Mathematics Department

Key Stage 3

Introduction

The mathematics course followed by students in Forms 1 – 3 is aimed at preparing them for the Cambridge IGCSE Mathematics course. Throughout Forms 1 – 3 school the students follow a modular scheme of work. They are tested at the end of each unit to monitor their proficiency in that particular area of mathematics and will also sit mid-year and end-of-year exams. Although the course does not formally follow the UK National Curriculum the material is covered in a similar fashion in the sense that every area of mathematics is taught alongside each other rather than, for instance, covering algebra in one academic year then geometry the next.

The department does not use one particular resource but aims to draw the best from a variety of resources. The department is endeavouring to move away from a paper-based approach and is encouraging a greater use of digital resources. To this end, the students will receive a homework book (Pearson Publishing – Level Up Mathematics) which contains a CD version of the pupil book. In addition, each scheme of work has a variety of hyperlinked resources that can be accessed from home enabling parents to both support and challenge their children in-line with what they are learning at school.

Beyond Forms 1 - 3, the vast majority of students will go on to take the Extended curriculum where the grades available will be A* to E with the remaining few students following the Core curriculum where the grades available are C to G. Some students will follow an accelerated programme in Forms 1 - 3 so that they can take the IGCSE a year early and study the Cambridge IGCSE Additional Mathematics course in Form 5. Although the course does not formally follow the UK National Curriculum, the material is covered in a similar fashion in the sense that every area of mathematics is taught alongside each other rather than, for instance, covering algebra in one academic year then geometry the next.

Departmental Structure

In Form 1, there is one advanced group and the rest of the students are taught in mixed ability groups. Based on the students' performance in departmental tests, they are set according to ability in Forms 2 and 3. They will initially be placed into one of the following groups although there is plenty of flexibility for them to change groups during Forms 2 and 3.

Advanced	One group which follow an accelerated programme which allows those students to sit the IGCSE in Form 4 and follow the IGCSE Additional Mathematics course in Form 5
Extended	Between 4 and 6 groups which follow a common curriculum. Depending on the level of the group the number of students will vary so that those students who struggle with mathematics are in smaller groups where they can receive more individual support.
Core	A very small group of students who generally will be aiming to follow the IGCSE Core Mathematics curriculum.

Course Structure

Form 1

In Form 1 students will not use a calculator as much of the course concentrates on reinforcing and building on the key numeracy techniques.

Term	Topic	Detail	Time
1	Number 1	Place Value Arithmetic	7 weeks
	Number 2	Arithmetic Fractions, Decimals, Percentages	4 weeks
	Algebra 1	Introduction to Algebra Number Patterns	3/4 weeks
2	Geometry 1	Angles Shapes	4 weeks
	Statistics	Data Collection and Analysis Probability	4 weeks
	Algebra 2	Formulae & Equations Graphs	4 weeks
3	Geometry 2	Units of Measurement Perimeter, Area & Volume	4 weeks

The timings given above are approximate.

Form 2 – Advanced, Extended & Core

Although the same key concepts are covered by the advanced, extended and core groups, the actual material varies considerably between the three levels.

Term	Topic	Detail	Time
1	Algebra 1	Algebraic Manipulation Formulae & Equations	5 weeks
	Number 1	Place Value Arithmetic	3 weeks
	Geometry 1	Angles Perimeter, Area & Volume	4 weeks
2	Algebra 2	Graphs & Number Patterns	4 weeks
	Statistics	Data Collection & Analysis Probability	5 weeks
	Number 2	Fractions, Ratio and Percentages	5 weeks
3	Geometry 2	Pythagoras' Theorem Trigonometry	4 weeks

Form 3 – Advanced

In Form 3, the advanced group start the Cambridge IGCSE Mathematics curriculum.

Form 3 – Extended and Core

Term	Topic		Time
1	NUMBER 1 :	Accuracy Percentages	4 weeks
	ALGEBRA 1 :	Formulae and Equations	6 weeks
	HANDLING DATA :	Probability Data Handling	3 weeks
1/2	GEOMETRY 1 :	Trigonometry and Pythagoras' Theorem	5 weeks
2	ALGEBRA 2 :	Graphs	4 weeks
	NUMBER 2 :	Ratio and Proportion Matrices	3 weeks

3	GEOMETRY 2 : Transformations	4 weeks