

Maths

Key Stage 5 Curriculum Map

	Module One	Module Two	Module Three	Module Four	Module Five	Module Six
Y12	Topics: Pure: Algebraic Expressions, Quadratics, Equations and Inequalities, Graphs and Transformations Statistics: Probability and Statistical distributions Key concepts Pure: The discriminant, Hidden quadratics, modelling with quadratics, simultaneous equations, quadratic inequalities, transformations of graphs Mechanics: Constant acceleration formulae (SUVAT) Force diagrams, Motion in 2 particles,	Topics: Pure: Straight Line Graphs, Circles, Differentiation Statistics: Hypothesis testing, Data collection, Measures of location and spread, Correlation Key concepts Pure: Equation of a straight line, Equation of a circle and perpendicular bisectors, differentiating from first principles, Stationary points, Maxima, Minima and Points of Inflection Mechanics: Connected Particles, Pulleys, Maxima and minima problems	Topics: Pure: Integration, Algebraic Methods, The binomial Expansion Statistics & Mechanics: Representation of Data, Constant Acceleration Key concepts Pure: Integration as the limit of a sum, Dividing polynomials, the factor theorem, Proof, Binomial expansion. Mechanics: Tilting, Uniform Rods, Non-uniform Rods.	Topics: Pure: Trigonometric ratios, identities and equations Mechanics: Forces and Motion, Variable Acceleration Key concepts Pure: Sine and cosine rules, Trigonometric graphs, solving trigonometric equations, Proving trigonometric identities Statistics: What is a random variable? What is a distribution? How do cumulative distributions work?	Topics: Pure: Vectors, Exponentials and Logarithms Mechanics: Forces and Motion, Variable Acceleration Key concepts Pure: Solving geometric problems with vectors, modelling with vectors, solving trigonometric equations, proving trigonometric identities, solving geometric problems with vectors, Modelling with vectors , Maxima and minima problems Statistics: Hypothesis test, The Large Data set, Mean and Variance, Standard	Topics: Pure: Logarithm's review and Partial Fractions Statistics & Mechanics: AS Mechanics Review, AS Statistics review and Moments Key concepts: Pure: Equations with logarithms, Exponentials, Modelling with Exponentials, Natural Logarithms Statistics & Mechanics: Histograms and Box Plots,

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Module One		Module Two		Module Three		Module Four		Module Five		Module Six	
								deviation, Linear regression, Sampling Methods, Linear interpolation			
	Assessment: - 1h Pure assessment - 1h Mechanics assessment	Assessment: - 1h Pure assessment - 1h Mechanics assessment	Assessment: - 1h Pure assessment - 1h Mechanics assessment	Assessment: - 1h Pure assessment - 1h Statistics assessment	Assessment: - 1h Pure assessment - 1h Statistics assessment	Assessment: - 1h Pure assessment - 1h Statistics assessment	Assessment: - 1h Pure assessment - 1h Statistics assessment	Assessment: - 1h Pure assessment - 1h Statistics assessment	Assessment: - 2h Pure assessment - 1h 15 mins Mechanics & Statistics assessment		

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	Module One	Module Two	Module Three	Module Four	Module Five
Y13	Topics: Pure: Algebraic Methods, Functions and Graphs, Sequences and Series Mechanics: Projectiles, Moments Key concepts: Pure: Proof by contradiction, algebraic methods, partial fractions, algebraic division, functions and the modulus function, inverse and composite functions, transforming graphs of functions, Arithmetic's sequences and series, geometric sequences and series, sums to infinity, sigma notation, recurrence relations, modelling with series	Topics: Pure: Binomial expansion, radian measure, trigonometric functions, modelling with trigonometry Mechanics: Forces and friction, application of forces Key concepts: Pure: Expanding brackets to the power n, using partial fractions, radian measure for arc length and area of sectors, small angle approximations, solving trigonometric equations using radians, reciprocal trigonometric functions and their graphs, trigonometric identities, inverse trigonometric functions, using the addition and	Topics: Pure: Parametric Equations, Differentiation Mechanics: Further Kinematics Statistics: Conditional Probability Key concepts: Pure: Parametric equations, using trigonometric identities, curve sketching, points of intersection and modelling with parametric equations, differentiation the trigonometric functions, using the chain rule, product rule and quotient rule, suing implicit differentiation, and second derivatives, and rates of change Mechanics: Vectors in	Topics: Pure: Integration, Numerical Methods, Vectors Statistics: The normal distribution, regression, correlation and hypothesis testing Key concepts: Pure: Integrating standard functions, using reverse chain rule, using trigonometric identities and substitution, using integration by parts, partial fractions and the trapezium rule, solving and modelling with differential equations, locating roots, Iteration, applications to modelling, Vectors in 3D, solving geometric problems applications to mechanics	Topics: Pure, Statistics and Mechanics A2 Revision

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	Mechanics: Horizontal projection, vertical and horizontal components, projection at any angle, projection motion formulae	double angle formulae, solving and modelling with trigonometric equations and functions, proving trigonometric identities Mechanics: Resolving forces, inclined planes, friction, static particles, modelling with statics, friction, Static rigid bodies, Dynamics and inclined planes, Connected particles	kinematics and vector methods with projectiles, variable acceleration with vectors and integrating vectors Statistics: Set notation, conditional probability, probability formulae and using tree and Venn diagrams	Statistics: The normal distribution and finding probabilities using the normal distribution, the inverse and standard normal distribution, finding the mean and standard deviation, approximating the binomial distribution and hypothesis testing with the normal distribution, exponential models, measuring correlation and hypothesis testing for zero correlation.	
	Assessment: - 1h Pure assessment - 1h Mechanics assessment	Assessment: - 1h Pure assessment - 1h Mechanics assessment	Assessment: - 2h Pure assessment - 1h Mechanics assessment - 1h Statistics assessment	Assessment: - 2h Pure assessment - 2h Mechanics and Statistics assessment	Assessment: - 2 x 2h Pure Assessment - 2h Statistics and Mechanics