

A-Level Further Maths @ WBS Year 13 Roadmap

Subject Aim: To succeed with the understanding of the most challenging Mathematical concepts and ideas. To push problem solving techniques beyond the standard methods required in A-Level Maths and be able to apply them to any of the Pure, Mechanics and Discrete strands of the course.

TT Promo	 Y13 CALCULUS	 VECTORS 2
	➤ Product, Quotient & Chain Rules ➤ Integration Using Partial Fractions	➤ Vector Product ➤ Equation of a Plane ➤ Finding Distances
Autumn Term	 SERIES & NUMERICAL METHODS	 COMPLEX NUMBERS 2
	➤ Mid-Ordinate, Simpson's & L'Hôpital's Rule	➤ De Moivre's Theorem ➤ Roots of Unity
Spring Term	 ADVANCED INTEGRATION	 MATRICES 2
	➤ Improper Integrals ➤ Inverse Functions ➤ Reduction Formulae ➤ Polar Graphs & Areas ➤ Arc Lengths	➤ Determinants ➤ Eigenvalues
	 GROUP THEORY	➤ Subgroups ➤ Isomorphisms
	 DIFFERENTIAL EQUATIONS & EULER	 ADVANCED MECHANICS 2
	➤ Complementary Functions & Particular Integrals ➤ Harmonic Motion ➤ Euler Formulae	➤ Energy, Power & Momentum in 2D ➤ Conical Pendulums ➤ Vertical Circular Motion ➤ Centres of Mass ➤ Moments & Couples
	 SIMPLEX ALGORITHM	

Assessment – 3 Key Measures	
- Each week, you will sit a Weekly Assessment with one of your teachers. This is a past exam question and is designed to prepare you for the challenges of the terminal exams. - You will sit Key Assessments throughout the year. These assessments cover the content of the Units most recently covered but will also reference previously gained knowledge. These tests are generally 48 minutes long and out of 40 marks. - 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 assessment is graded and reviewed in class. We then provide detailed walkthrough solutions, either in person or via video on Brightspace. Students are encouraged to reflect on their assessment to improve where needed.	
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. - Within each Unit, 1 or 2 pieces of homework are also set on Dr Frost Maths to help students prepare for all assessments. - All students have access to online textbooks using Kerboodle and are encouraged to use the exercises and assessments to practice more difficult questions.	
Revision resources and practice questions for assessments are published on Brightspace.	
Enrichment Themes	
A Level Maths Workshop runs after school in M8 on a Wednesday and is a vital source of additional support for all students.	
In Year 13, many Further Maths students will apply for University courses in Maths that require the taking of additional Maths Entrance Exams, such as MAT, TMUA and STEP. We provide dedicated revision sessions for these students on Wednesday in the Autumn term to prepare for both these exams and any Oxbridge interviews that may follow.	

Where Next?

As stated above, If you are wishing to study Mathematics beyond A-Level, we offer support programmes for TMUA, MAT and STEP exams. Success in these exams can lead to reduced University offers.