The Cardinal Wiseman School
A Level courses

MATHEMATICS

Entry Requirements:

6 x grades 9 to 4 GCSE passes, including a 4 in English Language. You also need a **7 in GCSE Maths**.

What will I study?

- **Pure Mathematics** which includes: Algebra and Functions, Calculus, Binomial Expansion, Sketching Curves, Arithmetic and Geometrical Sequences and Functions, Trigonometric Identities and Equations, Numerical methods, Exponential and Log functions, Radians, Vectors and Co-ordinate Geometry.
- **Applied Mathematics** which includes: Mechanics: Mathematical Models, Kinematics of a Particle, Statics of a Particle, Moments. Statistics: Data: Collection, Representation, measures of Location and Spread, Probability, Correlation; Regression, Discrete Random Variables and the Normal Distribution.

What are the examination/coursework requirements?

- We follow the Edexcel A level Maths course
- Assessment is based on 3 examinations – 2 x Pure and 1 x Applied (combined Mechanics and Statistics). Each exam lasts 2 hours and is marked out of 100. Calculators are allowed in all three. There is no coursework for A Level Maths.

What skills will I develop?

- Problem-Solving: You'll learn to approach complex problems logically and systematically, which is beneficial in many areas of life and work.
- Analytical Thinking: A level Maths enhances your ability to analyse data, recognise patterns, and draw meaningful conclusions, which is crucial for decision-making in various fields.
- Logical Reasoning: The subject trains you to think logically and make reasoned arguments, which is valuable in both academic and professional contexts.
- Time Management: Managing the workload and meeting deadlines in A level Maths helps you develop strong time management skills.
- Organisational Skills: You'll get better at organizing information and breaking down complex tasks into manageable steps.
- Numeracy and Data Analysis: You'll become proficient in handling numerical data and performing statistical analysis, which is essential for careers in finance, engineering, and technology.
- Attention to Detail: Precision is key in mathematics, and this attention to detail can be applied to many other areas of study and work.

How will this subject help me with my future career?

The skills you develop by studying A level Maths are not only beneficial for further studies in mathematics or related fields, but are also highly valued by employers in a wide range of industries. It can significantly enhance your future career prospects in several ways:

- Preparation for STEM Careers: If you're interested in science, technology, engineering, or mathematics (STEM) fields, A level Maths is essential. It provides the necessary background for understanding complex concepts and solving technical problems.
- Enhanced Problem-Solving Skills: The critical thinking and problem-solving abilities you develop in A level Maths are highly valued in various careers, from finance to engineering.
- Understanding Finance and Business: Careers in finance, business, and economics often require strong mathematical skills. A level Maths equips you with the ability to analyse financial data, make informed decisions, and understand market trends.
- Technological Advancement: With the rise of technology, skills in areas like data science, artificial intelligence, and cryptography are in high demand. A level Maths provides a solid foundation for these fields.
- Versatility in Career Choices: The analytical and quantitative skills from A-level Maths are useful in a wide range of industries, including healthcare, environmental science, and even creative fields like music and art.