Workington Academy - Sixth Form

Subject: Mathematics

Why you should study maths

Mathematics is considered to be one of the most traditional subjects, being widely seen as an indicator of good problem solving and analytical skills. A Level Mathematics is considered an advantage for the majority of University Degrees, such as Economics; Business Studies; Psychology; Computing and Social Sciences and remains a requirement for some courses, such as Physics and Medicine. A good grade in A Level Mathematics can boost most University applications.

Research has shown that graduates with A Level Mathematics earned, on average, at least 10% more than those without, regardless of the subject of their degree.

If you wish to study maths at AS or A2 you will need to have studied Higher GCSE.

We are hoping to put on "Transition" lessons after the GCSE exams, to help bridge the gap for students who feel they need some extra input. An initial assessment will take place (school wide policy) approximately 5 weeks into the course. This helps assess course suitability and more importantly provide appropriate and early intervention and support.

An interest in, and enjoyment of, mathematics is considered essential.

Examination Board: OCR AS & A GCE Mathematics (3890, 7890)

Course Content

The course consists of three units at AS in Year 12 and a further three in Year 13. The units are a combination of Core (Pure) and Applied Mathematics.

In Year 12 you will study the two Core units C1 (Introduction to Advanced Mathematics), C2 (Concepts for Advanced Mathematics) and one Applied Unit, Decision 1, which involves some mathematics used in commerce and industry, such as algorithms, network problems and linear programming. An alternative Applied Unit such as Statistics 1 may, in certain circumstances, be offered as an alternative to Decision 1. The Core Units include the algebraic methods and mathematical theories that underpin the Applied Modules.

Core 1 reinforces and builds upon GCSE topics, with a particular focus on algebra skills and co-ordinate geometry, before introducing students to the world of calculus. Core 2 continues to develop techniques within algebra and calculus and, where appropriate, beginning to apply these to solve contextual problems.

In Year 13 students continue to study C3 (Methods for Advanced Mathematics), C4 (Applications of Advanced Mathematics) and a second Applied Unit, usually Statistics 1, which involves skills used in the Sciences, Research, Economics and Finance. As in AS Mathematics, an alternative Applied Unit may be offered in certain circumstances.

Core 3 and 4 further extend students knowledge, techniques and application of calculus whilst also introducing additional advanced topics.

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All units are fully supported by textbooks written specifically for this course in addition to a comprehensive online resource designed to assist and supplement self study and home-learning. This offers thorough notes, exemplars, Power Point demonstrations and model solutions for every topic within each unit, along with multiple exercises and topic assessments to reinforce, consolidate and help master each technique.

Assessment:

Each module is examined by a 1 hour 30 minute exam
Each unit is assessed by an exam of 90 minutes that can only be taken in the summer of Year 12 or 13, as appropriate. All units have equal weighting with question papers designed to have a gradient of difficulty both throughout the paper and, where possible, within individual questions.

No calculator may be used in Core 1; for all other Units candidates may use a scientific or graphical calculator.

Skills Developed, Progression and Possible Future Careers

A-Level Maths develops competence and confidence to deal with information given in algebraic, numerical or graphical form, all of which are valuable transferable skills. The written work of trained mathematicians tends to be logical, concise and precise.

A-Level Maths can lead to a variety of careers in areas such as Finance; Scientific Research; Medicine; Engineering; Statistics; Data Analysis and Teaching.

Whether you wish to take your study of mathematics further to degree level or beyond, or use it as an entry to virtually any other subject, A Level Mathematics will be considered an advantage.

For further information or advice please contact Miss Harpham