

Year 12 Further Maths A Level

Subject and Year Group	Autumn 1 Year 12	Autumn 2 Year 12	Spring 1 Year 12	Spring 2 Year 12	Summer 1 Year 12	Summer 2 Year 12
Topic/Unit to be studied	- Complex numbers - Algebra and functions - Matrices	- Representing complex numbers - Linear Transformations - Series - Proof - Applied module: Decision Mathematics	- Vectors - Applied module: Decision Mathematics	- Vectors - Applied module: Further Mechanics	- Calculus - Applied module: Further Mechanics	- AS EXAM - Deliberate Practice - Conceptual & Procedural Variation - Intro to A2
Core Knowledge and skills	- Introduction of complex numbers, basic manipulation - Complex conjugate, division and solving polynomial equations - Roots of polynomial equations - Formation of polynomial equations - Matrix addition, subtraction and multiplication - Inverse of 2×2 and 3×3 matrices - Systems of solving simultaneous equations	- Argand diagrams - Modulus and argument - Loci - Using vectors and matrices to describe linear transformations in 2D,3D - Sums of series - Proof by mathematical induction - Algorithms, sorts. - Graph theory; networks, algorithms, route inspection, - Pimm, Kruskal, Dijkstra, Eulerian, Hamiltonian.	- Vector and Cartesian equations of a line and a plane - Scalar product - Linear programming - Critical path analysis	- Problems involving points, lines and planes - Momentum and Impulse - Work, Energy and Power	- Volumes of revolution - Elastic collisions in 1D	- An introduction to A2 Calculus techniques and their application to Further maths problems. - An introduction to Differential Equations; Separation of Variables and applications, inc. Mechanics.
Assessment for and of learning	Baseline test Unit assessments	Unit assessments	Unit assessments Mock exam	Unit assessments	Unit assessments	Unit assessments End of Year exam (AS Exam)