Curriculum Overview 2019-2020

Mathematics

Topics covered at Key Stage 3

Year 7

Place Value
Addition and subtraction (including perimeter)
Multiplication and division
Fractions
Statistics
Negative numbers
Algebra
Geometry

Year 8
Fractions
Percentages
Algebra
Compound measures (area and perimeter)
Construction of triangles
Scale drawings and bearings
Ratio and proportion
Statistics
3D shapes

Topics covered at Key Stage 4 (Years 9, 10 and 11)

Linear Graphs
Direct and Inverse Proportion
Standard Form and calculations
Surds and Indices
Construction and Loci
Quadratic Graphs and Equations
Equations and Simultaneous Equations
Frequency Polygons
Scatter Graphs
Time Series
Pythagoras and its application
Transformations
Trigonometry
Probability
Congruence
Compound interest and depreciation
Growth and Decay
Iteration
Sequences
Application of trigonometry and bearings Sine/Cosine Rule and ½absinC

Similar shapes
Algebraic Proof
Vectors
Equation of a circle
Volume and surface area
Circle theorems
Sectors
Application of loci
Recurring Decimals
Error intervals and bounds
Transformations of functions
Histograms
Solve AND and OR probability questions
Quadratic Equations
Types of graph
Composite/Inverse functions
Quadratic inequalities
Rate of Change
Median and IQR from Raw Data
Draw and use Cumulative Frequency
Draw and Compare Box Plots

Topics covered at Key Stage 5 (Years 12 and 13)

Year 12

Quadratics and Functions
Proof from Problem Solving
Surds and Indices
Coordinate Geometry
Equations and Inequalities
Trigonometry
Polynomials
Kinematics
Graphs and Transformations
Differentiation
Vectors
Data Collection
Integration
Data Processing, Presentation and Interpretation
Variable acceleration
Exponentials and Logs
Probability
Binomial Expansion
Forces and Newton's Laws of Motion
Binomial Distribution
Statistical hypothesis testing using the binomial distribution

Year 13

Proof and Problem Solving
Sequences and Series

Trigonometry
Differentiation
Functions
Further Differentiation
Trigonometric Functions
Trigonometric Identities
Further Algebra
Integration
Parametric Equations
Vectors
Numerical Methods
Differential Equations
Kinematics
Probability
Statistical Distributions
Forces and motion
Moments of forces
Statistical hypothesis testing
Projectiles