Hampton Court House

Curriculum Outline 2020/21 – Year 12 Mathematics (MAM & SJ)

Autumn 2020
Core maths
- revise key algebraic skills and concepts, equations of lines, circles, polynomial equations and polynomial division, vectors, proof, graphs and transformations, the Binomial Expansion, differentiation
Statistics
- measure of average and spread, outliers, cleaning data, probability, discrete distributions, sampling
Mechanics
- kinematics and SUVAT equations

Spring 2021
Core maths
- exponents and logarithms, trigonometry and trig functions, parametric equations, numerical methods, introduction to differential equations
Statistics
- bivariate data, hypothesis testing, conditional probability, discrete random variables
Mechanics
- forces, Newtons laws, constant and variable acceleration, moments

Summer 2021
Core maths
- sequences and series, parametric equations and calculus, partial fractions, numerical methods, moments, differential equations, proof, 3D vectors
Statistics
- discrete random variables, normal distribution, hypothesis and distributions
Mechanics
- further kinematics, resolving forces, forces in equilibrium

There are regular topic assessments which will focus on newly learned skills and knowledge. There will also be wider reaching assessments at the end of each term with past paper practice after Christmas.

Links with fundamental values
The year includes discussions on how statistics can be used to misrepresent facts and how pupils can reach the truth behind them so make informed choices during elections.

Algebraic studies help develop logic and reasoning skills which are key for modern life in the UK, developing critical thinking skills and being able to bring a balanced view to life.

Social, moral, spiritual and cultural content
Although accuracy and attention to detail are encouraged in mathematics, there is also an emphasis on effort, dealing with failure and learning from it. Mathematics is an excellent subject in which pupils can learn resilience and independent learning.

Opportunities to independently extend learning
A level mathematics relies heavily on independent study. Pupils will be encouraged to read ahead, practise skills outside of homework given and bring in questions that look beyond the curriculum. Debate and questions are encouraged.