MATHEMATICS

Host School:	**Mountain Ash**
Subject Name:	**Mathematics**
Level:	**3: AS/A2**
Syllabus:	**WJEC**
Duration of Course:	**1/2 Years**
Time:	**8 hours per fortnight**

A-level Mathematics is a challenging but fascinating and extremely rewarding course. It is a useful subject to study alongside many others as it develops your ability to think logically and solve problems.

The WJEC GCE AS and A level in Mathematics encourages learners to:

- **develop their understanding of mathematics and mathematical processes in a way that promotes confidence and fosters enjoyment;**

- **develop abilities to reason logically and recognise incorrect reasoning, to generalise and to construct mathematical proofs;**

- **extend their range of mathematical skills and techniques and use them in more difficult, unstructured problems;**

- **develop an understanding of coherence and progression in mathematics and of how different areas of mathematics can be connected;**

- **recognise how a situation may be represented mathematically and understand the relationship between 'real world' problems and standard and other mathematical models and how these can be refined and improved;**

- **use mathematics as an effective means of communication;**

- **read and comprehend mathematical arguments and articles concerning applications of mathematics;**

- **acquire the skills needed to use technology such as calculators and computers effectively, recognise when such use may be inappropriate and be aware of limitations;**

- **develop an awareness of the relevance of mathematics to other fields of study, to the world of work and to society in general;**

- **take increasing responsibility for their own learning and the evaluation of their own mathematical development.**

Entry Requirements: Additional information

You must have achieved a minimum of 5 A*-C grades at GCSE, including a B or above in Mathematics at Higher Tier. Apart from the academic requirements, a good grasp of algebra techniques is essential; especially algebraic fractions, factorising, solving quadratics and rearranging formula.

Content (WJEC Examination Board)

All the Option Choices involve a selection from the following:-

1.   Pure Mathematics - this is compulsory for every option.

This involves developing theories and rules in topics such as Algebra, Geometry, Trigonometry, Calculus, etc.

2.   Applied Mathematics - this is a combination of Mechanics and Statistics and is compulsory for every option.

Mechanics - The study of moving and static objects.

Topics include: Newton's Laws, Stretched Strings, Dynamics, Energy, etc.

Statistics - This is the study of Mathematics involving numerical data.

Topics are based on probability, prediction and the related distributions, Expected outcomes etc.

There are two possible choices available:

1.   AS Mathematics (0.5 A Level)

This course is covered in Year 12. Students need to attend the Pure and Applied Mathematics lessons. It will be examined in the summer of Year 12. The decision for choosing A Level of AS Level will not need to be made at the start of Year 12 but can be made during the course.

2)   Mathematics A Level (1 A Level)

Assessment

Your progress will be monitored throughout the year.

Students will take a combination of four modular papers for each full A Level and two modular papers for an AS Level.

The papers numbered Unit 1 and 2 are the Year 12 course content for Pure and Applied

Teaching and Learning Styles

There will be teacher led instruction, discussion, class practice, some note taking, the memorising of rules/methods and homework. Solving problems and 'doing' mathematics is the best way to learn the subject.

Career Opportunity and Progression

Mathematics is an entry qualification for many other courses which lead to careers in Medicine, Science, Engineering, Astronomy, Law, Education, Finance, Statistics, Accounting and