



Rewarding Learning

GCSE Further Mathematics

STUDENT
GUIDE

INTRODUCTION

You should study Further Mathematics if you require knowledge of mathematics beyond GCSE Mathematics (Higher Tier) and you are capable of working beyond the limits of the GCSE Mathematics specification. It will broaden your mathematical knowledge and skills to a more advanced level.

You will learn to use and apply standard techniques and reason, interpret and communicate mathematically and solve problems in mathematics and other contexts.

WHY STUDY FURTHER MATHEMATICS?

The optional units in this specification give you choice. You will use real-life scenarios to help you see how further mathematics is relevant to other subject areas, the world of work and to wider society.

The new specification offers a broad range of different branches of mathematics to help you to progress to advanced, further or higher education and beyond into lifelong learning.

UNIQUE FEATURES OF THIS QUALIFICATION?

The GCSE Further Mathematics specification goes beyond the level of challenge posed by the GCSE 9 to 1 mathematics qualifications in England and our revised GCSE Mathematics (Higher Tier).

There are no revised UK GCSE specifications comparable to this one. This specification challenges you, stretches you and helps you make connections between different concepts in mathematics.



WHAT WILL I STUDY?

UNIT ASSESSMENT	AREAS OF STUDY
Unit 1: Pure Mathematics	<p>In this unit, you investigate algebra, trigonometry, differentiation, integration, logarithms, matrices and quadratic inequalities.</p> <p>This unit is mandatory. It is assessed in a 2 hour written examination worth 50 percent of the overall qualification.</p>
Unit 2: Mechanics	<p>In this unit, you explore kinematics, vectors, forces, moments and Newton's Laws of Motion.</p> <p>This is an optional unit assessed in a 1 hour written examination worth 25 percent of the overall qualification.</p>
Unit 3: Statistics	<p>In this unit, you understand and use statistical terminology, measures of central tendency and dispersion, binomial and normal distributions, probability and bivariate analysis.</p> <p>This is an optional unit, assessed in a 1 hour written examination worth 25 percent of the overall qualification.</p>
Unit 4: Discrete and Decision Mathematics	<p>In this unit, you study counting, logic, linear programming, time series and critical path analysis.</p> <p>This is an optional unit assessed in a 1 hour written examination worth 25 percent of the overall qualification.</p>



Unit 1
Pure Mathematics

50%



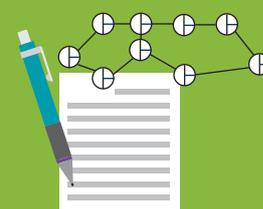
Unit 2
Mechanics

25%



Unit 3
Statistics

25%



Unit 4
Discrete and Decision
Mathematics

25%

WHAT CROSS-CURRICULAR SKILLS, THINKING SKILLS AND PERSONAL CAPABILITIES WILL I DEVELOP?



- You learn to communicate meaning, feelings and viewpoints in a logical and coherent manner, by using appropriate mathematical language and notation with confidence;
- You may have the opportunity to make effective use of information and communication technology in a wide range of contexts to access, manage, select and present mathematical information;
- You will apply and evaluate a range of approaches to solve problems in familiar and novel contexts.

WHAT CAN I DO WITH A QUALIFICATION IN FURTHER MATHEMATICS?

Mathematics is becoming increasingly important in both employment and higher education.

Studying GCSE Further Mathematics helps you to build the knowledge and skills to progress to GCE Mathematics and GCE Further Mathematics. It also helps provide progression to other post-16 subjects such as STEM, Computing, Geography or Business Studies.

A qualification in further mathematics can lead to employment in any area of work where developing knowledge and skills beyond the level of GCSE Mathematics is valued.

