


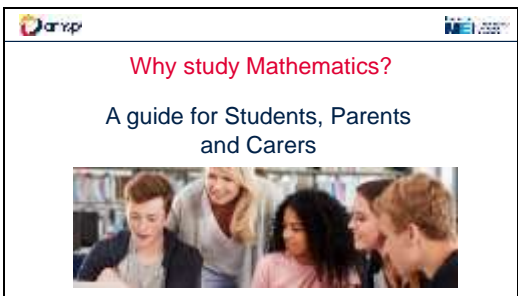

## Why Study Maths?

### Transcript for video - What are the options after studying post-16 maths?

The transcript below is for you to use if you would like to record your own school specific version of the materials.

The contents of the video are based on the information in the comprehensive Why Study Maths? presentation. The presentation is available for you use and share with students and parents to promote level 3 maths courses. It can be downloaded from <https://amsp.org.uk/resource/why-study-maths>

For more details about the work of the AMSP visit [www.amsp.org.uk](http://www.amsp.org.uk). If you would like copies of the **Maths - Opening the door to your future** leaflet sent to your school, please contact the AMSP admin team: [admin@amsp.org.uk](mailto:admin@amsp.org.uk)

Slide Number	Transcript
Slide 1 	Hello and welcome
Slide 2 	In this video from the Advanced Maths Support Programme we will be..
Slide 3 	Looking a bit further into the future and thinking about the next steps you or your child might make after school and college.

#### Slide 4



In a previous video we looked at how mathematics is relevant to many different careers. Many of these will require study/training beyond A levels, so in this video we are going to take a look at Higher apprenticeships and University degree courses and how having a level 3 maths qualification can help you access those.

#### Slide 5



<https://pixabay.com/photos/engineer-laboratory-4915427/>

<https://pixabay.com/photos/workplace-team-business-meeting-1245776/>

<https://pixabay.com/photos/studying-exams-preparation-951818/>

In recent years these have risen in popularity and availability. Designed to offer degree-equivalent qualifications they are an alternative to obtaining a degree directly from a university as they combine working with studying.

The employer covers the cost of the degree and pays you a salary while you study.

A levels or equivalent qualifications required for entry and Mathematics is also essential or desirable for a wide range of apprenticeships.

Examples of these include Actuarial, Data Science, Quantity surveying and technology apprenticeships

#### Slide 6



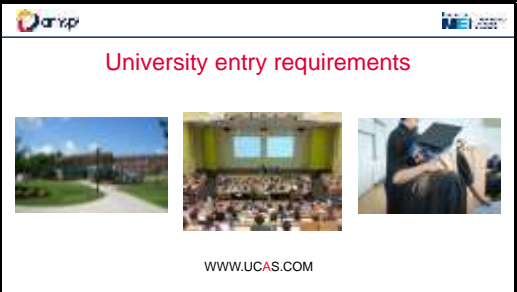
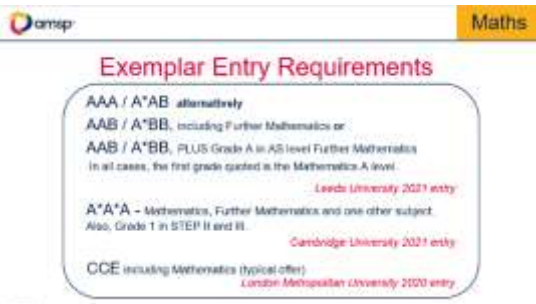
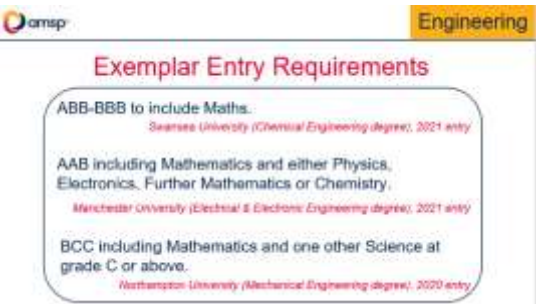
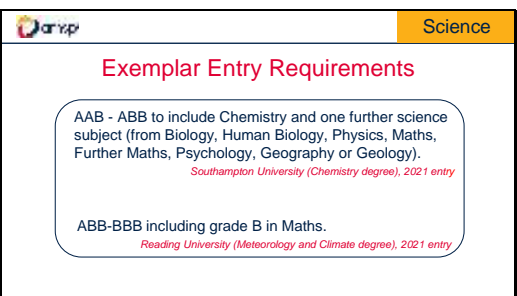
Here are two current examples.

