Maths @ WBS Year 13 Roadmap

Subject Aim: To build upon skills and content from GCSE Maths, extending into new concepts and highly developed ideas. To begin to understand a new strand of Mathematics in Mechanics and gain familiarity with A Level style exam questions. To develop resilience in our approach to challenging problems.

TIP

INTRO TO STATISTICS
- Sampling Techniques
- Standard Deviation

KINEMATICS 2
- Constant Acceleration in 2D
- Projectile Motion

Autumn Term

CALCULUS 2
- Product, Chain and Quotient Rules
- Integration by Parts & Substitution

TRIGONOMETRY 2
- Addition Formulae
- Double Angle Formulae
- Small Angle Approximations

BINOMIAL SERIES
- Binomial Expansion
- Binomial Theorem

ADVANCED MECHANICS
- Working with Friction
- Forces on Slopes
- Moments
- Variable Acceleration

PROBABILITY DISTRIBUTIONS
- Binomial & Normal Distributions

Spring Term

APPLICATIONS OF CALCULUS
- Partial Fractions
- Parametric Functions
- Convert between Cartesian & Parametric Forms

NUMERICAL METHODS
- Proof by Contradiction
- Staircase & Cobweb Diagrams
- Newton-Raphson Method
- Locating Roots

HYPOTHESIS TESTING
- Testing Hypotheses
- Correlation Coefficients

DIFFERENTIAL EQUATIONS
- Seperating the variables
- Exponential Growth and Decay

Where Next?

If you are wishing to study Mathematics beyond A Level, we offer support in taking the correct University Admissions Tests. Success in these can lead to reduced University offers.

Enrichment

The Senior Maths Challenge is a great opportunity for students to stretch themselves and compete with other mathematicians on a national scale.

Assessment

Each week, you will sit a **Weekly Assessment**. This is an exam question designed tp prepare you for the challenges of the terminal exams. How you do in these should also offer a starting point to target your own revision when revising.

Over the year you will sit a series of **Key Assessments**. These assessments over all content cover up to the assessment date, so will test both the most recent units studies, as well as prevously gained knowledge.

You will have Mock Exams during the year, which will more closely reflect your A Level Exams. They will be longer and test all the content you have learnt up to this point.

All assessments are marked and then fed back in class.

Homework and Revision

Students are expected to complete exercises which are attached to the end of our teaching powerpoints. This should be done before the next lesson whenever possible.

You will have homework set on Dr Frost every week, with a two week deadline to complete this. For most tasks you will be allowed reattempts, so make sure you reattempt and get support with any questions you struggle with.

We offer a weekly after school Drop In Club every Wednesday, strongly recommended for you to practice and revise efficiently.