FAIRFAX
SINCERITAS LABORIS

YEAR 12 CURRICULUM INFORMATION - Mathematics		
	Spring 1	Spring 2
What will students be learning?	Pure unit 4 Trigonometry Pure unit 5 Vectors Statistics Unit 3 Probability Statistics Unit 4 Statistical distributions	Pure unit 6 Differentiation Pure unit 7 Integration Statistics Unit 5 Hypothesis testing Mechanics Unit 8 Forces and motion
How will students be assessed?	Milestone assessment at the end of each unit.	Milestone assessment at the end of each unit
Literacy – What keywords will be taught?	Sine, cosine, tangent, interval, period, amplitude, function, inverse, angle of elevation, angle of depression, bearing, degree, identity, special angles, unit circle, symmetry, hypotenuse, opposite, adjacent, intercept. Vector, scalar, magnitude, direction, component, parallel, perpendicular, modulus, dimension, ratio, collinear, scalar product, position vectors. Sample space, exclusive event, complementary event, discrete random variable, continuous random variable, mathematical modelling, independent, mutually exclusive, Venn diagram, tree diagram. Binomial, probability, discrete distribution, discrete random variable, uniform, cumulative probabilities.	Differentiation, derivative, first principles, rate of change, rational, constant, tangent, normal, increasing, decreasing, stationary point, maximum, minimum, integer, calculus, function, parallel, perpendicular. Calculus, differentiate, integrate, reverse, indefinite, definite, constant, evaluate, intersection. Hypotheses, significance level, one-tailed test, two-tailed test, test statistic, null hypothesis, alternative hypothesis, critical value, critical region, acceptance region, p-value, binomial model, accept, reject, sample, inference. Hypotheses, significance level, one-tailed test, two-tailed test, test statistic, null hypothesis, alternative hypothesis, critical value, critical region, acceptance region, p-value, binomial model, accept, reject, sample, inference. Force, newtons, mass, weight, gravity, tension, thrust, compression, air resistance, reaction, driving force, braking force, resultant, force diagram, equilibrium, inextensible, light, negligible, particle, smooth, uniform, pulley, string, retardation, free particle.
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	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	• 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 **Psychology** Scatter graphs Venn diagrams Box plots	**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

What useful websites are there for this topic?	www.mathsgenie.co.uk www.drfrost.co.uk www.resourceaholic.co.uk www.crashmaths.co.uk www.physicsandmathstutor.co.uk	www.mathsgenie.co.uk www.drfrost.co.uk www.resourceaholic.co.uk www.crashmaths.co.uk www.physicsandmathstutor.co.uk
What wider reading could be done for this topic?	**Bridging GCSE & A Level Maths by Mark Rowland** Published by Collins ISBN: 978 0 00741 023 1 **AS-Level Maths Head Start** Published by CGP Workbooks ISBN: 978 1 84146	**Bridging GCSE & A Level Maths by Mark Rowland** Published by Collins ISBN: 978 0 00741 023 1 **AS-Level Maths Head Start** Published by CGP Workbooks ISBN: 978 1 84146
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.