# Mathematics Curriculum Overview

| | Term 1 | Term 2 | Term 3 |
|---|---|---|---|
| **Year 7** | **Sequences.**<br>**Algebraic Notation.**<br>**Equality and Equivalence.**<br>**Place value and ordering**<br>**Fraction decimal and percentage equivalence.**<br><br>This unit is spent exploring sequences in detail. The focus is on developing a deep understanding of the basic algebraic forms. Students will explore integers and using and understanding number lines. Students will gain a deep understanding of the links between fractions, decimals, and percentages so they can convert fluently. | **Solving problems with the four operations.**<br>**Fractions and percentages of amounts.**<br>**Operations and equations with directed numbers.**<br>**Addition and subtraction of fractions.**<br><br>This term will see students apply some of the fundamental maths skills. Students will also extend and deepen their understanding of directed number. The second part of this unit provides more experience of fractions with any denominator and introduces students to addition and subtraction of fractions. | **Constructing.**<br>**Measuring and using geometry.**<br>**Developing geometric reasoning.**<br>**Developing number sense.**<br>**Sets and probability.**<br>**Prime numbers and proof.**<br><br>Having consolidated some number skills in the previous terms, students will extend their knowledge in the context of geometry and probability. Students will also learn about sets and systematic listing strategies. Types of numbers will be used as the basis for forming and testing conjectures. |
| **Year 8** | **Ratio and scale.**<br>**Multiplicative change.**<br>**Multiplying and dividing fractions.**<br>**Working in the cartesian plane.**<br>**Representing data.**<br>**Tables and probability.** | **Brackets, equations, and inequalities.**<br>**Sequences.**<br>**Indices.**<br>**Fractions and percentages.**<br>**Standard Index form.**<br>**Number sense.** | **Angles in parallel lines and polygons.**<br>**Area of trapezia and circles.**<br>**Line symmetry and reflection.**<br>**The data handling cycle.**<br>**Measures of location.**<br><br>Students will learn about angles in parallel lines. They will learn the |

| | | | |
|---|---|---|---|
| | This term will see students develop their proportional reasoning and enhance their understanding of mathematical representations. Students will also cover multiplication and division by both integers and fractions. Students will look formerly at algebraic rules for straight lines. Students are introduced formally to bivariate data and the concept of correlation. Students will use sample spaces and tables to revisit probability. | Students will explore expanding single brackets and linear factorising. The higher strand will also explore expanding two binomials. Year 7 learning is further reinforced by looking at sequences with more complex algebraic rules. Students look at the ideas behind addition and subtraction laws of indices. This unit also focuses on the relationships between fractions and percentages including decimal equivalents and using these to workout percentage increase and decrease. Standard form is now introduced to all students, building from their earlier work on indices. Number sense provides an opportunity for students to revisit key number skills. | formulae for areas of trapezia and area of a circle. Students will learn about reflection. This unit explores when graphs may be misleading. Students will look at the collection of data including designing and criticising questionnaires. This unit also introduces the mode and looks at when and why each average should be used. |
| **Year 9** | **Factors, multiples and primes.**<br>**Algebraic Manipulation**<br>**Accuracy and Rounding.**<br>**Mensuration**<br>**Right angled triangles (H only)**<br>The start of this transition year revisits some basic number concepts from Years 7 and 8 and some fundamental algebraic skills that will be used to support in the development in problem solving skills. Students will complete work linked to area, perimeter, and volume. Some students will be introduced to Pythagoras' Theorem and Trigonometry. | **Constructions**<br>**Straight line Graphs**<br>**Direct and Inverse Proportion**<br>**Fractions, Decimals and Percentages**<br>**Percentage change**<br>**Financial Capability**<br><br>Student will continue their journey through geometry at the start of this unit. They will then look at proportionality and finally develop their 'maths for life' in the financial capability module. | **Solving equations**<br>**Indices and standard form**<br>**2D and 3D representations**<br>**Probability**<br><br>Students will continue to develop their fundamental skills for problem solving. They will also look at shorthand ways of writing numbers. Students look at variety of diagrams that support probability such as sample space diagrams, Venn diagrams and two-way tables. |

