

MATHEMATICS

Why Choose Mathematics?

Mathematics at Advanced Level is interesting and enjoyable. People like the challenge that mathematics offers, its clarity, and the fact that you know when you are right. Solving a problem is both exciting and satisfying. Mathematics is a key subject in many university courses and for many careers such as engineering, physics, computing, accountancy and management.

Pre-requisites

Students must have completed the G.C.S.E. mathematics course at higher level and at least a grade B is desirable.

Aims

To encourage students to:

- develop their understanding of concepts and to master techniques
- reason logically, to generalise and to prove
- represent a 'real world' problem by a mathematical model
- extend their range of skills and techniques to solve unstructured problems
- 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

Content

Mathematics at A level bears little resemblance to G.C.S.E. Mathematics. The Pure Mathematics course involves work in algebra, trigonometry, geometry and calculus and so has certain similarities to G.C.S.E. but the topics are treated more rigorously. Mechanics is the application of the Pure Mathematics to the study of forces acting on particles, the effect of forces on bodies and their subsequent motion; centre of gravity and the equilibrium of rigid bodies, differential equations and vectors. Statistics is the analysis and interpretation of information in a numerical form and the study of statistical technique including the theory of probability and application to specific probability distributions like the Binomial, Normal and Poisson distributions.

Careers

Specific careers in which mathematicians are employed include:

Accountant, Teacher, Computer Programmer, Financial Consultant, Meteorologist, Pilot, Engineering Consultant, Environmental Researcher, etc.



Pupils at Maths Challenge - Cardiff University