

MATHEMATICS




In our A-Level course, you will learn more Pure Mathematics, so things like geometry, trigonometry and calculus, while using your very good algebraic skills. You will also develop your knowledge of Statistical analysis and Mechanics. You will then use these skills to solve problems. If you also choose Further Mathematics, you will be introduced to Decision Mathematics.

BEFORE YOU START

- Textbook: We use online textbooks and revision materials, which are provided by the college.
- Calculator: You will need to purchase the graphical calculator - **Casio fx-CG50**. A discount is available if you buy through the college in September.
- Other Equipment Required: pens, pencils, highlighters & a folder with dividers

Local heritage – Sir Isaac Newton was the greatest mathematician of his generation and was born in Woolsthorpe, Lincolnshire in 1643.



Research 5 interesting facts about Sir Isaac Newton.

LITRACY TASK

The following key skills from GCSE will be used across the A level Mathematics course.

- Factorising
- Changing the subject of a formula
- Simplifying algebraic expressions
- Solving simultaneous equations
- Surds
- Indices
- The quadratic formula
- Completing the square

Scan the **QR code** to the right and work through the **exercises** to practise the skills that you will need. The answers to each of these exercises are at the end. You should then complete the **Assessment**. This work will prepare you for a "diagnostic" test at the beginning of term, to see what knowledge you have after studying for your GCSEs.



Scan for Skills and Assessment Task

SKILLS TASK

Problem-solving is an essential part of Mathematics, and there are many opportunities to become involved in extra-curricular problem-solving activities at MV16. Try this one, using some of the skills you have practised in the skills task.

Problem: POWER STACK

Kimberly wants to define 3^{3^3} as $(3^3)^3$ but Nermeen thinks that such a stack of powers should be defined as $3^{(3^3)}$. Do their definitions lead to the same numerical value? Is the same true if 3 is replaced with some other number? How would Kimberly's and Nermeen's definitions most naturally extend to the definition of $3^{3^{3^3}}$? Do their definitions lead to the same numerical value? Is the same true if 3 is replaced with some other number?

Studying A level Mathematics helps students develop a logical approach to problem-solving, as well as their mathematical knowledge and skills. It is useful preparation for a wide range of degree courses and apprenticeships.

Research and list 5 mathematics-based **careers** that may interest you.

CAREERS TASK

PROBLEM-SOLVING TASK