Mathematics

Mathematics Curriculum Intent

Our curriculum aims to ensure that students become **fluent** in their mathematical skills through varied and frequent practice on content that is increasingly complex and contextualised. The breadth and depth of the curriculum fosters conceptual understanding by striving to develop a well-connected knowledge base of facts, methods, and strategies for routine and non-routine problem-solving. The curriculum builds up skills in problem solving, thereby encouraging **independence**, **resilience**, and **perseverance** through extended interactions with **rich tasks**. In doing so, the curriculum seeks to develop mathematical sophistication by building on understanding gained through the Key Stages. Ultimately, the curriculum seeks to motivate **enjoyment** of the discipline by growing **self-confidence** in students' ability over time. The constant introduction, extension, and revisiting of content throughout the Key Stages through our spiral curriculum, ensures students develop both know-how and know-why over time, whilst enabling them to apply their knowledge throughout the different stages in their education and into progression to their careers.

KS3 Mathematics Curriculum Overview

Year 7
Year 7 content builds on the Primary National Curriculum, seeking further depth of understanding. The programme of study suggests 'pupils should make rich connections across mathematical ideas'. This is supported through 10 units per year group focusing on 10 key mathematical strands and behaviours. Each strand contains at least two mathematical topics. These topics can then be interrelated to encourage pupils to make connections between mathematical ideas. For example, in spring - Reasoning with Fractions brings together the concepts of fractions and probability so that explicit connections are explored. The units of work are ordered to enable application of earlier skills within later units and connectivity. For example, Expressions and Equations builds on previous numerical calculation work in Number Skills, thus helping pupils to see algebraic concepts as a generalisation of what happens with numbers.

Autumn Term	Spring Term	Summer term
Number skills	Expressions, functions and formulae	Analysing and displaying data
Decimals and measures	Sequences and graphs	Transformations
Fractions and percentages	Lines and angles	Consolidation
Ratio and proportion	Probability	Further Extension

Year 8
Year 8 content is distinct from and more challenging than Year 7 content. The programme of study suggests 'pupils should make rich connections across mathematical ideas'. This is supported through 10 units per year group focusing on 10 key mathematical strands and behaviours. Each strand contains at least two mathematical topics. These topics can then be interrelated to encourage pupils to make connections between mathematical ideas. For example, Calculating with Fractions brings together the concepts of fractions and probability so that explicit connections are explored. The units of work are ordered to enable application of earlier skills within later units and connectivity. Straight-line graphs builds on previous graphical work in Real-life graphs, thus helping pupils to see graphical concepts as part of their lived reality.

Autumn Term	Spring Term	Summer term
Number	Expressions and equations	Statistics, graphs and charts
Decimals and ratio	Straight-line graphs	Real-life graphs
Calculating with fractions	Area and volume	Consolidation
Percentages, decimals and fractions	Lines and angles	Further Extension

Year 9

In Year 9, the curriculum pushes pupils to work beyond age-related expectations with mathematical rigour and flexibility whilst providing support for pupils to consolidate challenging Year 7 and 8 concepts at depth in the process of encountering new, linked content. Units are sequenced to ensure that necessary conceptual building blocks are taught prior to larger concepts and to allow maximum opportunity to make connections between topics.

Autumn Term	Spring Term	Summer term
Indices and standard form	Graphs	Dealing with data
Multiplicative reasoning	Circles, Pythagoras and prisms	Constructions
Expressions and formulae	Comparing shapes	Consolidation
Sequences, inequalities, equations and proportion	Probability	Further Extension