

A level Mathematics Specification

Why study Mathematics?

- Careers with good mathematical skills are often well paid, interesting and rewarding.
- It is an interesting and challenging course which extends the knowledge learnt at GCSE and introduces new areas of mathematics such as calculus, logarithms and proof.
- It is a versatile qualification respected by employers and enables learners to become better at thinking logically and analytically.
- Mathematical problem solving enables you to develop resilience, think creatively and strategically, formulate reasoned arguments and communicate them clearly.
- This course will suit those learners who enjoy algebraic problem solving.

Why study Mathematics at Solihull Sixth Form College?

- The Mathematics Department is staffed by well qualified and experienced teachers of Mathematics who use a variety of teaching methods to support your learning.
- We use technology and online resources to enhance our learning. It is used to support, develop and consolidate many of the new concepts learnt.
- Every learner has a dedicated electronic textbook which gives access to further support and homework.
- There is a team of enthusiastic teachers who create a vibrant environment with the learners' interest at heart.



Case Study

Among the recent successful learners to have taken this course is **Kenzy El Assy**.

She came to the College from Cockshut Hill School to study A levels. She achieved an A* grade in Mathematics, as well as A and B grades in Chemistry and Physics. She has progressed to the University of Birmingham to study Chemical Engineering.



“When it came to my studies, I found the resources in the library really helpful. I would advise future students who are wondering what to do after A level to talk to students doing the options they are considering.”
- student Kenzy El Assy



Course Outline

The course builds upon students' previous experience of Mathematics, developing some topics further and introducing many new concepts. Learners are expected to undertake 5 hours of work away from the classroom each week.

Year 12

Learners will cover the essential pure mathematical methods that can be applied to real world scenarios. Topics include solving equations, graphs and transformations, coordinate geometry, logarithms and exponentials, trigonometry, and differentiation and integration. Learners will also study some mechanics in the form of kinematics, forces and Newton's Laws as well as some statistics including statistical models and hypothesis testing.

Year 13

The work in pure mathematics is extended to include topics such as sequences and series, functions and numerical methods. This is in addition to developing advanced techniques in calculus and trigonometry. There will also be more material in mechanics such as the resolution of forces, moments and the study of friction. In statistics more advanced probability theory will be covered and you will investigate further statistical distributions along with how they are applied.

Assessment

No Coursework

Examination (100%)

Examining Board – AQA.

Special Entry Requirements

Minimum grade 6 or above in GCSE Mathematics and 2 x grade 6 in either Combined Science or separate Sciences. In addition, standard A level entry requirements apply - see www.solihullsf.ac.uk/courses/entry-requirements.

Prohibited Options

Statistics and Level 3 Mathematical Studies (Core Maths).

What do our learners go on to do?

There is a shortage of people with strong mathematical skills. Mathematics is a common part of degree courses such as Business and Finance, Architecture, Chemistry, Biology, Psychology, Economics, Management Science and Computing. Mathematics is essential for courses such as Engineering, Physics and Mathematics itself. Mathematics A level keeps many doors open and is valuable for almost every future career plan.

Cost Implications

You will be expected to purchase a Graphical Calculator (specific model will be given at the start of the course) and some work will be done using computers. Some work will be done online.

Complementary Subjects or Enrichment Courses

Physics, Computing, Economics, Chemistry, Biology, Geography, Geology, Accounting, Psychology or Business Studies.

Examination Results

In the past two years, this course has seen high levels of achievement:

| Year | Pass Rate A*-E% | A*-C% |
|------|-----------------|-------|
| 2022 | 99% | 72% |
| 2023 | 97% | 71% |

Contact

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