As well as looking at employer's websites, there are dedicated websites for finding Apprenticeship opportunities and the UCAS website, where you will go to look at degree courses, also contains lots of information regarding apprenticeships and alternative routes to university.

#### Slide 7

Of course an A level in Maths is not required for every university degree course, but you might be surprised at how many courses mention needing having strong maths skills and so having a level 3 maths qualification (A level Maths, Further Maths or a Core Maths qualification) is particularly useful.

<p>Is A level Mathematics needed for entry to university degree courses?</p> <p><a href="https://pixabay.com/vectors/book-study-education-school-2943367/">https://pixabay.com/vectors/book-study-education-school-2943367/</a></p> <p><a href="https://pixabay.com/vectors/confusion-left-right-straight-311388/">https://pixabay.com/vectors/confusion-left-right-straight-311388/</a></p> <p><a href="https://pixabay.com/photos/homework-school-problem-number-2521144/">https://pixabay.com/photos/homework-school-problem-number-2521144/</a></p>	<p>A level Mathematics is also essential or desirable for a wide range of degree courses including economics, computing, social sciences and business.</p> <p>Students applying to study a degree in a STEM subject should also consider taking Further Mathematics, to at least AS level, alongside A level Mathematics. Also...</p>																		
<p>Slide 8</p> <p><b>A level Maths opens doors to leading universities</b></p> <p>Taking maths at A-level is more helpful for landing a place at a Russell Group university than studying at a grammar or private school ....There is even a maths premium for degree subjects that are not directly related to maths or which require a different skillset, such as languages and humanities.</p> <p><small>Source: <a href="https://schoolweek.co.uk/a-level-maths-is-more-useful-for-top-university-places-than-private-school">https://schoolweek.co.uk/a-level-maths-is-more-useful-for-top-university-places-than-private-school</a></small></p>	<p>According to this research by UCL, students with an A level in Mathematics are more likely to attend a Russell Group university</p>																		
<p>Slide 9</p> <p><b>A level Maths and degree courses</b></p> <table border="1"> <thead> <tr> <th>Degree subject category</th><th>% of accepted students with A levels who have studied A level Maths (entry 2016)</th></tr> </thead> <tbody> <tr><td>Mathematics (G1)</td><td>100%</td></tr> <tr><td>Physics (F3)</td><td>99%</td></tr> <tr><td>Chemical, Process and Energy Engineering (H8)</td><td>98%</td></tr> <tr><td>Mechanical Engineering (H3)</td><td>93%</td></tr> <tr><td>Pre-clinical medicine (A1)</td><td>75%</td></tr> <tr><td>Economics (L1)</td><td>70%</td></tr> <tr><td>Computer Science (I1)</td><td>57%</td></tr> <tr><td>Chemistry (F1)</td><td>34%</td></tr> </tbody> </table>	Degree subject category	% of accepted students with A levels who have studied A level Maths (entry 2016)	Mathematics (G1)	100%	Physics (F3)	99%	Chemical, Process and Energy Engineering (H8)	98%	Mechanical Engineering (H3)	93%	Pre-clinical medicine (A1)	75%	Economics (L1)	70%	Computer Science (I1)	57%	Chemistry (F1)	34%	<p>So when you get to university, how many other students on your course will have a maths A level?</p> <p>Here's a different way of looking at things. Taking a look at just look at one category, for example Economics, what this data is not saying is that 70% of Economics degrees require students to have a maths A level but 70% of the students on the course have it and it is good to be aware of this. Some courses require students to attend extra maths top-up sessions if they haven't studied maths A level.</p>
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<p>Slide 10</p> <p><b>A level Further Maths and degrees</b></p> <table border="1"> <thead> <tr> <th>Degree subject category</th><th>% of accepted students with A levels who have studied A level Further Maths (entry 2016)</th></tr> </thead> <tbody> <tr><td>Mathematics (G1)</td><td>65%</td></tr> <tr><td>Physics (F3)</td><td>38%</td></tr> <tr><td>General Engineering (H1)</td><td>28%</td></tr> <tr><td>Mechanical Engineering (H3)</td><td>26%</td></tr> <tr><td>Chemical, Process and Energy Engineering (H8)</td><td>17%</td></tr> <tr><td>Computer Science (I1)</td><td>16%</td></tr> <tr><td>Economics (L1)</td><td>11%</td></tr> <tr><td>Chemistry (F1)</td><td>8%</td></tr> </tbody> </table>	Degree subject category	% of accepted students with A levels who have studied A level Further Maths (entry 2016)	Mathematics (G1)	65%	Physics (F3)	38%	General Engineering (H1)	28%	Mechanical Engineering (H3)	26%	Chemical, Process and Energy Engineering (H8)	17%	Computer Science (I1)	16%	Economics (L1)	11%	Chemistry (F1)	8%	<p>Here's the same data for Further Maths. You can see that almost two thirds of students on maths degrees and over a quarter of students on engineering degrees have got Further Maths in addition to A level maths. Don't worry if your school doesn't offer Further Maths as the Advanced Maths Support Programme provide online tuition which you can find out about on our website.</p>
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<p>Slide 11</p>	<p>If you are considering going to University then you will soon become very familiar with the UCAS website which is probably the best place to start. When you have thought about the degree subjects that you are interested in then it</p>																		

