

Welcome to the Department of Mathematics

$$3 - 2 = 1 \quad \longrightarrow \quad \sin^2\theta + \cos^2\theta = 1 \quad \longrightarrow \quad \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{+\infty} e^{-\frac{1}{2}t^2} dt = 1$$

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Why choose A-Level Mathematics?

- Studying mathematics is a great way to build analytical, research and problem-solving skills and can help you to develop logic for everyday tasks like planning projects, managing your money and more.
- Studying mathematics can take you on to a huge range of great careers, particularly including aerospace and defence, biosciences, engineering, banking and finance, IT, science and research and so much more!
- As a facilitating subject, mathematics is a route to other subjects. Mathematics A level is a must-have for going on to study subjects like physics, engineering and economics, but it also supports a range of further subjects like IT, chemistry, biology and business.

Why choose A-Level Mathematics?

- Big data is identified by the government as a key growth industry for the future, big data requires people with mathematical and computing backgrounds.
- The increasing sophistication of technology is driving change to the economy and the nature of work. This is increasing the demand for mathematical and quantitative skills.
- Challenge yourself. The new specifications are designed to stretch you, and these skills can be developed as you progress, leading on to a world of great opportunities!

Why choose A-Level Mathematics?

- Higher levels of achievement in mathematics are associated with higher earnings for individuals and higher productivity. This means:

A Level Mathematics = Extra money

- The *Earnings and Employment Returns to A levels report* in 2015 found that studying A level Mathematics can boost earnings by 8% for men and 33% for women
- The 2017 study by the Institute for Fiscal Studies found that the top 5 earning degrees in the UK all require A-level Mathematics as a pre-requisite.
- Academic
- Improves Oxbridge success
- Prestigious
- You have been successful in Mathematics at GCSE and you love it!

Why Mathematics at SJWMS?

Excellent Results – A Level Mathematics (2019)

	A*	A	B	C	D	E
Totals	28	24	13	16	11	7
Percentage	28.3	24.2	13.1	16.2	11.1	7.1

We achieved:

Over 50% A* - A grades

Over 65% A* - B grades

Over 81% A* - C grades

- Increase from 2018
- Well above the national average

Why choose A-Level Further Mathematics?

- You have been very successful in Mathematics at GCSE and you really enjoy it.
- Develop areas of the brain untouched by other subjects.
- Provide a stimulating experience taking you beyond the standard A Level.
- It is an entry requirement by some Universities for Mathematics Degrees.
- You will end up earning more money than the rest of us!

Why Mathematics and Further Mathematics at the Math School?

- Excellent success record at A Level
- Experienced team of teachers
- Weekly support sessions
- Extra teacher led support provided
- Revision sessions
- Mathematics prefects
- Study Rooms
- Mathematics Hub School for the South East

Why Further Mathematics?

Excellent Results – A Level Further Mathematics (2019)

	A*	A	B	C	D	E
Totals	8	7	3	4	2	0
Percentage	33	29	13	17	8	0

We achieved:

62% A*- A grades

75% A*- B grades

- Well above the national average
- 2020 CAG results in both A-Level Mathematics and Further Mathematics were consistent with these results

Mathematics & Further Mathematics

- Single Mathematics
 - One A Level
- Mathematics and Further Mathematics
 - Two A Levels
- No coursework, results achieved from examination performance

A-Level Mathematics

- Students study four modules over two years, two each year. In Year 12 students take one module in Pure Mathematics and one application module in Statistics and Mechanics.
- After June in Year 12 students start their A-level course which continues into Year 13 by studying the second year of Pure Mathematics and the second year of Statistics and Mechanics.

A-Level Mathematics

Assessment Modules

Paper 1:

Pure Mathematics

33%, 2 hours, 100 marks

Paper 2:

Pure Mathematics

33%, 2 hours, 100 marks

Paper 3:

Statistics and Mechanics

33%, 2 hours, 100 marks

Any pure content can be assessed on either paper

Section A: Statistics (50 marks)
Section B: Mechanics (50 marks)

A-Level Further Mathematics

- In addition to the four modules studied in the single subject students take another four modules over two years and can gain a second A-Level in Mathematics, called Further Mathematics. The Further Mathematics modules are called Core Pure Mathematics 1&2.
- Further Mathematics students also study two application modules and have a choice of two modules from Further Pure Mathematics 1&2, Further Mechanics 1&2, Further Statistics 1&2 and Decision Mathematics 1&2. We are choosing the Further Mechanics 1 & Decision Mathematics 1 at our school.

