Maths	M1	M2	M3	M4	M5	M6
Topic Title	A2 Foundation Topics, Modelling & Problem-solving	Proof & Problem-solving	Mathematical Modelling & Problem-solving	Problem-solving & Mathematical modelling	Mathematical Modelling	Revision & External Exams
Brief summary of content studied	Algebraic Proof - proof by contradiction; proof by exhaustion; disproof by counter example; simplify and combine algebraic fractions; partial fractions Mappings; domain & range; modulus function; composite and inverse functions; combined transformations; transformations of modulus functions; solve equations and inequations inv the modulus; mathematical modelling with various functions Coding; correlation coefficient; hypothesis testing for zero correlation	Radian measure; arcs, sectors and segments; small angle approximations; secant, cosecant and cotangent and their inverses; compound and double angle formulae; geometric and algebraic proof of compound angle formula; trigonometric identities; Rcos(x+/-a) and Rsin(x+/-a) (harmonic form); solve trigonometric equations in various contexts

Find moments (in static contexts) | Definition of and coverting between Cartesian and parametric equations; sketch and model parametric curves; solve parametric equations Differentiation of the sin(x) and cos(x) from first principles, e^x, ln(x), a^x; product and quptient rules; implicit differentiation; parametric differentiation; rates of change; second and third derivatives; growth and decay Conditional probability; questioning/justifying assumptions; definitions of P (A U B) and P(A n B) | Integration of trigonometric, parametric, exponential and logarithmic functions; integration as the inverse of differentiation; integrate complex trigonometric functions using the identities; integration by substitution, by parts, using partial fractions; find the area under curves (including parametric curves); solve differential equation; trapezium rule; The Fundamental Theory of Calculus (area as the limit of a sum)

Normal Distribution | Locate roots for complex polynomials using Newton-Raphson method; iteration; knowledge of staricase and cobweb diagrams; find a suitable range for a given root; problemsolving use vectors in 3D; unit vectors; column vectors in i, j, k notation Resolving forces; friction; inclined planes; projectile motion; dynamics of a particle; statics; ladders; constant and variable acceleration using vectors | |
| Link to Knowledge Organiser | https://docs.google.com/presentation/d/1N50_U8Z_WvZKLqNqq5cGENcEqVP4NRsCNLFfXxFVYZ4/edit?usp=sharing | https://docs.google.com/presentation/d/1gr-NZBAUPiJD8MYPyC1ZS-AU1z39wH-IUKkcmbGnID8/edit?usp=sharing | | | | |
| Other resources and readings | | | | | | |