<div data-bbox="113 96 632 387">  <p>University entry requirements</p> <p>WWW.UCAS.COM</p> </div> <p>Image: <a href="https://pixabay.com/en/college-campus-building-university-75535/">https://pixabay.com/en/college-campus-building-university-75535/</a>  <a href="https://pixabay.com/photos/graduation-graduation-day-2038864/">https://pixabay.com/photos/graduation-graduation-day-2038864/</a>  <a href="https://pixabay.com/photos/university-lecture-campus-education-105709/">https://pixabay.com/photos/university-lecture-campus-education-105709/</a></p>	<p>is important to look at the entry requirements on the different university websites to see exactly what subjects and grades are required. Let's take a look now at some University entry requirements across different subjects and how having Core Maths/A level maths or further maths fits in to that. You might want to pause the video to take a closer look at any courses that are of particular interest to you.</p>
<p>Slide 12</p> <div data-bbox="113 768 651 1070">  <p><b>Exemplar Entry Requirements</b></p> <p>AAA / A*AB <i>alternatively</i>  AAB / A*BB, including Further Mathematics or  AAB / A*BB, PLUS Grade A in AS level Further Mathematics  <small>In all cases, the first grade quoted is the Mathematics A level.</small>  <i>Leeds University 2021 entry</i></p> <p>A*A*A - Mathematics, Further Mathematics and one other subject.  Also, Grade 1 in STEP II and III.  <i>Cambridge University 2021 entry</i></p> <p>CCE including Mathematics (typical offer)  <i>London Metropolitan University 2020 entry</i></p> </div>	<p>We'll start with the most obvious – a maths degree. SO even when applying for a maths degree, as you can see in the Leeds example, taking Further Maths even at AS level can be an advantage. If you don't know what STEP is, it is a university entrance exam for mathematics. Some of the most competitive universities have entrance exams if you do well in those you could also find that you get a reduced offer.</p>
<p>Slide 13</p> <div data-bbox="113 1169 651 1471">  <p><b>Exemplar Entry Requirements</b></p> <p>ABB-BBB to include Maths.  <i>Sheffield University (Chemical Engineering degree), 2021 entry</i></p> <p>AAB including Mathematics and either Physics, Electronics, Further Mathematics or Chemistry.  <i>Manchester University (Electrical &amp; Electronic Engineering degree), 2021 entry</i></p> <p>BCC including Mathematics and one other Science at grade C or above.  <i>Northampton University (Mechanical Engineering degree), 2020 entry</i></p> </div>	<p>There are many many types of engineering and engineering degrees are very popular. A level maths is the number one subject that is required for almost all of them</p>
<p>Slide 14</p> <div data-bbox="113 1554 632 1848">  <p><b>Exemplar Entry Requirements</b></p> <p>AAB - ABB to include Chemistry and one further science subject (from Biology, Human Biology, Physics, Maths, Further Maths, Psychology, Geography or Geology).  <i>Southampton University (Chemistry degree), 2021 entry</i></p> <p>ABB-BBB including grade B in Maths.  <i>Reading University (Meteorology and Climate degree), 2021 entry</i></p> </div>	<p>Another popular choice at university are science degrees. Many of them can require 2 science A levels and you will find that Maths is included as one of those, either as preferred or required.</p>

## Slide 15

**amsp** Social Science

### Exemplar Entry Requirements

ABB. One science A level required, two science A levels preferred and may lead to a lower offer. (List of sciences includes Mathematics and Further Mathematics)  
*Liverpool University (Psychology degree), 2021 entry*


A\*AA. Applicants must have achieved an A in A level Maths  
*University of Warwick (Economics degree), 2021 entry*

Also outside of STEM degrees maths is still preferred or even required.

