

Course title: Mathematics A-Level Pearson (Block B)

Academic year:	2024
Course Venues:	The Weston Road Academy
Course Type:	A-level
Course Code:	12BWrMA1
Duration:	2 years

Course Description:

Mathematics is a highly regarded A Level that develops students' understanding of both Pure and Applied concepts. The A Level works well in combination with many other subjects, such as the Sciences, Business Studies and Psychology, but is also a challenging and enjoyable course in its own right.

The course aims to enable students to:

- Understand mathematics and mathematical processes in a way that promotes confidence, fosters enjoyment and provides a strong foundation for progress to further study.
- Extend their range of mathematical skills and techniques.
- Understand coherence and progression in mathematics and how different areas of mathematics are connected.
- Apply mathematics in other fields of study and be aware of the relevance of mathematics to the world of work and to situations in society in general.
- Use their mathematical knowledge to make logical and reasoned decisions in solving problems both within pure mathematics and in a variety of contexts, and communicate the mathematical rationale for these decisions clearly.
- Take increasing responsibility for their own learning and the evaluation of their own mathematical development.

Course Content:

Students study both Pure and Applied Content:

Pure Content overview

- Topic 1 – Proof
- Topic 2 – Algebra and functions
- Topic 3 – Coordinate geometry in the (x, y) plane
- Topic 4 – Sequences and series
- Topic 5 – Trigonometry
- Topic 6 – Exponentials and logarithms
- Topic 7 – Differentiation
- Topic 8 – Integration
- Topic 9 – Numerical methods
- Topic 10 – Vectors

Applied Content overview

Section A: Statistics

- Topic 1 – Statistical sampling
- Topic 2 – Data presentation and interpretation
- Topic 3 – Probability
- Topic 4 – Statistical distributions
- Topic 5 – Statistical hypothesis testing

Section B: Mechanics

- Topic 6 – Quantities and units in mechanics
- Topic 7 – Kinematics
- Topic 8 – Forces and Newton's laws
- Topic 9 – Moments

A large data set will be provided, which will support the assessment of Statistics. Students will be required to become familiar with the data set in advance of the final assessment.

Entry requirements: The standard entry criteria to study in the sixth form are a 9-4 in at least seven different subjects, including English and mathematics, which would usually be at grade 4 or above.

To study mathematics, you will be required to achieve a grade 6 at GCSE.

Assessment: The A level consists of three externally-examined papers; Pure Mathematics 1, Pure Mathematics 2 and Statistics and Mechanics. Each paper is a 2 hour written examination. Paper 1 and 2 may contain questions on any topic from the Pure Mathematics content. Paper 3 will contain questions on topics from the Statistics and Mechanics content. Calculators can be used in all examinations.

Financial Information:

The use of technology permeates the study of A Level Mathematics. Calculators used **must** include the following features:

- An iterative function
- The ability to compute summary statistics and access probabilities from standard statistical distributions.

The Maths Department at the Weston Road Academy will offer students the opportunity to buy a suitable calculator at a competitive price.

Future opportunities: The successful study of A Level Mathematics can help progression onto numerous higher education courses and into careers such as engineer, economist, statistician, computer scientist and actuary.

Further information:

