A LEVEL MATHEMATICS

The Sutton Academy

What do I need to study this course?

The entry requirement for this course is a grade 6 at GCSE maths.

Is this course for me?

A level Mathematics is an interesting and challenging course, which extends the methods and ideas you learned at GCSE. It prepares you well for university study and future employment. Maths helps support the study of subjects like physics, chemistry, engineering, IT, economics, business and biology.

Problem solving and modelling are key aspects of the course. Both the pure and applied mathematics that you will learn feeds into real life applications.

A level mathematics is split in to 2 sections:

- Pure Mathematics broadens your mathematical skills and promotes deeper mathematical thinking. You will be introduced to interesting new areas of pure mathematics in a wider range of contexts.
- Statistics and Mechanics - Many subjects make use of statistical information and techniques. An understanding of probability and risk is important in careers like insurance, medicine, engineering and the sciences. Modelling with mechanics and analysing the physical world around us, including the study of forces and motion. Mechanics is particular useful to students studying physics and engineering.

Where will this course take me?

Mathematics at such a high level opens many doors. A lot of students go on to study a wide range of courses in Higher Education such as mathematics, chemistry, engineering, biomedical science and accountancy to name a few. Skills learnt during this A level can be easily applied in the work place. It shows employers that you are logical and can solve problems.

What will I learn?

Year 1
- Algebraic expressions
- Quadratics
- Equations and inequalities
- Graphs and transformations
- Straight line graphs
- Circles
- The binomial expansion
- Trigonometric identities
- Trigonometric equations
- Vectors
- Differentiation

Year 2
- Algebraic methods
- Functions and graphs
- Sequences and series
- Binomial expansion
- Radians
- Trigonometric functions
- Trigonometry and modelling
- Parametric equations
- Differentiation
- Numerical methods
- Integration

- Data collection
- Measures of location and spread
- Representations of data
- Correlation
- Probability
- Statistical distributions
- Hypothesis testing
- Modelling in mechanics
- Constant acceleration
- Forces and motion
- Variable acceleration

- Repression, correlation and hypothesis testing
- Conditional probability
- The normal distribution
- Moments
- Forces and friction
- Projectiles
- Applications of forces
- Further kinematics

How will I be assessed?

All assessment for this course is through written examination.

A total of three papers each are two hours long. This involves two pure papers and one statistics & Mechanics paper.

FURTHER INFORMATION

See Miss Parker
Mr Courtney
Miss Henry