| Year 10 Foundation | **Fractions, decimals and percentages**<br>**Equations and inequalities**<br>**Straight-line graphs**<br>**Compound units**<br><br>Students will start their GCSE course in earnest. They will continue to develop their skills within the key strands of algebra and number. This will develop their application of inverse operations and further improve their fluency with fractions, | **Geometric Review**<br>**Exact Calculations**<br>**Vectors**<br>**Probability**<br>**Collecting, organising, presenting, and analysing data**<br><br>Students will review some of the language, notation and conventions associated with angles and shapes. This will provide an opportunity to explore the concept of exact calculations. Students will explore averages including those in frequency tables. | **Bivariate Data**<br>**Graphs**<br>**Transformations**<br>**Mock Preparation**<br>**Mocks**<br><br>Students will look at bivariate data and the idea of correlation. This unit will support the work in both Maths and statistics. Students will look at translating, rotating and reflecting |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | decimals and percentages. This will be especially helpful when working with compound unit. | | shapes. They will also develop their knowledge of non-linear graphs looking at quadratic, cubic and reciprocal graphs so they recognise different shapes. |
| **Year 10 Higher** | **Exact calculations**<br>**Surds**<br>**Non right-angled trigonometry**<br>**Sequences**<br>**Straight line graphs**<br>**Real world graphs**<br><br>Students will begin their GCSE by looking at rational and irrational numbers. They will explore how the use of surds enable us to produce exact calculations. In addition, students will look at linear, geometric and quadratic sequences. Some of this work may support them with the construction of graphs. | **Time Series**<br>**Similar Figures**<br>**Compound Units**<br>**Probability**<br>**Data Collection and Sampling**<br><br>Students will develop their understanding of proportionality in the context of geometry.<br>They will then move on to look at experimental and theoretical probability and gain an understanding of how the number of trials have on reliability. At the end of the term students will begin the data handling cycle which will support both GCSE maths and statistics. | **Bivariate Data**<br>**Non-linear graphs**<br>**Transformations**<br>**Mock preparation**<br>**Mocks**<br><br>Students will look at bivariate data and the idea of correlation. This unit will support the work in both Maths and statistics. Students will look at translating, rotating and reflecting shapes. They will also develop their knowledge of non-linear graphs looking at quadratic, cubic and reciprocal graphs so they recognise different shapes. |
| **Year 11 Foundation** | **Simultaneous equations**<br>**Similar figures**<br>**Mock Series 1 Preparation**<br>**Mocks Series 1**<br>**Post Mocks Series 1 intervention**<br><br>Students will start the year with some of the more complex maths on the foundation paper.<br>They will then begin preparation for their first series of mocks. After the mocks students will revisit topics as necessary. | **Functions**<br>**Maths revision program begins**<br>**Preparation for Mocks Series 2**<br>**Post Mocks Series 2 intervention**<br>**Summarising data**<br><br>During this term students will finish off their maths course and continue to prepare for their GCSE in statistics. | **Revision and Exams** |

| Year 11 Higher | Inequalities<br>Circle Theorems<br>Preparation for Mocks<br>Mocks Series 1<br>Post Mocks Series 1 intervention | Organising, presenting, and analysing data<br>Functions<br>Preparation for Mocks Series 2<br>Post Mocks Series 2 intervention<br>Transformations of Graphs | Revision and Exams. |
| --- | --- | --- | --- |

| | | |
|---|---|---|
| | **Organising, presenting, and analysing data**<br>Students will look at more complex inequalities problems including graphs and quadratic inequalities. Students will also look at the circle theorems including proofs. After the mocks students complete statistics work which will support both Maths and Statistics GCSE. | **Vectors.**<br>**Probability distributions.**<br><br>During this term students will finish off their maths course and continue to prepare for their GCSE in statistics. They will look at reflecting and translating functions as well as vector geometry.<br>Data collection and sampling:<br>Understand what the population of a study is and the difference between population and sample.<br>Understand what is meant by simple random sampling. | |