BRANNEL SCHOOL

PROGRAMME OF STUDY FOR MATHS

Purpose of Study from the National Curriculum

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims from the National Curriculum

The national curriculum for Mathematics aims to ensure that all students:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that students have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems

- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Studying Mathematics at Brannel School

Although being numerically competent is hugely important, Mathematics is about more than that. It is also about problem solving, and being able to do so efficiently. It's about breaking broader problems into smaller, more manageable parts, following a line of enquiry and drawing conclusions from your results. It's about testing the validity of those results, either through further computation or through peer review. It's about discussing what the most efficient solution to a problem may look like, about argument and conjecture, reflection and discussion. In short. It's about creative and analytical thinking to solve problems.

At Brannel School, we follow an "Ask, don't tell" approach in the classroom. Students are encouraged to follow what's outlined above, becoming effective, creative, problem solving thinkers, traits that we believe society at large and any employer would benefit from.

Curriculum Provision for Mathematics at Brannel School

Students at Brannel School study Maths during Key Stage 3 and 4. They receive the following number of 75 minutes sessions per fortnight during each cycle of the two week timetable.

Year	No of 75 minute lessons per fortnight
7	7
8	7
9	7
10	7
11	7

Termly Programmes

These termly programmes indicate the sequence of topics which students study and allow parents/carers, teachers and students to understand the structure of the learning over the course of the length of study. These termly programmes are then planned in more detailed for teachers to use as schemes of work when planning their teaching.

Please note that the Autumn Term begins when the new academic year timetable starts in June.

Year 7	Year 8	Year 9
Working with whole numbers	About calculation	Graphs
Measuring	Sequences	Doing a survey
Problem solving	Properties of shapes	Measuring shapes
Coordinates and translations	Problem solving	Decimals
		Problem solving
Moving past the point	Using letters	Brackets in algebra
Use Census at school data	Statistical investigation	Measures with shapes
Folding and turning shapes	Fractions	Percentages
	Forming shapes	
Negative numbers	Algebra	More on equations
A survey about us	Calculating	Angles
Generalising using letters	Measures	Powers
		A statistical survey
Parts of a whole	Manipulating algebra	Sequences and graphs
Angle facts	Probability	3 Dimensions
Exploring sequences	Proportion	Parts of a whole
	Transformations	
Percentages	Indices	Functions and equations
Introducing probability	Sequences	Accuracy
Angles	Two dimensions and beyond	Construction
Exact or just accurate?	Equations	Ratio and proportion
Real life graphs	A statistical survey	Harder algebra
Area and perimeter	Percentages	Using transformations
	Three dimensions	Probability

Year 10	Year 11
Integers, powers and roots	Geometrical reasoning: lines, angles and shapes
Sequences, functions and graphs	Construction and loci
Geometrical reasoning: lines, angles and shapes	Probability
Construction and loci	Ratio and proportion
Probability	Equations, formulae, identities and expressions
Ratio and proportion	Sequences, functions and graphs

Equations, formulae, identities and expressions	Place value, calculations and checking
Measures and mensuration; area	Transformations and coordinates
Learning Review 1	Learning review 1
Sequences, functions and graphs	Processing and representing data
Place value, calculations and checking	Equations, formulae, identities and expressions
Transformations and coordinates	Fractions, decimals and percentages
Processing and representing data	Measures and mensuration; volume
Equations, formulae, identities and expressions	Equations, formulae, identities and expressions
	Measures and mensuration
Learning Review 2	Learning review 2
Fractions, decimals and percentages	Exam Preparation
Measures and mensuration; volume	
Equations, formulae, identities and expressions	
Geometrical reasoning: trigonometry	
Measures and mensuration	
Statistical enquiry	