MATHEMATICS

Qualification Level	A Level
Exam Board/ Specification	AQA 7357
Contact	H Lindsay
Contact email address	hannah.lindsay@ewsacademy.org.uk

Why study this course?
An A level in Mathematics is useful for many careers. It is valued by universities and employers as an entry requirement for further studies in areas such as accountancy, actuarial work, computing, architecture, law or engineering. A good mathematical knowledge is also considered essential in many careers linked to the sciences or medicine.

Course content
Students will study three areas of Mathematics. These are Pure Mathematics, Mechanics and Statistics. The work in Pure Mathematics is of an abstract nature, with applications of theory to reality where appropriate. The course extends the knowledge gained at GCSE level in algebra, geometry and trigonometry. New branches of Mathematics are introduced including the study of sequences and series, natural logarithms, and most importantly, calculus, which is fundamental to many parts of the A level course.

Mechanics is the study of the physical behaviour of objects. There are two main branches: Dynamics and Statics. Dynamics is concerned with the behaviour of moving objects and is mostly based on Newton's laws of motion. Examples include particles projected through the air, motion in horizontal and vertical circles. Statics is the study of stationary objects and the forces required maintaining equilibrium. Examples include ladders leaning against walls and objects resting on inclined planes.

Statistics is concerned with the mathematics of risk taking and decision making. A thorough grounding is given in probability theory and the graphical representation of data, correlation and regression, the normal distribution, the Binomial and Poisson distributions and continuous random variables

Higher education/ career links
There are many Mathematical courses available at universities which can offer a single honours degree or joint honours degree. Mathematics can be linked with many subjects such as Accountancy, Physics, Languages, Law, Management, Astronomy or Computing. Further research will show how Mathematics can be linked to the students' choices. Mathematics is a highly valued course and it offers students many skills which can be applied elsewhere. Successful Mathematical students are perceived to be analytical, logical, determined, numerate, able to problem solve, and effective communicators. These are all skills and characteristics relevant to all careers today. Many students who have studied Mathematics have chosen careers in Law, Medicine, Veterinary Medicine, Education, Architecture and Engineering or have taken on apprenticeships.

Exam/ Assessment structure
Students will sit 3 x 2hr papers at the end of their second year of study.

Specific equipment or resources required
The examination specifications state that all students will require the use of their own graphical calculator.

Entry requirements
A minimum of a GCSE grade 7. The student needs to be well motivated, determined and organised in order to keep up with demands of the course. They need to have an interest in Mathematics and enjoy working on problems using a range of skills. Success in Mathematics at Advanced level requires a commitment to consistently work throughout the two year course.