Great Marlow School

Excellence • Compassion • Integrity

MATHEMATICS LEARNING LADDER

A-level and Further Maths A-level

A-level Mathematics involves new ideas that are both challenging and interesting. It serves as a useful support for many other qualifications. Importantly, it is a sought after qualification for the workplace and courses in higher education. It is recognised that the mathematics skills learned at A-level, such as logical thinking, problem solving and statistical analysis, may be closer to those actually used in the workplace than skills learned in other subjects.

A-LEVEL EXAMS

MAY/JUNE

Revision and preparation for summer examinations.

Summer Term 1

PURE MATHS 2
Vectors

STATISTICS
Regression, Correlation, and Hypothesis testing
Conditional Probability

MECHANICS 2
Moments
Forces and Friction
Application of Forces

FURTHER MECHANICS 1
Elastic Collisions in one Dimension
Elastic Collisions in two Dimensions

Spring Term 2
FURTHER MATHS

STATISTICS 2
The Normal Distribution

MECHANICS 2
Further Kinematics
Projectiles

Spring Term 2

MOCK EXAMS

NOVEMBER and MARCH

Spring Term 1

Spring Term 1
FURTHER MATHS

FURTHER MECHANICS 1
Momentum and Impulse
Work, Energy and Power
Elastic Strings and Springs

CORE PURE MATHS 2
Hyperbolic Functions
Methods in Differential Equations
Modelling with Differential Equations

Autumn Term 2
FURTHER MATHS

Autumn Term 2

Autumn Term1
FURTHER MATHS

PURE MATHS 2
Parametric Equations
Differentiation
Numerical Methods
Integration

CORE PURE MATHS 2
Methods in Calculus
Volumes of Revolution
Polar Coordinates

PURE MATHS 2
Binomial Expansion
Radians
Trigonometric Functions
Trigonometry and Modelling

Autumn Term 1

CORE PURE MATHS 2
Complex Numbers
Series
Revision and Examination Practice

PURE MATHS 2
Algebraic Expressions
Functions and Graphs
Sequences and Series

Summer Term 2
FURTHER MATHS

Summer Term 2

YEAR 13

MOCK EXAMS

JUNE

PURE MATHS 1
Integration
Exponentials and Logarithms

STATISTICS
Data Collection
Measures of Location and Spread
Representation of Data

MECHANICS 1
Modelling in Mechanics
Constant Acceleration

CORE PURE MATHS 1
Linear Transformations
Proof by Induction
Vectors

Summer Term 1
FURTHER MATHS

Summer Term 1

Spring Term 2
FURTHER MATHS

STATISTICS
Correlation
Probability
Statistical Distributions
Hypothesis Testing

MECHANICS 1
Forces and Motion
Variable Acceleration

CORE PURE MATHS 1
Roots of Polynomials
Volumes of Revolution
Matrices

Spring Term 2

CORE PURE MATHS 1
Complex Numbers
Argand Diagrams
Series

DECISION MATHS
The Travelling Salesman Problem
Linear Programming
The Simplex Algorithm
Critical Path Analysis

Spring Term 1

Spring Term 1
FURTHER MATHS

Autumn Term 2
FURTHER MATHS

PURE MATHS 1
Trigonometric Ratios
Trigonometric Identities and Equations
Vectors
Differentiation

PURE MATHS 1
Straight Line Graphs
Circles
Algebraic Methods
The binomial Expansion
Trigonometric Ratios

Autumn Term 2

Autumn Term1
FURTHER MATHS

Autumn Term 1

DECISION MATHS
Algorithms
Graphs and Networks
Algorithms on Graphs
Route Inspection

PURE MATHS 1
Algebraic Expressions
Quadratics
Equations and Inequalities
Graphs and Transformations

YEAR 12

What you will learn in Year 13

In Year 13 students advance their studies of Calculus and Trigonometry. Statistics introduces the normal distribution. Mechanics includes projectile motion.

The Core Pure part of the second year covers polar coordinates and continues to develop skills in calculus. The course concludes with Further Mechanics and Elastic Collisions.

What you will learn in Year 12

In Year 12 students will strengthen their algebraic manipulation techniques and be introduced to Calculus. The statistics element includes the binomial distribution and Hypothesis testing. Mechanics studies forces, acceleration and modelling.

Further Maths starts with Decision Maths. This is followed by the Core Pure part of the course covering complex numbers and matrices.

YEAR 12 ◀ CLICK ON EITHER YEAR BUTTONS TO TAKE YOU TO AN **IN-DEPTH LEARNING JOURNEY** FOR THAT YEAR

Opportunities are Created • Potential is Realised • Excellence is Achieved