Scheme of Learning YEAR OVERVIEW

The Big Picture—Intent:

Y12 Mathematics is designed to maximise progression in preparation for Y13 or AS Level outcomes. Many topics presents opportunities to recap on GCSE covered content linking this to brand new A-Level content. All topics give students the chance to extended themselves on the journey to achieving their potential.

YEAR 12 MATHS

Content / Units	Skills	Knowledge	Prior—Y11	Next—Y13
Proof, Algebra and functions, Coordinate geometry in the (x,y) plane, Sequences and series, Trigonometry, Exponentials and logarithms, Differentiation, Integration, Vectors, Statistical sampling, Data presentation and interpretation, Probability, Statistical distributions, Statistical hypothesis testing, Quantities and units in mechanics, Kinematics, Forces and Newton's laws	Mathematical argument, language and proof Mathematical problem solving Mathematical modelling	The depth of knowledge required can be found using the Exam Board Specification found here: https://qualifications.pearson.com/content/dam/pdf/A%20Level/Mathematics/2017/specification-and-sample-assesment/as-l3-mathematics-specification.pdf	Higher Content All content covered during the GCSE course creates the foundation for A-Level content in Year 12	All topics covered in Year 12 are built upon in Year 13 with the addition of: Numerical Methods (Pure) and Moments (Mechanics)

Implementation	Marches Futures Links	Summative Assessment
Lessons are split between two members of staff. The Teacher 1 delivers 3 sessions per week and teacher 2 delivers 2 sessions per week. Both teachers deliver Pure Maths modules with a focus on Mechanics from Teacher 1 and Statistics from Teacher 2. Independence and study skills will be fostered through: challenging questions and problems, group and pair work, modelling, homework and PLC after each unit and past paper assessment. Each unit starts with a student self reflective log which is revisited after each objective has been taught (may be across a few lessons) Lessons will be based around multiple representations; Concrete, Pictorial, Abstract to give a deeper understanding of concepts. Reasoning will be developed through the exploration of mathematical patterns and images with a variety of problem solving methods for just one question. Formal structure to answering A-Level questions will be embedded. Learning to move forward and uncover mathematical ideas from mistakes and misconceptions via true/false, spot the mistake and other reasoning tasks where students are required to make a judgement and justify their answers. Knowledge organiser will be provided for each block to enable students to recall keywords, facts, formulas and/or formal methods. WOW moments will occur when students solve complex problems, when the barrier wall disappears and they have a moment of satisfying clarity (no matter how brief) or spotting a relationship that was previously unseen. Numeracy and calculator skills specific to A-Level content will be embedded.	Mixed attainment Working as part of a group Sharing of views and opinions with others and resolving any differences maturely. Showing respect for people Collaborating positively to complete tasks Completing PLC and taking responsibility for closing gaps in their own knowledge. Post 6th Form Pathways discussed and linked to content including career uses.	Baseline/Transition Test completed at the beginning of Y12 during the first week Topic Assessments completed after each topic. Mock Exam 1 using Past Paper Questions completed in January Mock Exam 2 using Past Exam Papers completed in March/April AS Exams May/June

Impact:

Students will have increased understanding and confidence in A-Level Maths and be able to apply new skills to a variety of new and challenging mathematical problems. Students will know more and remember more. Students will have developed skills enabling them to manipulate familiar and unfamiliar vocabulary and deduce mathematical content. They will be familiar with a variety of exam questions and be suitably prepared to answer examination style questions. There will be an increase in attainment, evidenced in regular, formal and interleaved assessments.