

GCE MATHEMATICS / FURTHER MATHEMATICS

Why choose WJEC GCE Mathematics / Further Mathematics?

Mathematics permeates every aspect of our lives. Studying for an A level in Mathematics / Further Mathematics will complement other studies and provide support for those who are taking AS/A level courses in other subjects. Gaining an AS/A level in Mathematics / Further Mathematics will provide a firm mathematical foundation for those who wish to proceed to further study or to employment. It will open up a vast range of opportunities for both university degrees and career options.

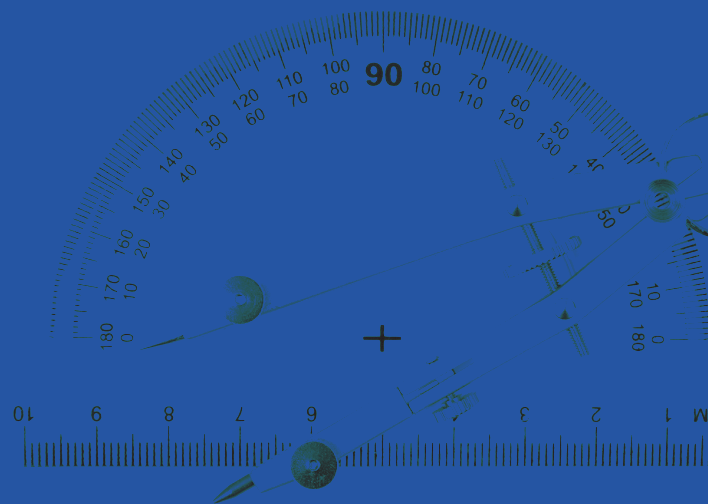
What will I study?

In **GCE Mathematics**, you will study:

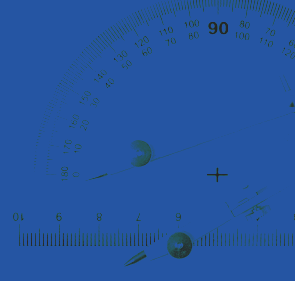
- **Pure Mathematics** – coordinate geometry, algebra and functions, differentiation, integration, trigonometry, exponentials and logarithms, vectors, proofs and sequences and series.
- **Statistics** – statistical sampling, data presentation and interpretation, probability, statistical distribution, statistical hypothesis testing.
- **Mechanics** – kinematics, forces and Newton's laws, vectors, moments, differential equations.

In **GCE Further Mathematics**, you will study:

- **Further Pure Mathematics** – complex numbers, matrices, further algebra and functions, further vectors, proofs by mathematical induction, further trigonometry, further calculus, polar coordinates, hyperbolic functions, differential equations.
- **Further Statistics** – random variables and the Poisson process, exploring relationships between variables and goodness of fit of a model, samples and populations, statistical distributions, hypothesis testing, estimation.
- **Further Mechanics** – momentum and impulse, Hooke's law, work, energy and power, circular motion, differentiation and integration of vectors, rectilinear motion, centre of mass, equilibrium of rigid bodies, differential equations.



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What skills will I develop?

- You will develop an understanding of the different areas of mathematics and how they relate to each other.
- You will extend your range of mathematical skills and techniques and be able to use and apply them to more difficult, unstructured problems.
- You will develop abilities to reason logically and recognise incorrect reasoning, to generalise and to construct mathematical proofs.
- You will develop skills relevant to exploring and analysing large data sets and be able to interpret data presented in summary or graphical form.

How will I be assessed?

GCE Mathematics				
AS Unit 1: Pure Mathematics A Written examination 120 marks (2 hour 30 minutes)	AS Unit 2: Applied Mathematics A Written examination 75 marks (1 hour 45 minutes)	A2 Unit 3: Pure Mathematics B Written examination 120 marks (2 hour 30 minutes)	A2 Unit 4: Applied Mathematics B Written examination 80 marks (1 hour 45 minutes)	
GCE Further Mathematics				
AS Unit 1: Further Pure Mathematics A Written examination 70 marks (1 hour 30 minutes)	AS Unit 2: Further Statistics A Written examination 70 marks (1 hour 30 minutes)	AS Unit 3: Further Mechanics A Written examination 70 marks (1 hour 30 minutes)	A2 Unit 4: Further Pure Mathematics B Written examination 120 marks (2 hour 30 minutes)	A2 Unit 5: Further Statistics A OR A2 Unit 6: Further Mechanics B Written examination 80 marks (1 hour 45 minutes)

Careers with Mathematics/Further Mathematics

An A level in Mathematics/Further Mathematics can open up a wealth of career paths. These include jobs such as: financial analyst, computer programmer, medical scientist, actuary, software developer, economist, data or research analyst, accountant, teacher.