



MATHEMATICS

Year 13 Curriculum

$$\int x^n dx = \frac{1}{n+1} x^{n+1} + c$$

Example:

$$\int x^5 dx = \frac{1}{6} x^6 + c$$

In the second year of A level Maths you continue to study Pure Mathematics for 2/3 of your curriculum time and then both Statistics and Mechanics for 1/6 of the time each. We focus on the Pure Mathematics first as the skills here are necessary for the applied subjects and this also gives you a longer time to consolidate your Pure learning before the external A level exams in the Summer.

You are expected to put in a significant amount of independent study time – the usual amount expected is the same time as devoted to the lessons, so about five hours per week. Some tasks will be exercises to check your understanding as a topic builds up, while others give you formative feedback at the end of the topic. Revision becomes even more important, as the exams at the end rely on application of the skills acquired throughout the 2 year course – often posed in unfamiliar contextual situations.

Key aspects of Pure Maths studied:

1. Advanced Algebraic Methods
2. Functions and Graphs
3. Sequences and Series
4. Advanced Binomial Expansion
5. Radian measure
6. Trigonometric Functions and modelling
7. Parametric Equations
8. Advanced Differentiation
9. Numerical Methods
10. Advanced Integration
11. Vectors in 3 dimensions and applications

In Statistics you will study:

1. Normal Distribution
2. Conditional Probability
3. Regression and Correlation
4. Hypothesis Testing

In Mechanics you will study:

1. Projectiles
2. Advanced forces and friction
3. Applications of Forces
4. Moments
5. Advanced Kinematics
6. Vectors in Mechanics

The Mock examination in December prioritises the Pure Maths content that has been covered throughout Year 12 and the first term of Year 13. Following the Spring half term break, there will be a preliminary mock of a full A level Pure 2 hour paper and then a rigorous system of revision and improvement is implemented to help support your studying to achieve your maximum possible grade in the Summer.

The Mechanics and Statistics content is taught in units in the later part of the year and summative assessments of each unit help you to build a full picture for your A level Mathematics.

The Classwiz calculator is an essential tool for all your mathematics learning – and the examinations expect you to be utilising all of its available functionality to ensure that your mathematical solutions are both accurate and time-efficient.

You need to be honest with yourself about how successful you are being on completely independent work. Over-reliance on working partners or internet solution banks can give you a false sense of your attainment and lead to frustration later.