Key Stage Three Mathematics Curriculum Overview

Our Key Stage Three mathematics curriculum follows the Mathematics Mastery programme. The curriculum is designed with three principles in mind, with the aim to teach students the conceptual knowledge needed to solve mathematical problems successfully and with sufficient fluency to apply this knowledge to new and unfamiliar problems. Firstly, we focus on developing students' conceptual understanding of mathematical knowledge, rather than just computation skills. This means that, rather just practice procedures for solving problems, we want our students to have a clear, conceptual grasp of the underlying ideas or principles that shape mathematics by using multiple representations (concrete, pictorial and abstract) throughout the curriculum. Secondly, we explicitly teach mathematical language and vocabulary to strengthen and support students' mathematical reasoning and communication. Across our curriculum, students are expected to master the correct terminology, use appropriate signs and symbols, and demonstrate verbal reasoning by contributing to class discussion. Thirdly, our curriculum cultivates our students' capability to think mathematically; which is to say, to develop mathematical 'habits of mind' such as being systematic and seeking out patterns. Importantly, we believe that every one of our students has an entitlement to learn the whole curriculum: we support all students to access all of the key concepts, whilst allowing for differentiation through different levels of depth or mastery of learning.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YEAR 7	- Numbers and numerals - Factors and multiples - Axioms and arrays - Arithmetic skills	- Order of operations - Positive and negative numbers - Angles - Classifying 2D shapes	- Classifying 2D shapes - Algebra introduction - Coordinates	- Coordinates - Area of 2D shapes - Prime factorisation - Conceptualising fractions	- Calculating with fractions - Decimals	- Ratio - Percentages - Transformations - Constructions
YEAR 8	- Sequence - Equations - Inequalities	- Linear graphs - Accuracy and estimation - Ratio	- Ratio - Real life graphs and rate of change - Proportion	- Univariate and bivariate data	- Angles in polygons - Bearings - Circles and composite shapes	- Circles and composite shapes - Volume and surface area of prisms
YEAR 9	- Sequence - Equations - Inequalities - Linear graphs	- Linear graphs - Accuracy and estimation - Ratio - Real life graphs and rate of change	- Proportion - Univariate and bivariate data	- Angles in polygons - Bearings - Circles and composite shapes	- Volume and surface area of prisms - Fractions, decimals, percentages review - Probability	- Set, Venn and sample space - Angle review - Construction, congruence and loci

Key Stage Four Mathematics Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YEAR 10 HIGHER *Edexcel*	- Real-life graphs/ Compound measures - Algebra graphs and equations - Angles and constructions - Inequalities and regions	- Vectors - Using a calculator - Volume - Trigonometry	- Powers and standard form - Quadratic equations - Similarity	- Probability - Algebraic methods - Variation	- Variation - Limits of accuracy - Trigonometry	- Data handling - Data distributions
YEAR 10 FOUNDATION *Edexcel*	- Using calculator - Number properties - Percentages - Basic algebra	- Basic algebra - Averages - Perimeter and area	- Ratio, speed and proportion - Equations and inequalities	- Calculating probabilities - Patterns	- Surface area and volumes of 3D shapes - Transformation	- Circles - Constructing bisectors and loci

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YEAR 11 HIGHER *Edexcel*	- Sequences - Growth and decay - Graphs and functions	- Trigonometric graphs - Vectors - Bearings - Data distributions	- Data distributions - Graph transformations - Advanced probability - Number revisit	- Number revisit	*Targeted revision*	
YEAR 11 FOUNDATION *Edexcel*	- Pythagoras theorem - Trigonometry - Quadratic equations	- Similarity - Vectors - Ratio and proportion - Probability	- Data distributions - Averages - Indices and surds	- Algebraic methods	*Targeted revision*	

Key Stage Five Mathematics Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YEAR 12 *Edexcel*	- Algebraic expressions - Quadratics - Equations and inequalities - Data collection - Modelling in mechanics	- Graphs and transformations - Straight line graphs - Measures of location and spread - Constant acceleration	- Circles - Algebraic methods - The binomial expansion - Representation of data - Forces and motion	- Trigonometric ratios - Trigonometric identities and equations - Correlation and probability - Forces and motion	- Vectors - Differentiation - Integration - Statistical distribution - Variable acceleration	- Vectors - Hypothesis testing - Variable acceleration
YEAR 13 *Edexcel*	- Algebraic methods - Functions and graphs - Sequences and series - Regression, correlation and hypothesis testing - Moments - Forces and friction	- The binomial expansion - Radians - Trigonometric functions - Conditional probability - Projectiles	- Trigonometry and modelling - Parametric equations - Numerical methods - The normal distribution - Application of forces	- Differentiation - Integration - Vectors - The normal distribution - Further kinematics	*Targeted revision*	