Mathematics A Level (Course Code: 8371)

"The only way to learn maths is to do Maths."

Curriculum Vision

At Heathcote we take pride in the Mathematic faculty and the students who take this challenging course for their one of their A Levels. Mathematics builds on the work you have covered at GCSE and will extend you significantly in terms of higher ordered thinking. It is a highly sought after course which is very popular here at Heathcote School. Mathematics is a vital subject within its own right and supports many other A level courses. It is a prerequisite for a number of University Degrees. Mathematics is a facilitating subject and requires a high level of commitment, organisation thinking skills and work outside of the lesson. The Mathematics department will provide you with the support and guidance you require to be a success in the subject.

What will you learn?

Content at A Level Mathematics at Heathcote is grouped into two sections:

Core Mathematics- Algebra and Trigonometry

You will build on the algebra and trigonometry that you encountered at GCSE with an extension to a number of the ideas and concepts you already know. You will need to be able to solve problems and apply your knowledge to new situations.

Applied Mathematics- Statistics and Mechanics

Statistics
Through studying 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 studied for GCSE by using the new mathematical techniques studied in the core mathematics units of the course. (Compliments Geography, Economics, Psychology, Sociology and Business Studies)

Mechanics
Through studying mechanics you will learn how to describe the motion of objects and how they respond to forces acting upon them. You will learn the techniques of mathematical modelling which fundamentally turns a complicated physical problem into a simpler one. (Compliments Physics and Engineering courses)

How will you learn?

You will be taught by 3 teachers (2 Pure and 1 Applied); this reflects the break down of the course content and ensures the right amount of time is dedicated to each unit. You are expected to complete an hour of work away from the lessons each evening (5 hours a week) to ensure you are on top of the course content. The modules covered will be:

Proof

Algebra and functions

Coordinate geometry in the (*x, y*) plane

Sequences and series

Trigonometry

Exponentials and logarithms

- Differentiation
- Integration
- Vectors

Statistical sampling

Data presentation and interpretation

Probability

Statistical distributions

Statistical hypothesis testing

Quantities and units in mechanics

Kinematics

Forces and Newton's laws

How will you be assessed?

- All formative assessments take place at the end of the two-year course. Students will take 3 exams to be awarded the A Level (Pure Exam and Applied Exam).

Where will it take you?

Mathematics supports the study of a wide range of other courses at A Level and at Degree level, especially in the sciences, geography, psychology, sociology and medical courses. Many of the ideas you will meet in the course form an essential introduction to such important modern fields of study such as cybernetics, robotics, biomechanics and sports science, as well as the more traditional areas of engineering and physics. Employers value the skills learnt through studying Mathematics A Level.

Higher Education courses or careers that either require A level Mathematics or are strongly related include:

Economics	Medicine	Architecture
Engineering	Accountancy	Teaching
Psychology	Environmental studies	Computing
Information Technology	Law	

Who to talk to?

Mr McLean, Mrs Nawaz- Khan or Mr Wiggins

What will you need to study this course?

Students studying at A Level will require 5 or more GCSEs graded 9-5 or A-C, including grade 4 or higher in English. To study Mathematics A Level, you will need at least a grade 7 in Mathematics GCSE.

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