

Curriculum progression overview – Maths department

Vision:

The maths curriculum aims to deepen students' understanding of mathematics and build confidence in a way that allows them to: be fluent in their approaches; be able to reason; be able to apply their knowledge to different contexts to solve problems. Students will know and understand the importance of mathematical language to develop mathematical vocabulary within justification, argument and proof and the curriculum allows students to be creative, inquisitive, enquiring and confident, having an appreciation of the maths that they study. Each of the curriculum themes build on skills taught in previous years and prior learning from various contexts is fed into each new learning point to develop this deep understanding. A key element of the maths curriculum is to stretch students through depth of understanding rather than acceleration through the content. Stretch and challenge is embedded through reasoning and problem solving. Students have the opportunity to access 'rich' tasks to develop this depth of understanding. Content for the most able is identified throughout the 5-year progression model, while all students are encouraged to apply cross-topic knowledge to exam style problems.

Why study maths?

Mathematics is integral to all aspects of life. Mathematical experiences help develop skills such as communication, generalising, evaluating and enquiry. Maths is taught using both shared and independent activities, equipping children with the knowledge, skills and understanding to use and apply in exploring and investigating real life situations. Students are encouraged to think critically and explain their reasoning through speaking and listening, mental mathematics and informal / formal written methods.

What powerful knowledge will you gain in maths?

We aim to develop an enthusiastic attitude towards maths that will stay with them to see the importance of the economy in their own lives. For example, in the future curriculum, students will know and understand finances and all the different aspects of that; including exploring options for new mobile phone contracts, budgeting for moving out of home, planning a holiday abroad with friends, population growth or thinking about what would happen without the tax to pay for local parks or buses.

How does studying maths support your studies in other subjects?

- Science: Handling data; numbers in context, particularly large numbers as well as fractions and decimals; indices; ratios and proportions; relationships between metric units; formulae and graphs; manipulation of algebraic expressions and solutions of equations.
- PE: Time, distance and speed; pattern, movement and symmetry; map references, compass bearings and estimates of distances travelled.
- Geography and History: Graphs and the handling data cycle.
- DT: Measurement, including estimation; constructions and transformations.
- Art: Ratio and proportion; similarity and scale; patterns, shape and tessellations (e.g. Escher).
- Music: Repeating patterns in musical forms such as ABA, AABA, ABAB; equivalent fractions for the relative values of notes.

How are you assessed in maths?

- Low stakes end of unit assessments for retrieval practice and to guide next steps in learning
- Frequently throughout the lesson (assessment for learning) such as via mini whiteboards
- At calendared assessment points throughout the year (% recall vs. % new content)

How can maths support your future progression?

Many courses beyond GCSE, including subjects other than maths, require applicants to take an additional admission tests with some mathematical content. Numeracy tests are also used to filter applicants for jobs. Studying maths develops numeracy, graphical and problem-solving skills. These skills are really useful preparation for the maths used in many university degree courses, higher apprenticeships, and the workplace. It can also increase confidence and fluency in the maths used in everyday life.

What enrichment opportunities are there in maths?

- Further Maths Club
- Logic Society
- University Workshops
- Regional Competitions
- Maths Inspiration Events
- Homework Support

5 year model:

WRM – Year 7 Scheme of Learning



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Algebraic Thinking						Place Value and Proportion					
	Sequences		Understand and use algebraic notation		Equality and equivalence		Place value and ordering integers and decimals			Fraction, decimal and percentage equivalence		
Spring	Applications of Number						Directed Number			Fractional Thinking		
	Solving problems with addition & subtraction		Solving problems with multiplication and division		Fractions & percentages of amounts		Operations and equations with directed number			Addition and subtraction of fractions		
Summer	Lines and Angles						Reasoning with Number					
	Constructing, measuring and using geometric notation		Developing geometric reasoning				Developing number sense		Sets and probability		Prime numbers and proof	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Proportional Reasoning						Representations					
	Ratio and scale		Multiplicative change		Multiplying and dividing fractions		Working in the Cartesian plane			Collecting and representing data		Tables
Spring	Algebraic techniques						Developing Number					
	Brackets, equations and inequalities				Sequences	Indices	Fractions and percentages			Standard index form		Number sense
Summer	Developing Geometry						Reasoning with Data					
	Angles in parallel lines and polygons		Area of trapezia and circles		Line symmetry and reflection		The data handling cycle				Measures of location	

Year 9	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15
Autumn	Review of content taught in Year 7 & Year 8			Algebra (Graphs)				Algebra (Proportion)			Algebra (Sequences)	Algebra (Inequalities)	Time for assessments, revise/review/reteach etc.		
Spring	Geometry (Transformations)			Geometry (Angles & Constructions)		Probability and Statistics					Number (Standard Form and Surds)	Time for assessments, revise/review/reteach etc.			
Summer	Number (Standard Form and Surds continued)			Geometry (Pythagoras and Trigonometry)				Time for assessments, revise/review/reteach etc.							

(Y9 Legacy – new scheme of learning beginning September 2021)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Similarity						Developing Algebra					
	Congruence, similarity and enlargement			Trigonometry			Equations and inequalities		Representing solutions		Simultaneous equations	
Spring	Geometry						Proportions and Proportional Change					
	Angles & bearings		Working with circles		Vectors		Ratios & fractions		Percentages and Interest		Probability	
Summer	Delving into data						Using number					
	Collecting, representing and interpreting data						Non-calculator methods		Types of number and sequences		Indices and Roots	

Year 11	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week
Autumn	Gap filling		Extension of Number		Gap filling		Extension of Algebra		Gap filling		Extension of Probability and Statistics		Gap filling	Time for assessments, revise/review/reteach etc.	
Spring	Gap filling	Extension of Geometry		Gap filling and Extension of Ratio		Time for assessments, revise/review/reteach etc.	Staple Perfection								
Summer	Revision														

(Y11 Legacy – new scheme of learning beginning September 2021)