Maths Curriculum:

Purpose of our study

We believe mathematical intelligence is expandable, and that every child can learn mathematics, given the appropriate learning experiences within and beyond the classroom. Our curriculum map reflects our high expectations for every child. Every student is entitled to master the key mathematical content for their age, by receiving the support and challenge they specifically need.

In the mathematics Department, "Where Everyone Counts", our aim is to design, deliver and regularly re-assess a curriculum model that focuses on key concepts that develop the building blocks of Number, Algebra, Proportional Reasoning, Data and Geometry. Our intent is to promote a positive perception of mathematics whilst developing the skills and knowledge to be able to access the next level of learning. At the heart is the promotion of fluency and problem solving.

We believe that pupils should be encouraged to use mathematical language throughout their maths learning to deepen their understanding of concepts.

The way students speak and write about mathematics has been shown to have an impact on their success in mathematics.. We therefore use a carefully sequenced, structured approach to introducing and reinforcing mathematical vocabulary throughout maths lessons, so students have the opportunity to work with word problems from the beginning of their learning.

Aims

Our curriculum for maths aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- Be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios
- Reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.
- Have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately to be successful in mathematics.

Subject content

Our curriculum map is sequenced so that concepts and methods previously learnt can be connected to new learning, supporting students in understanding the coherent and connected nature of the subject, and ensuring they consolidate learning by continually using and applying it in a variety of contexts. We believe that all of mathematics can be appreciated more fully once a student has a deep appreciation of the number system, therefore we put number sense and place value first to ensure that all understanding builds Our key stage 4 curriculum is designed to build upon skills learnt at key stage 3. At this stage in the curriculum students will now be following a foundation tier or a higher tier scheme of work.

Maths Curriculum Plan

	Half Term	Year 7	Year 8	Year 9	Year 10	Year 11
Autumn Term	1	Sequences Place value Addition and subtraction Multiplication and division Factors and multiples	Rounding Algebraic expressions Linear equations Angles Area and perimeter	Integers and place value Decimals Indices, powers and roots Factors multiples and primes Fractions Fractions, decimals and %'s Percentages	**Foundation** Tables Statistics Averages Charts and graphs Pie charts Scatter graphs Parallel lines Polygons Quadratic equations Pythagoras Perimeter and area 3D forms and volume Probability Compound measures Constructions and loci Similarity and congruence **Higher** Indices and roots Fractions Simplify expressions Equations Linear graphs Surds Solving quadratics Simultaneous equations Proportion Collecting data Averages and range Scatter graphs Polygons and parallel lines Pythagoras and trigonometry Perimeter and area 3D forms Accuracy and bounds Constructions and loci Probability Further trigonometry	**Foundation** Trigonometry Vectors Graphs Simultaneous equations Proof Accuracy and bounds **Higher** Vectors and geometric proof Quadratic inequalities Quadratic sequences Circle theory Transformations of graphs Graphing inequalities Algebraic fractions Changing the subject Proof Functions Iteration Gradient and area under curve Growth and decay
	2					
Spring Term	3	Order of operations Geometry Fractions Algebraic expressions	Percentages Ratio and proportion Fractions 2D geometry	Probability Simplifying expressions Brackets Substitution Equations Ratio and proportion		
	4					
Summer Term	5	Fraction and %'s of amounts Primes and indices Rounding Algebraic expressions 2	3D geometry Statistics Probability	Standard form Straight line graphs Real life graphs Sequences Transformations Inequalities Quadratic expressions Further graphs		
	6					