

## A LEVEL IN MATHS

**A Level Mathematics is the key to a world of opportunity. If you wish to study engineering, physics, economics, or natural sciences at university, it will be essential. Mathematics will also be useful for biology, psychology, and computer-based courses.**

Mathematics is a challenging subject; it's important that you're confident with both algebra and graphs, and prepared to work hard from the start.

A Level Mathematics offers a wide range of progression routes into Higher Education in all areas of science, business, and engineering. On top of that, recent research shows that completing A Level Mathematics can increase your earning potential.

### Key Facts

**Course Duration:** 2 Years

### Course Contents

**Pure 1** extends concepts learnt at GCSE such as working with algebraic expressions, solving equations and inequalities, and straight line coordinate geometry. These concepts are built on in topics such as circle coordinate geometry, binomial expansion, integration and differentiation.

Students will also undertake **Applied 1**, covering content in both statistics and mechanics.

In statistics, students will be working with large data sets and asked to understand, represent and analyse the data. Topics such as linear regression, probability and hypothesis testing will be covered, as well as familiar GCSE topics such as interpreting box plots and histograms.

In mechanics, students will be introduced to both constant and variable acceleration, alongside an introduction to forces and Newton's laws.

This provides a foundation for students continuing onto the second year, building on the concepts learnt in Year 12 to further their understanding.

**Pure 2** includes the introduction of new differentiation and integration techniques whilst also developing students algebraic work. The statistical content includes the normal distribution, conditional probability and more hypothesis testing.

The mechanics content will extend the idea of forces and explore their application, along with studying projectiles, moments and friction.

## **Features and Benefits**

During your lessons you will develop a variety of skills, including the ability to solve problems and communicate your ideas to others. You will work in groups as well as on your own and you will use technology to assist you in your learning. In addition, you will develop the ability to work independently and organise your time.

## **Entry Requirements:**

### **Minimum Entry Requirements:**

All Loughborough College Sixth Form courses have minimum entry requirements of at least five GCSEs at grade C/4 or above, including English Language and Maths.

### **Subject Specific Entry Requirements:**

GCSE Maths at grade 7.

## **Assessment Methods:**

**A-Level:** Three x 2 hour exams - Pure 1, Pure 2 and an applied paper.

## **Progression Opportunities**

Progression can lead to Higher Education or into employment. A Level Mathematics offers a wide range of progression routes into Higher Education in all areas of science, business, and engineering. Recent research shows that completing A Level Mathematics can increase your earning potential.