

YEAR 13 CURRICULUM INFORMATION - Mathematics

	Autumn 1	Autumn 2
What will students be learning?	Pure unit 2 functions and graphs Pure unit 3 sequences and series Pure unit 5 Radians Pure unit 6 Trigonometric functions Pure unit 7 Trigonometry and modelling	Pure unit 8 Parametric equations Pure unit 9 Differentiation Pure unit 10 Numerical methods Pure unit 11 Integration Pure unit 12 Vectors
How will students be assessed?	2 pure checkpoint assessments	2 pure checkpoint assessments
Literacy – What keywords will be taught?	Polynomial, numerator, denominator, factor, difference of two squares, quadratic, power, index, coefficient, degree, squared, coefficients, improper, identity, algebraic fraction, partial fraction, rational. Function, mapping, domain, range, modulus, transformation, composite, inverse, one to one, many to one, mappings, $f(x)f(\diamond)$, $fg(x)fg(\diamond)$, $f^{-1}xf^{-1}\diamond$, reflect, translate, stretch. Pythagoras, Pythagorean triple, right-angled triangle, opposite, adjacent, hypotenuse, trigonometry, sine, cosine, tangent, secant, cosecant, cotangent, SOHCAHTOA, exact, symmetry, periodicity, identity, equation, interval, quadrant, degree, radian, circular measure, infinity, asymptote, small angles, approximation, identity, proof.	Parametric, Cartesian, convert, parameter t, identity, eliminate, substitute, circle, hyperbola, parabola, ellipse, domain, modelling. Derivative, tangent, normal, turning point, stationary point, maximum, minimum, inflexion, parametric, implicit, differential equation, rate of change, product, quotient, first derivative, second derivative, increasing function, decreasing function. Roots, continuous, function, positive, negative, converge, diverge, interval, derivative, tangent, chord, iteration, Newton-Raphson, staircase, cobweb, trapezium rule. Integral, inverse, differential, coefficient, index, power, negative, reciprocal, natural logarithm, $\ln x \ln \diamond$, coefficient, exponential, identity, sin, cos, tan, sec, cosec, cot, $\csc\diamond$, parametric. Integral, definite integral, integrand, limit, indefinite integral, constant of integration, trapezium, substitution, by parts, area, differential equation, first order, separating variables, initial conditions, general solution, parametric. Vector, scalar, column, 3D coordinates, vertices, Cartesian, $\mathbf{i}$, $\mathbf{j}$, $\mathbf{k}$, magnitude, origin, distance, direction, angle, position vector, unit vector, orthogonal, vector addition/subtraction.

What employability skills are being developed?	The specific value of maths as a required or preferred subject for particular careers e.g. • Engineers and engineering technicians • Surveyors and surveying technicians • Systems analysts • Actuaries • Accountants • Operational researchers • Chemists • Software engineers • Statisticians	The specific value of maths as a required or preferred subject for particular careers e.g. • Engineers and engineering technicians • Surveyors and surveying technicians • Systems analysts • Actuaries • Accountants • Operational researchers • Chemists • Software engineers • Statisticians
Wider Curriculum Links?	Physics Trigonometry (sine waves) SUVAT Logarithms Exponentials Simultaneous equations Chemistry Graphs Quadratics Logarithms Rearranging formulae Biology Graphs Surface area and volume Logarithms Business Percentages Graphs	Physics Trigonometry (sine waves) SUVAT Logarithms Exponentials Simultaneous equations Chemistry Graphs Quadratics Logarithms Rearranging formulae Biology Graphs Surface area and volume Logarithms Business Percentages Graphs

	Psychology Scatter graphs Venn diagrams Box plots	Psychology Scatter graphs Venn diagrams Box plots
What useful websites are there for this topic?	www.mathsgenie.co.uk www.drfrust.co.uk www.resourceaholic.co.uk www.crashmaths.co.uk www.physicsandmathstutor.co.uk	www.mathsgenie.co.uk www.drfrust.co.uk www.resourceaholic.co.uk www.crashmaths.co.uk www.physicsandmathstutor.co.uk
What wider reading could be done for this topic?	A-Level Maths Edexcel Complete Revision & Practice (with Online Edition & Video Solutions): for the 2024 and 2025 exams (CGP Edexcel A-Level Maths)	A-Level Maths Edexcel Complete Revision & Practice (with Online Edition & Video Solutions): for the 2024 and 2025 exams (CGP Edexcel A-Level Maths)
What else can students be doing independently to develop their understanding of this topic?	Complete topic booklets from physicsandmathstutor.co.uk Complete exam packs to develop examination skills. Complete old specification past papers for extra practise.	Complete topic booklets from physicsandmathstutor.co.uk Complete exam packs to develop examination skills. Complete old specification past papers for extra practise.