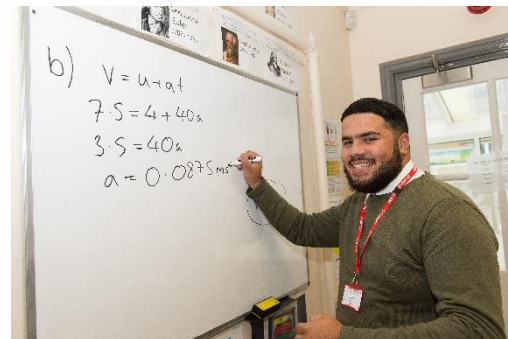




## Why Study Mathematics?

Mathematics is a fundamental area of study, with its own inherent value. The correct solution of a problem has its own immediate satisfaction which makes the study of Maths enjoyable as well as challenging. It is, in many ways, a philosophy and a language, but it is also very useful on a practical level.

Mathematics affects myriad aspects of our daily lives and explains the world around us. Studying Mathematics will improve your problem solving and logical analysis, as well as enhancing your creativity. At Prince Henry's, we are aware of the challenges Mathematics presents, as well as its joys, and we are pro-active in supporting, stretching and encouraging our students to give of their best and achieve their potential.



## Course Content and Assessment

Over the two years of the full A Level course, a programme of approximately two thirds pure mathematics, one sixth statistics and one sixth mechanics will be studied.

Assessment is entirely by examination, comprising of three 2 hour examinations for the full A Level. Other than those which will manipulate algebra, any type of calculator is allowed in all the exams, and at least an enhanced scientific calculator capable of dealing with the Normal and Binomial distributions will be required. Marks will be weighted approximately proportionally to the lengths of the exams.

### Year 12 content:

- Pure mathematics: functions, introductory calculus, coordinate geometry, trigonometry, binomial expansion, exponentials and logarithms, introduction to vector geometry
- Statistics: analysis of data, probability, discrete random variables, Binomial distribution, large data sets
- Mechanics: particle kinematics including calculus, dynamics and statics, vector models, Newton's laws

## Year 13 content:

- More advanced versions of the topics from Year 12
- More pure mathematics: trigonometric identities, numerical methods, advanced coordinate geometry, sequences and series, advanced calculus, proof
- More statistics: conditional probability, Normal distribution, hypothesis testing, contextual interpretation
- More mechanics: projectiles, resolving forces, friction, moments, motion in a plane

## Progression Routes

The study of Mathematics to A Level opens more career paths than many other subjects, including Banking and Finance, Accountancy and Insurance, as well as being strongly recommended for those interested in Medicine, Veterinary Medicine, Engineering, Computer Science, Economics and the Sciences.

A Mathematics degree also garners enormous respect from potential employers.

## Entry Requirements

In order to cope with the demands of the course, students should preferably have gained a grade 7 in Mathematics at GCSE. In exceptional circumstances, students will be considered with a grade 6.