



# MATHEMATICS

## Examination Board

- Edexcel

## A2 course background

Consists of three examinations, each examination is 2 hours in length and 33.33% of the final grade. A calculator is required for all assessments.

### Paper 1: Pure Mathematics 1 Paper 2: Pure Mathematics 2

#### Content overview

- Proof
- Algebra and functions
- Coordinate geometry in the  $(x, y)$  plane
- Sequences and series
- Trigonometry
- Exponentials and logarithms
- Differentiation
- Integration
- Numerical methods
- Vectors

### Paper 3: Statistics and Mechanics

#### Content overview

##### Section A: Statistics

- Statistical sampling
- Data presentation and interpretation
- Probability
- Statistical distributions
- Statistical hypothesis testing

##### Section B: Mechanics

- Quantities and units in mechanics
- Kinematics
- Forces and Newton's laws
- Moments

## Useful websites / reading materials

- <https://vle.mathswatch.co.uk/vle/> (login needed, this will be provided by the maths teacher).
- [www.integralmaths.org](http://www.integralmaths.org) (login needed, this will be provided by the maths teacher).

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To enjoy the magic of mathematics, along with developing your knowledge of the wider mathematical environment, the below books are useful.

[What the Numbers Say: A Field Guide to Mastering Our Numerical World](#) (Derrick Niederman and David Boyum)

[Alex's Adventures in Numberland](#)  
(Alex Bellos)

[What is Mathematics?: An Elementary Approach to Ideas and Methods \(Oxford paperbacks\)](#) (Richard Courant, Herbert Robbins, Ian Stewart)

[The Tiger That Isn't: Seeing Through a World of Numbers](#) (Andrew Dilnot)

[Euler : The Master of Us All](#) (William Dunham)

[Why Do Buses Come in Threes?: The Hidden Mathematics of Everyday Life](#) (Rob Eastaway and Jeremy Wyndham)

[The Cartoon Guide to Statistics](#) (Larry Gonick & Woolcott Smith)

[Thinking Mathematically](#) (J.Mason, L.Burton, K.Stacey)

[Mathematician's Delight \(Dover Science Books\)](#) (W.W. Sawyer)

[Fermat's Last Theorem: The story of a riddle that confounded the world's greatest minds for 358 years](#) (Simon Singh)

[Professor Stewart's Cabinet of Mathematical Curiosities](#) (Ian Stewart)

### **Recommended study**

- Complete all tasks and exam-style questions from the course book.
- Complete tasks on 'mathswatch' and integral maths and any other tasks as directed by your teacher
- Approximately 3-5 hours per week to include homework tasks and independent study.