KS5 Long Term Plan
Subject: Mathematics
Exam Board: Edexcel

Statement of Intent:

We believe that students deserve a thorough, challenging and ambitious A Level Maths/Further Maths curriculum which allows them to develop a deep understanding of the key mathematical principles studied and builds on the problem solving skills they bring from their study at GCSE. A high quality A Level Maths/Further Maths education provides students with the skills they need to excel in both future studies and employment, as well as supporting their progress in other subjects with mathematical content.

Our A Level curriculum with allow students of all abilities to:

- develop mathematical knowledge and skills which encourages confidence and provides satisfaction and enthusiasm
- develop an understanding of mathematical principles and an appreciation of the subject of mathematics as logical and coherent
- acquire a range of mathematical skills which could be applied in the context of everyday situations and across other subjects
- develop the ability to analyse problems logically, recognise when and how a situation may be represented mathematically and select an appropriate method to solve the problem
- secure the mathematical background necessary for further study in this or related subjects

Statement of Implementation

In KS5 the A Level mathematics curriculum is studied at a rapid pace with the focus on exam practice and interleaving, students at every ability are exposed to exam questions in every lesson. Our approach to teaching focuses on developing a deep understanding of where the mathematical principles taught come from and why they work, as opposed to repetitive computational practise, even when this goes above and beyond the scope of the A Level specification.

Homework supports and further consolidates the learning that happens in class. A minimum of an hour of work is set every lesson, with further consolidation sheets set throughout the year to interleave previous content. Showbie is used as a tool to set and collect homework across Y12 and Y13, allowing teachers a quick and easy way to monitor quality of work for each student.

Pink booklets are used in Y12 to enable students to easily find video links to topics they study in class as well as evaluate their progress and identify areas they need to study further at home. Each topic is linked to a TLMaths clip, which means students always have a point of reference for independent study.

In Y12 and Y13 teachers plan in collaboration to ensure consistency in approach. Each lesson starts with a mini-test, so that students get used to regular, low-stake testing.

KS5 clinic runs twice a week to provide students with a dedicated sessions where they can get help with topics they don't fully understand, this session is also used as compulsory intervention time when it is needed throughout the year.

Our curriculum provides challenge above and beyond the scope of the A Level specification, providing the opportunity for students to complete in the Senior Maths Challenge (and any follow on rounds) and providing individual support to any students undertaking mathematical university admission tests (STEP, MAT, TMUA).

Term	Topics Covered (Date completed by and number of lessons)	Skills/AOs/interleaved content	Assessment (date and nature of assessment)
Yr 12 Autumn 1	**Pure Content:** Graphs and Transformations Co-ordinate Geometry Algebraic Methods Quadratics and Inequalities	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**Transition Assessment 4th October** – to assess the work students completed between school closure and the end of term and over the summer. To help assess students suitability for the course.
Yr 12 Autumn 2	**Pure Content:** Trigonometry Integration Differentiation Binomial Expansion Logarithms	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**Mini Tests w/b 15th Nov and 13th Dec –** to assess content taught since Transition Test. To help inform students of where to target their independent work.
Yr 12 Spring 1	**Pure Content:** Vectors Trigonometry Exponentials and Natural Logs **Applied Content:** Modelling in Mechanics Data Collection	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**January Assessments 31st Jan –** to assess student's knowledge of the course so far. Full Pure Assessment. To see whether targeted intervention is required for specific topics/students.
Yr 12 Spring 2	**Applied Content:** Kinematics Forces Data Processing and Interpretation Probability	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**Mini Tests w/b 21st and 28th March –** to assess content taught since Jan exams. To help inform students where to focus their independent work.
Yr 12 Summer 1	**Applied Content:** Variable Acceleration Statistical Distributions Hypothesis Testing **END OF Y12 CONTENT** **Pure Content:** Functions Proof by Contradiction	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**Mini Tests w/b 16th and 23rd March –** to assess content taught since last mini test. To help inform students where to focus their independent work.
Yr 12 Summer 2	**Pure Content:** Functions Radians Differentiation Partial Fractions Binomial Expansion	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**EOY 12 Assessments –** to assess all content covered so far AS and A2.
Yr 13 Autumn 1	**Pure Content:** Trigonometric Functions Trigonometry and Modelling	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**Y13 mock –** to assess full AS knowledge and A2 content covered so far. To see if intervention is needed for any specific topic/student.

Yr 13 Autumn 2	**Pure Content:** Differentiation Parametric Equations	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**Pre Mock Assessments 7th and 8th December –** To assess all AS and A2 content learned so far in order to give students the best idea of what to focus their revision on for their PPE's
Yr 13 Spring 1	**Pure Content:** Differentiation Revision	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	**Y13 PPE's –** to assess student's knowledge of all AS and A2 content covered so far. To see if intervention is needed for any specific topic/student.
Yr 13 Spring 2	**Pure Content:** Integration	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	
Yr 13 Summer 1	**Pure Content:** Numerical Methods Revision	• **AO1 Use and apply standard techniques** • **AO2 Reason, interpret and communicate mathematically** • **AO3 Solve problems within mathematics and in other contexts**	