

KAA Curriculum Overview		Maths	Year 13	EOY Exam	Sequencing and Progression	
Rationale Students study all of the Year 1 AS content in Y12. The first few units are transitional units from GCSE, and help students acclimatise to A Level maths. A lot of the content takes ideas learnt at GCSE and extends them further, going into more depth, and these topics also become more abstract. During their study of A-Level, students start approaching mathematics in a more rigorous manner that resembles how maths is studied at university. At A-Level, students will study the various branches of mathematics in more detail and will start appreciating them as stand-alone subjects in their own right.				<i>What content and skills will be assessed in the EOY exam?</i> Students entered for A2 exams will sit three papers in total, 2 pure and 1 applied. These papers will assess all content covered over the last two years.	<i>How does this year build on what they've learnt last year?</i> Year 13 content directly builds on what students cover in Year 12. Most topics, such as integration, are looked at in more depth and students study a wider range of techniques to compute integrals. Topics that are entirely new are limited in number. Some of the foundational skills studied in Year 12, such as algebraic manipulation, become vital for next year and are a significant determining factor for success in Year 13.	<i>How will it benefit them as they move forward next year?</i> Students will have an appreciation for what the discipline of mathematics entails at university. If they go on to study maths at university, they will develop their approaches to mathematical problems and will look at mathematical proofs in a much more rigorous way.
Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Link to MTP Overview	Y13 AUT1 MTP 22/23	Y13 AUT2 MTP 22/23	Y13 SPR1 MTP 22/23	Y13 SPR2 MTP 22/23	Y13 SUM1 MTP 22/23	
Topic studied	Pure: FQ1 Sequences and series FQ2 Functions and graphs FQ3 Trigonometry (radians) Statistics: FQ2 Probability FQ3 Normal distribution	Pure: FQ3 Trigonometry (identities and equations) FQ4 Parametric equations FQ5 Differentiation Mechanics: FQ1 Forces and friction FQ2 Projectiles FQ3 Moments	Pure: FQ6 Numerical methods FQ7 Integration Mechanics: FQ4 Application of forces FQ5 Further kinematics	Pure: FQ7 Integration Revision Applied: Revision	Pure: Revision Mechanics: Revision	A-Level exams
Adjustments following last assessments / evaluation.						
Key knowledge and skills students need to have gained by the end of the unit	Pure: <ul style="list-style-type: none"> Arithmetic sequences Arithmetic series Geometric sequences Geometric series Sum to infinity Sigma notation Recurrence relations Modulus function Mappings Composite functions Inverse functions Sketching modulus functions 	Pure: <ul style="list-style-type: none"> Sec and cosec functions Reciprocal trig functions New identities Inverse trig functions Addition formulae Using addition formulae Double angle formulae Solving trig equations $\text{acos}x + \text{bsinx}$ Proving identities Trig modelling Parametric equations 	Pure: <ul style="list-style-type: none"> Locating roots Iteration Newton-Raphson method Numerical methods modelling Integrating standard functions Reverse chain rule 1 Using trig identities to integrate Reverse chain rule 2 	Pure: <ul style="list-style-type: none"> Review of integration 		

	<ul style="list-style-type: none"> Combining transformations Solving with modulus Working with radians Calculating arc length Area of sectors Solving with radians Small angle approximations <p>Applied:</p> <ul style="list-style-type: none"> Set Notation Conditional Probability Probability Formulae Tree Diagrams Normal Distribution Using the Calculator Inverse Normal Standard Normal Finding mu and sigma Approximating a Binomial Hypothesis Testing 	<ul style="list-style-type: none"> Trig in parametric equations Sketching parametrics Points of intersection Parametric modelling Differentiating sin and cos Differentiating exponentials and Ln Chain rule Product rule Quotient rule Differentiating more trig functions Differentiating parametric equations Implicit differentiation Second derivatives Rates of change <p>Applied:</p> <ul style="list-style-type: none"> Resolving Inclined planes Friction Horizontal projection Horizontal and vertical components Projection at any angle Projectile motion formulae Resultant moments Resultant moments Equilibrium - non uniform Tilting 	<ul style="list-style-type: none"> Integration by substitution Integration by parts Integrating partial fractions Finding areas Trapezium rule Integrating parametrics Differential equations Calculus modelling <p>Applied:</p> <ul style="list-style-type: none"> Static particles Modelling with statics Friction and static particles Static rigid bodies Dynamics and inclined planes Connected particles Vectors in kinematics Vector methods with projectiles Variable acceleration in one dimension Differentiating vectors Integrating vectors 			
How is understanding assessed at the end of the unit?	AP4		AP5	AP6		A-Level exams