Year 12 Maths: Our curriculum intent is to:

A-level Maths at Derby Moor is the perfect choice if you enjoy the subject and want to be taught by a team with over 30 years of A-level teaching experience. Our curriculum at Year 12 is designed to cover the three strands of AQA Year 1 A-level Maths (Pure, Statistics and Mechanics) by the first half of the Summer term. This allows us to begin the second year of teaching in the second half and ensures that ample time is available in your second year for vital revision and exam practice. Alongside our programme of study, our aim is also to provide you with a variety of assessments which challenge the core objectives and interleave mathematical knowledge to increase your retention of learning and your ability to transfer it to other contexts. Our assessments are designed to identify your areas of development and at frequent points throughout the year you will be provided with feedback and given the opportunity to securely embed a deeper understanding of the topics covered. Your first assessment will be a baseline where we diagnose the areas of Maths from Key Stage 4 that you need work on to be successful at A-level, with algebra being the focus. If at any point you find anything difficult, your teachers will be on hand during your independent study to drop into and seek support.

Term	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer 1	Summer 2
Subject Specific Skills (KS5 National Curriculum)	**Pure:** • Surds and indices • Quadratic functions • Equations and inequalities • Equation of a straight line • Equation of a circle	**Pure:** • Trigonometry • Solving trigonometric equations • Using trigonometric identities • Factorising and sketching polynomials • Binomial expansion • Differentiation	**Pure:** • Integration • Graphs and transformations • Exponentials and logs • Proof • Vectors	**Statistics:** • Statistical sampling • Data presentation and interpretation • Probability **Mechanics:** • Kinematics in 1 dimension	**Statistics:** • Probability distributions • Binomial distribution • Hypothesis testing using a binomial distribution **Mechanics:** • Newtons' laws	***A-level Year 2 begins*** **Pure:** • Sequences and series • Radian measure • Arcs and sectors
Previous Links (KS4 National Curriculum)	• Surds - rationalising denominators • Indices, including negative and fractional • Solve quadratics using a variety of methods • Plotting quadratics • Solving linear and quadratic inequalities • Graphical inequalities • Equation of a straight line • Equation of a circle	• Trigonometry – right angled triangles, sine rule, cosine rule and area of a triangle • Graphs of trigonometric functions • Expanding double and triple brackets	• Transformations of graphs • Indices (Key Stage 4 and Year 12) • Equation of a straight line • Algebraic proof • Vectors	• Averages and range, including from frequency tables • Representing data using scatter diagrams, histograms, cumulative frequency graphs and box plots • Probability using Venn diagrams and tree diagrams	• Finding binomial coefficients (Year 12)	• Arcs and sectors • Arithmetic and geometric progressions • Nth term rules

Post 18 and beyond: We want to provide students with an opportunity to further their enjoyment of studying maths. Maths at A-level will prepare students for a wide range of degrees, not only including Mathematics, but also Science, Engineering, Computing and Finance. It can lead to a Science based career, work as a Statistician, Accountant, within the Finance sector, in Engineering and Teaching. That is by no means an exhaustive list and the way you are taught to think logically and systematically to solve problems will be beneficial in any degree and future career. Maths is a versatile subject that pairs well with several other numbers-based subjects. It can be studied with Chemistry, Physics, Economics, Accounting and Finance, Business and IT. If you want to keep your options open for further study and careers, Maths also pairs with subjects such as Biology, English, History, Geography and Psychology.