



A Level Mathematics

KS5 Leader: Mr A Houghton • Exam Board: Edexcel

Course Entry Requirements:

GCSE Grade 6 in Mathematics. Need to be highly efficient at GCSE algebra grade 7/8 skills. We will conduct an indicative test in the first lesson to offer advice and guidance to students as to their suitability for this course.

Course Outline:

Mathematics at A-Level further deepens knowledge and skills taught at GCSE, and will enable you to think logically and creatively about a problem. There are often many approaches to the same problem. You will learn an abstract side of mathematics as a tool kit for mathematical modelling which has links to a very wide variety of (often surprising) subjects.

Three main areas of Mathematics are studied at A level Mathematics:

Core (Pure) Mathematics: When studying Pure Mathematics you will be extending your knowledge of such topics as algebra and trigonometry and geometry as well as learning brand new topics including calculus (the mathematics of change). If you enjoy the challenge of problem solving using such techniques and are highly motivated to do significant work outside of lessons then you should find the prospect of this course very appealing. Many of the ideas serve as an important foundation, and essential toolkit, for other areas of Mathematics such as Statistics and Mechanics.

Statistics: When you study Statistics you will learn how to analyse and summarise numerical data in order to arrive at conclusions about it. You will extend the range of probability problems that you started for GCSE by using the new mathematical techniques studied on the pure maths course.

Mechanics: When you study mechanics you will learn how to describe mathematically the motion of objects and how they respond to forces acting upon them, from cars in the street to satellites revolving around a planet. You will learn the technique of mathematical modelling; that is, of turning a complicated physical problem into a simpler one that can be analysed and solved using mathematical methods.

An overarching theme to all of the strands is the ability to select and apply appropriate mathematical techniques to unfamiliar problems.

Assessment:

3 Exam papers at the end of year 13 which are all equally weighted.

2 Core papers of 120 minutes each

1 Applied paper of statistics and mechanics lasting 120 minutes

Learning strategies:

- Note taking
- Collaborative discussion
- Problem solving
- Mnemonics
- Linking of different aspects of mathematics
- Independent practice outside of lesson time