The Ellesmere Port C of E College

Maths

Part of the Frank Field Education Trust

KS5 Curriculum Plan 2023-2024

Year 12

	LP1	LP2	LP3	LP4	LP5
TOPIC					
	Pure Mathematics – Algebraic manipulation, indices and surds, quadratic equations, graphs of functions, inequalities, simultaneous equations. Statistics - sampling, types of data, averages, quartiles, percentiles, standard deviation, variance, box plots and cumulative frequency.	Pure Mathematics - cubic graphs, quartic graphs, transformations of functions, straight line graphs, polynomial division, The Factor Theorem, proof. Statistics - histograms, scatter graphs, Venn diagrams, tree diagrams, probability distributions, hypothesis testing.	Pure Mathematics - differentiation and integration. Mechanics - equations of motion, velocity-time graphs, Resolving forces and connected particles.	Pure Mathematics - vectors, trigonometric identities and equations. Statistics - histograms, scatter graphs, Venn diagrams, tree diagrams, probability distributions, hypothesis testing.	Pure Mathematics - exponentials and logarithms, modelling, partial fractions, sequences and series, using radians. Mechanics - variable acceleration.
Skills	Use appropriate knowledge and methodology for new algebra and geometry concepts and apply them in a range of modelling problems in different contexts. Use appropriate statistical notation and interpret statistical answers in the context of a variety of problems including the Edexcel large data set. Draw clear diagrams and use them to set up the equations required to solve problems. Recognise the limitations of the models used to answer a variety of problems in context. Use appropriate knowledge and methodology for new algebra and geometry concepts and apply them in a range of modelling problems in different contexts. Use appropriate statistical notation and interpret statistical answers in the context of a variety of problems including the Edexcel large data set. Use appropriate calculus skills and apply them to non-constant acceleration problems.				
Key Vocab	Rationalise, discriminant, simultaneous, standard deviation, sampling.	Cubic, quartic, transformation, probability, correlation, hypothesis.	Circle, cosine, sine, tangent, identity, vectors, differentiation, integration.	Integration, calculus, vector, modelling, acceleration, velocity, forces, Newton.	Acceleration, velocity, forces, Newton, exponential, logarithm, radian..

Year 13

	LP1	LP2	LP3	LP4	LP5
TOPIC					
Knowledge	Pure Mathematics - sequences, series, radians, trigonometric functions, partial fractions, binomial expansion. Statistics - regression, correlation, conditional probability, normal distribution.	Pure Mathematics - partial fractions, algebraic fractions, trigonometry and modelling, differentiation. Statistics - The Normal distribution.	Pure Mathematics - parametric equations. Mechanics - friction, projectiles, forces.	Pure Mathematics - parametric equations, numerical methods, integration, 3D vectors Mechanics - variable acceleration.	
Skills	Use appropriate knowledge and methodology for new algebra and geometry concepts and apply them in a range of modelling problems in different contexts. Use appropriate knowledge and methodology for the new concept of moments and friction. Recognise the limitations of the models used to answer a variety of problems in context. Use appropriate knowledge and methodology for new number, algebra and geometry concepts and apply them in a range of modelling problems in different contexts. Use appropriate statistical notation and interpret statistical answers in the context of a variety of problems including the Edexcel large data set. Review topics to consolidate mathematical understanding and how to apply this knowledge appropriately in the context of the exam. Use appropriate knowledge and methodology for the extended concepts of projectiles, friction and non-constant acceleration. Recognise the limitations of the models used to answer a variety of problems in context.				
Key Vocab	Sequence, series, arithmetic, geometric, radians, arc length, sector, trigonometry, reciprocal functions, normal distribution, correlation, regression.	Partial fractions, sine, cosine, tangent, addition formulae, chain rule, product rule, quotient rule, probability, distribution.	Modulus, composite functions, transformations, parametric, integration by substitution, Inclined plane, projectiles, forces.	Parametric equations, Newton-Raphson, integration, vectors, integration by parts, Trapezium rule, differential equations.	