EPCHS MATHEMATICS DEPARTMENT:

LEARNING JOURNEY YEAR 12

Pearson Edexcel

Summer Term

- HYPOTHESIS TESTING
  - Critical values
  - One & two tailed tests
- VARIABLE ACCELERATION
  - Using differentiation & integration
  - Maxima & minima
- STATISTICAL DISTRIBUTIONS
  - Probability & binomial
  - Cumulative probabilities
- PROBABILITY
  - Venn & tree diagrams
  - Mutually exclusive & independent events
- CORRELATION
  - Linear regression
- FORCES & MOTION
  - Force diagrams
  - Forces as vectors
  - Connected particles
  - Pulleys
- REPRESENTATIONS OF DATA
  - Outliers Box plots
  - Cumulative frequency
  - Histograms
- CONSTANT ACCELERATION
  - Displacement-time & Velocity-time graphs
  - Vertical motion under gravity
- MEASURES OF LOCATION & SPREAD
  - Central tendency
  - Variance
  - Standard deviation
  - Coding
- MODELLING IN MECHANICS
  - Modelling assumptions
  - Working with vectors

STATISTICS

MECHANICS

Spring Term

- TRIGONOMETRIC RATIOS
  - Sine & cosine rules
  - Area of triangles
  - Graphs
  - Transformations
  - Problem solving
- TRIGONOMETRIC IDENTITIES & EQUATIONS
  - Exact trig ratios
  - Trig identities
  - Trig equations
- VECTORS
  - Magnitude & direction
  - Position vectors
  - Geometric problems
  - Modelling
- DIFFERENTIATION
  - Gradient Derivatives
  - Stationary points
  - Modelling
- INTEGRATION
  - Integrals Functions
  - Area under curves
- EXPONENTIALS & LOGARITHMS
  - Functions Modelling
  - Natural logs
  - Log equations
- DATA COLLECTION
  - Population & sampling
  - Types of data
  - Large data set

PURE MATHEMATICS

Autumn Term

- BINOMIAL EXPANSION
  - Pascal's triangle
  - Factorial notation
  - Binomial estimation
- ALGEBRAIC METHODS
  - Algebraic fractions
  - Dividing polynomials
  - Factor Theorem
  - Mathematical proof
  - Methods of proof
- FUNCTIONS & EQUATIONS
  - Midpoints
  - Perpendicular bisectors
  - Equation of circle
  - Points of intersection
  - Tangent & chord properties
- STRAIGHT LINE GRAPHS
  - $y = mx + c$ Parallel Lines
  - Perpendicular lines
  - Equation of lines
  - Length & Area Modelling
- GRAPHS & TRANSFORMATIONS
  - Cubics Quartics
  - Reciprocals
  - Points of intersection
  - Translating & stretching graphs
- EQUATIONS & INEQUALITIES
  - Simultaneous Equations
  - Solving graphically
  - Linear & quadratic inequalities
  - Inequality graphs
- QUADRATICS
  - Solving Functions
  - Graphs Modelling
- ALGEBRAIC EXPRESSIONS
  - Indices Surds
  - Expanding & Factorising

TOP TIPS FOR PARENTS

- Use of exam style questions
- Ensure pupils have a Casio Calculator fx- 991EX Classwiz
- Purchase the Collins Edexcel AS-Level revision workbook

ENRICHMENT

- Examsolutions.net
- HegartyMaths.co.uk
- Crashmaths.com
- Naikermaths.com
- UKMT challenge
- Edexcel AS past papers