



## KS3 Curriculum Overview (Year 7 and 8)

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The Mathematics Department consists of a passionate and dedicated team of staff who cater for all stages. We are highly ambitious for all our students; we tailor environments and lessons to simultaneously challenge the mathematically gifted and nurture those who find mathematics difficult. Lessons are 100 minutes in duration with year groups having access to 4 or 5 sessions per fortnight.

Effective teaching and learning of mathematics at Marshland High School takes place through a variety of styles and strategies both in and out of the classroom. The emphasis is firmly rooted in gaining mastery and making connections between ideas rather than generating correct answers in isolation. The ultimate aim is for students to leave Marshland High with the confidence to apply mathematical skills which are pertinent to their chosen post-16 destination.

Mathematics at Marshland consists of several key themes discovered by weaving a seamless pathway throughout both key stages. During Key Stage 3 we focus on making sure the students are fluent in the fundamentals of numeracy, that their resilience is fostered through the application of concepts to solve increasingly more complex problems and their mathematical reasoning remains a core element that permeates through all lessons.

The curriculum for mathematics has six areas of study; Number; Algebra; Geometry and Measures; Ratio, Proportion and Rates of change; Probability and finally, Statistics.

### **Students enjoy access to a wide variety of activities including:**

#### **Year 7**

Throughout Year 7 students will focus on becoming fluent in key numeracy skills including multiplication facts and effective written communication of mathematical ideas. Depth of understanding and ultimately progress is regularly assessed through diagnostic question tests.

#### **Autumn Term**

Application of the four operations; priority of operations, working with negative and positive integers, prime numbers, factors, multiples, roots and indices; culminates in a MHS bake off fractions project. Half term two incorporates experimental probability, properties of polygons and a wrapping paper project to finish off the year.

#### **Spring Term**

Begins with an introduction to algebra, investigating sequences and patterns such as Fibonacci, estimation and rounding.

Half term two focuses on perimeter and area; constructions; plans and elevations; with a project on designing a zoo.

#### **Summer Term**

Embraces coordinate geometry, interpreting and drawing real life graphs such as distance-speed-time; percentages, ratio and proportion concludes the year with a 'best recipe for a smoothie' summer project.



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### Year 8

During Year 8, students continue to deepen their understanding through investigation and application of their knowledge to an array of standard and non-standard problems that increase in complexity. Reasoning is developed further through rigorous questioning that probes a student's ability to justify solutions, extrapolate results, and draw conclusions using mathematical proof.

### Autumn Term

Straight line graphs, including investigation of the equation of a line. Following on neatly comes sequences and the  $n$ th term with a project specifically aimed at discovering the wealth of careers that a qualification in mathematics can lead to.

### Spring Term

Angles in parallel lines, angles in polygons (interior and exterior); solving equations using the inverse and transforming shapes by enlargement, translation, reflection and rotation. The term finishes off with a tour de force on circles and a project on pi!

### Summer Term

Utilises major sporting events such as Wimbledon to investigate the use statistical diagrams; calculation of averages and limitations of measures of spread. Ratio and proportion complete the scheme for year 8.