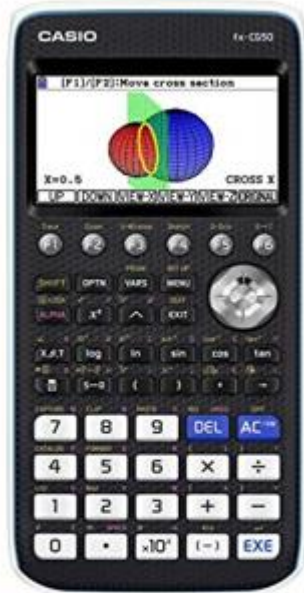
A-Level Further Mathematics

Assessment Modules

Paper 1: Further Core Mathematics 1 25%, 1½ hours, 75 marks	Any core content can be assessed on either paper
Paper 2: Further Core Mathematics 2 25%, 1½ hours, 75 marks	
Paper 3 (Option 1): Further Mechanics 1 25%, 1½ hours, 75 marks	Students take one of the following four options: <ul style="list-style-type: none">• Further Pure Mathematics• Further Statistics• Further Mechanics• Decision Mathematics
Paper 4 (Option 2): Decision Mathematics 1 25%, 1½ hours, 75 marks	Students take one of the following four options: <ul style="list-style-type: none">• Further Pure Mathematics• Further Statistics• Further Mechanics• Decision Mathematics

Suggested Calculator

Scientific Calculator OR Graphical Calculator



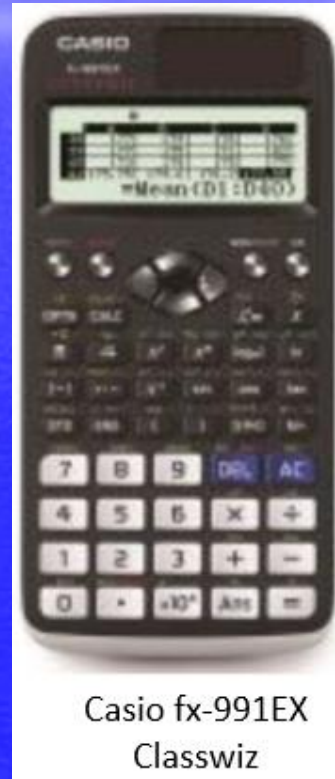
Casio fx-CG50
Graphical Calculator

Scientific calculator - we recommend:

Casio fx-991EX Classwiz, this is available on the high street and online. (Essential requirement for new A-level Mathematics).

Graphical calculators – we recommend:

Casio fx-CG50, contains the required functions and additional programming facilities. This graphical calculator can be very useful. (Not essential for new A-level Mathematics).



Casio fx-991EX
Classwiz

A-Level Mathematics & Further Mathematics

- Sir Joseph Williamson's Mathematical School is the hub school for Mathematics in Kent and South East England.
- We also have strong links with the Further Mathematics Network. Hence, we will be at the forefront of the new curriculum.
- We are proud to have a team of experienced and dedicated Mathematics staff who will deliver the new course content to allow all students to make the best possible progress and build on the outstanding results in both A-Level Mathematics and Further Mathematics which we achieved in summer 2019.

What are STEP and AEA?

- AEA – Advanced Extension Award
- STEP – Sixth Term Examination Papers
- Close links with the South East Further Mathematics Network
- Teacher led sessions

Applications

- For single A Level in Mathematics apply for Mathematics. GCSE Grade 7 required.
- For Two A Levels in Mathematics apply for Mathematics and Further Mathematics. GCSE Grade 8/9 required.
- Everyone who meets the entry requirements is welcome
- Induction Week
- Summer homework.
- Opportunities for responsibility