, units and group projects

### **Year 8 Topics**

- Autumn Term 1 – Sequences, graphs and percentages
- Autumn Term 2 – Percentages, indices and algebra
- Spring Term 1 – Ratio and averages
- Spring Term 2 – Representing data and probability
- Summer Term 1 – Algebra, angles and circles
- Summer Term 2 – Circles, 3D shapes and group projects

### **Year 9 Topics**

- Autumn Term 1 – Indices, Standard form and equations
- Autumn Term 2 – Angles, accuracy and bounds, bearings and map scales and algebra
- Spring Term 1 – Transformations, linear graphs, Pythagoras' Theorem and trigonometry



**HORNCHURCH**  
HIGH SCHOOL  
EXCELLENCE FOR ALL

- Spring Term 2 – Graphs, Compound measures, surface area and volume
- Summer Term 1 – Inequalities, compound measures, ratio and proportion
- Summer Term 2 – Similarity and congruency, construction and loci

### **Year 10 Topics**

- Autumn Term 1 – Calculations, percentages, expanding and factorising, surds and types of number
- Autumn Term 2 – Indices, equations, Pythagoras' Theorem and Graphs
- Spring Term 1 – Inequalities, probability and simultaneous equations
- Spring Term 2 – Representing data, bounds and sequences
- Summer Term 1 – Area and circles, volume and statistics
- Summer Term 2 – Statistics and similar shapes

### **Year 11 Foundation Topics**

- Autumn Term 1 – Calculations, fractions, algebra, percentages, vectors and ratio
- Autumn Term 2 – Equations, angles and graphs
- Spring Term 1 – Graphs, simultaneous equations, probability, area and inequalities
- Spring Term 2 – Similar shapes, volume and surface area
- Summer Term 1 – Revision
- Summer Term 2 – GCSE exams

### **Year 11 Higher Topics**

- Autumn Term 1 – Surds, functions, algebraic fractions, vectors, iteration
- Autumn Term 2 – Proportion, graphing inequalities and transforming graphs
- Spring Term 1 – Exponential graphs, completing the square, further algebra, advanced trigonometry, quadratic simultaneous equations
- Spring Term 2 – Congruency and proof and circle theorem proof
- Summer Term 1 – Revision
- Summer Term 2 – GCSE exams

### **GCSE Specification Details and Assessment:**

Edexcel GCSE Maths IMAI



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

### **Spiritual, moral, social and cultural development (SMSC)**

*We teach real life maths-related skills, such as how to understand a pay check, how tax brackets work and how to budget, as well as link the subject to different cultures; for example, the history of Sudoku, the work of black mathematicians in the US and UK since 1900 and the origins of number systems. We also make explicit connections between some of the units we teach and their real life significance, such as the importance of ratio in careers such as building and construction and hairdressing, or the appreciation for numerical skills - such as mental arithmetic, fractions and percentages – in and outside of the workplace.*

**Staff Contact:** Ms S Arrowsmith

**Email:** [reception@hornchurchhigh.com](mailto:reception@hornchurchhigh.com)