The Charter School East Dulwich

Year 12 Mathematics Curriculum Map

Half Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Big Pure Themes	**Algebra & Functions** **Coordinate Geometry**	**Coordinate Geometry** **Differentiation**	**Differentiation** **Algebraic Methods**	**The Binomial Expansion** **Trigonometric Ratios, Identities Equations**	**Vectors** **Exponentials & Logarithms** **Revision**	**Revision** **Y13 Pure**
Big Applied Themes	***Probability*** ***Distributions*** ***Hypothesis Testing***	***Measures of Location & Spread*** ***Representing Data***	***Modelling in Mechanics*** ***Constant Acceleration***	***Forces and Motion*** ***Variable Acceleration***		
Knowledge and skills covered	**Pure 1 Chapters 1 - 4** • Index rules, surds, expanding and factorising brackets • Quadratics - solving, graphs, discriminant, modelling • Equations - linear, non-linear, simultaneous • Inequalities - linear, quadratic, graphing • Graphs - cubic, quartic, reciprocal, points of intersection • Transformations - stretches, translations, combinations **Applied 1 Chapters 5 - 7** • *Probability - calculating, Venn diagrams, mutual exclusivity and independence, tree diagrams* • *Distributions - probability, binomial, cumulative* • *Hypothesis tests* - one tailed, two tailed, critical regions	**Pure 1 Chapters 5, 6, 12** • Straight line graphs - parallel, perpendicular, lengths & areas, modelling • Circles - midpoints, bisectors, intersections with lines, tangents & chord properties, circles & triangles • Differentiation - gradient, finding derivatives, second derivatives, stationary points **Applied 1 Chapters 2 - 3** • *Measures - central tendency, location, spread, variance & standard deviation, coding* • *Representing data - outliers, box plots, cumulative frequency, histograms, comparing data*	**Pure 1 Chapters 12, 13, 7** • Differentiation - sketching gradient functions, modelling • Integration - x^n and indefinite, finding functions, definite integrals, areas under curves, axes and between lines and curves • Algebraic methods - fractions, dividing polynomials, factor theorem, proof **Applied 1 Chapters 8, 9** • *Modelling - constructing, assumptions, quantities, units* • *Constant acceleration - distance-time graphs, velocity-time graphs, SUVAT formulae, vertical motion under gravity*	**Pure 1 Chapters 8 - 10** • Binomial expansion - Pascal's triangle, factorial notation, the expansion, solving problems, estimation • Trigonometric ratios - Sine and Cosine rule, areas & triangles, graphs & transformations • Trigonometric identities & equations - quadrants, exact values, identities, simple & harder equations **Applied 1 Chapters 10, 11** • *Forces - diagrams, vectors, acceleration, motion in 2D, connected particles & pulleys* • *Variable acceleration - functions of time, using derivatives, maxima & minima, using integration, SUVAT*	**Pure 1 Chapters 11, 14** • Vectors - representing, magnitude & direction, position vectors, geometric problems, modelling • Exponentials & logarithms - exponential functions, modelling, logarithms, log laws, solving log equations, natural logarithms and non-linear data **Revision for End of Year Exams**	**Pure 2 Chapters 1 - 4** • Algebraic methods - proof by contradiction, partial fractions, repeated factors, division • Functions and graphs - mappings, composite & inverse functions, modulus functions, combining transformations • Sequences and Series - arithmetic, geometric, sums to infinity, sigma notation, recurrence relations, modelling • Binomial expansion - negative and fractional exponents, using partial fractions

Knowledge organisers and more detailed topic resources can be found on all student Google Classrooms