KS5 Curriculum Overview: **A-Level Mathematics**

	Autumn Term	Spring Term	Summer Term
Year 12	**Curriculum:** **Pure:** An introduction to key mathematical concepts such as Logarithms, Polynomials, Coordinate Geometry, Trigonometric Equations and Binomial Expansion. **Mechanics:** Gain an understanding of motion using Kinematics graphs, vectors and SUVAT equations	Curriculum: **Pure:** An introduction to calculus, a vital mathematical topic. Following our work on polynomials, we will explore what happens when we transform graphs **Mechanics:** Forces and Newton's Laws **Statistics:** Deepen your understanding of Probability by exploring the Binomial Distribution. We will also introduce you to a Large Data Set and explore ways of analysing and representing data	Curriculum: **Pure:** We will apply our knowledge of logarithms and calculus, allowing us to explore optimisation problems. We will also start the Year 13 syllabus with Numerical Methods **Mechanics:** We can now combine calculus and Kinematics with variable acceleration **Statistics:** Continuing with the Binomial Distribution, we will now be able to conduct Hypothesis Tests
	Formal Assessment*: Baseline assessment (First week of term) Progress check (First week after half-term)	Formal Assessment*: Y12 Mock Exams	Formal Assessment*: Y12 Mock Exams
Year 13	**Curriculum**: **Pure:** Exploring Trigonometry (Radians, Reciprocal and Inverse functions, and Double Angle Identities), Differentiation of exponential and trigonometric functions, exploring inverse and modulus functions **Mechanics:** Extending Year 12 topics of Kinematics, Vectors and Forces to explore 2D, 3D and inclined planes. Understanding the impact of Friction on motion	Curriculum: **Pure:** Understand and use the structure of mathematical proof, Integrate exponential, reciprocal and trigonometric functions, and express curves parametrically **Mechanics:** Modelling motion under gravity in a vertical plane using vectors; Projectiles **Statistics:** Furthering the work completed in Year 12, we will explore Probability when events are dependent and understand the probabilities of events that follow the Normal Distribution	Curriculum: **Pure:** Constructing and solving simple differential equations in context (e.g. rate of growth of population) Revision and consolidation across the syllabus
	Formal Assessment*: Progress Check (First week after half-term)	Formal Assessment*: Y13 Mock Exams	Formal Assessment*: AQA GCE A-level Mathematics: Paper 1 - Pure Paper 2 - Pure & Mechanics Paper 3 - Pure & Statistics

**At CamSF,,assessment happens at many levels and is perhaps most important when teachers assess what students have learned and remembered within the classroom. Timely feedback is so important in enabling progress and knowledge retention. .*