

# MATHS

# Exam Board: Edexcel



## Aims of the Course

The study of mathematics will enable students to:

- Extend their range of mathematical skills, and techniques and use them in more difficult unstructured problems.
- Recognise how a situation may be represented mathematically and understand the relationship between 'real world' problems and standard and other mathematical models and how these can be refined and improved.
- Use mathematics as an effective means of communication.
- Develop an awareness of the relevance of mathematics to other fields of study, to the world of work and to society in general.
- Take increasing responsibility for their own learning and the evaluation of their own mathematical development.

### Types of Learning Experience:

Students will study three units in Year 12 to achieve AS level, and three further units in Year 13 to complete A2 (details inside). The course content is delivered through lectures, classroom discussion, practical activities and use of IT.

### Link Subjects:

Mathematics may be taken with any other subjects and it is particularly valuable to Economics, Business Studies, Physics and Chemistry.

### Progressing to Higher Education:

The problem solving skills and the ability to tackle tasks logically gained from maths, make mathematics relevant to many subjects at Higher Education and University. Mathematics is a highly recognised Advanced Level subject for entry to University and Higher Education and it is a useful stepping stone to Engineering, Sciences, Computing and Business related subjects..

### Careers:

Mathematics is especially relevant to those wishing to pursue careers in Finance, Business, Research, Engineering, Education, Accountancy and IT..

### Entry requirements:

**A minimum of 5 grades 9-4 at GCSE including English and Maths. GCSE Maths grade 7 is essential**

### Year 1 Students will cover the following topics:

#### Pure Mathematics

- Algebra
- Polynomials
- Coordinate geometry and graphs
- Differentiation
- Trigonometry
- Sequences and series
- The Binomial Expansion
- Integration
- Logs and Exponentials

#### Assessment

All assessments are completed at the end of year 2

#### Mechanics

- Force as a vector
- Equilibrium of a particle
- Kinematics of motion in a straight line
- Newton's laws of motion

#### Statistics

- Representation of Data and Sampling
- Probability
- Distributions
- Hypothesis Testing

#### Assessment

All material will be assessed at the end of year 2





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**Year 2 Students will take the following units:**

**Statistics**

- Correlation and regression
- Probability 2
- The Normal Distribution

**Mechanics**

- Kinematics 2
- Dynamics
- Moments

**Assessment**

2 hours covering ALL Statistics and Mechanics material, written paper (all questions compulsory).  
Graphics calculators are permitted and are strongly

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**Pure Mathematics 2**

- Algebra and functions
- Trigonometry 2
- Parametric Equations
- Binomial Expansion 2
- Sequences and Series
- Differentiation 2
- Integration 2
- Vectors 2
- Numerical Methods

**Assessment**

There are two 2 hour written exams, covering all Pure Mathematics Materials from year 1 and 2 (must attempt all questions)  
Calculators allowed. (Graphics calculator recommended)

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