
MATHEMATICS & FURTHER MATHEMATICS

Mathematics is appropriate for all students with a proven mathematical ability. Those students who intend pursuing careers involving science, technology, engineering, commerce and business are advised to study A Level Mathematics. Students showing a particular mathematical flair and those intending to proceed with Mathematics at a higher level should also consider taking **Further Mathematics**. Universities favour applicants to Mathematics degrees if they have A Level Further Mathematics.

Examining Board
AQA

Specification
Mathematics 7357
Further Mathematics 7367

ENTRY REQUIREMENTS TO THE A LEVEL COURSE

Please see the Sixth Form Admissions Policy for the entry requirements to this course.

THE A LEVEL COURSE

Mathematics

Core content

OT1: Mathematical argument, language and proof	OT2: Mathematical problem solving	OT3: Mathematical modelling
Proof	Algebra and functions	Coordinate geometry in the (x,y) plane
Sequences and series	Trigonometry	Exponentials and logarithms
Differentiation	Integration	Numerical methods
Vectors	Statistical sampling	Data presentation and interpretation
Probability	Statistical distributions	Statistical hypothesis testing
Quantities and units in mechanics	Kinematics	Forces and Newton's laws
Moments		

Further Maths

Core content

All students must study this content.

OT1: Mathematical argument, language and proof	OT2: Mathematical problem solving	OT3: Mathematical modelling
Proof	Complex numbers	Matrices
Further Algebra and Functions	Further Calculus	Further Vectors
Polar coordinates	Hyperbolic functions	Differential equations
Trigonometry	Coordinate geometry	

Students must study two of these options.

- Optional application 1 – mechanics
- Optional application 2 – statistics
- Optional application 3 – discrete

(We usually do mechanics and discrete)

STUDENT VIEWPOINT

Mathematics is a stimulating subject which encourages analytical thinking and logical problem solving. Its dependence on basic principles allows students to apply familiar concepts to unfamiliar situations and the sense of achievement on solving a problem creates an amazing feeling of achievement. It's hard but fun!

COMPLEMENTARY SUBJECTS

Mathematics is an essential complement to the Sciences, and also to several Humanities e.g. Geography where statistical analysis is necessary for advanced studies of climate and physical processes; Technology when using trigonometry to accurately calculate angles; Psychology to evaluate standard deviation and mean for analysing data.

CAREER AND UNIVERSITY OPPORTUNITIES

The university courses that require Mathematics A Level are Medical, Scientific, Engineering and Financial disciplines. Employers hold in high regard those with mathematically related qualifications and therefore a mastery of problem-solving techniques and rational thought. Indeed, research has demonstrated that people with a mathematics related degree will go on to earn more than those without.