## Slide 16

**amsp**

### Exemplar University Alternative Offers



As well as looking at a university's typical offer investigate their alternative offers too as in some cases a qualification in Core Maths or A level Mathematics/Further Mathematics will reduce the grades required for entry. On the next few slides we will look at some examples from different Universities. If you want to look at any of the information in closer detail then go ahead and pause the video.

## Slide 17

**amsp** University of Bath

### Exemplar University Alternative Offers

Typical offer A level	Alternative offer A level
A*AA	AAA
AAA or A*AB	AAB
AAB	ABB

- Applies to all degrees that **do not require** A level Maths
- For students achieving a **grade B** in **Core Maths**
- Or grade B in AS or A level Maths or AS or A level Statistics if studied in addition to 3 subjects.

**Courses:** Architecture, Business Courses, Biosciences, Chemistry, Pharmacy, Education, Health and Sport degrees, Languages, Politics, Psychology, and Social Sciences

Here you can see the wide range of degrees where maths is not required but that having a Core Maths qualification leads to a reduced offer.

## Slide 18

**amsp** University of Bath

### Exemplar University Alternative Offers

Typical offer A level	Alternative offer A level
A*AA	AAA
AAA or A*AB	AAB
AAB	ABB

- Applies to degrees that **require** A level Maths
- For students achieving a **grade B** in **AS or A level Further Maths**

**Courses:** Civil, Chemical, Mechanical and Electrical Engineering, Computer Science, Physics, Economics and Accounting & Finance

For degrees that require A level maths, you can see here how having an AS or A level in Further Maths can lead to a reduced offer across a number of degrees also.

## Slide 19

**amsp**

### The University of York

If you achieve B or higher in Core Maths, you may be eligible for an alternative offer up to one A level grade (or equivalent) below our typical offer.

This applies to a wide range of courses including Biology, Business and Management, History of Art, Midwifery Practice, Music, Philosophy, Social Work

If you take a look at The University of York's website you will see that they give reduced offers for students with Core Maths on a vast range of courses – too many to list!



## Slide 20

**The University of Sheffield**

From September 2019, if we offer you a place on certain courses with a GCSE Maths requirement, and you're taking a Core Maths qualification, we'll make you an alternative offer equivalent to one A Level grade below the standard entry requirements for your course, subject to you achieving a specific grade in Core Maths.

Taken from <https://www.sheffield.ac.uk/undergraduate/apply/access#>

Similarly, If you take a look at The University of Sheffield's website you will see that a large number of courses give reduced offers for students with Core Maths. The reason why they do this? Well they say

*"We genuinely feel this higher level and more recent maths study has been beneficial to students, specifically within our Faculty of Social Sciences where many courses have .....a significant proportion of applied quantitative problem solving and statistics"* **Heather Macleod Jones, Senior Admissions Officer (Access) at the University of Sheffield**

## Slide 21

**The University of Sheffield**

From September 2019, if we offer you a place on certain courses with an A Level Maths requirement and you're taking AS or A Level Further Maths, we'll make you an alternative offer equivalent to one A Level grade below the standard entry requirements, subject to you achieving a specific grade in Further Maths.

Taken from <https://www.sheffield.ac.uk/undergraduate/apply/access#>

<https://www.sheffield.ac.uk/undergraduate/apply/access#>

Sheffield also gives alternative offers for students on STEM degrees who have taken Further Maths. The reason that they state for this is *"within our Science and Engineering Faculties – again we've found that students with the Maths and Further Maths combination at A level do tend to settle into their first-year maths content with ease"*

## Slide 22

**My daughter/son loves maths.  
How can they be stretched?**



Finally, what if your child (or you if you are a student watching) really loves maths and wants to study that further in particular? Well a few things that they could do would be ..

To take Further Maths as an AS or A level

Tackle problems on the NRICH website

Study for additional qualifications in mathematics such as STEP, TMUA or the MAT, which are required for entrance to some leading universities to study mathematics.

There is further information, ideas and opportunities available on our website

## Slide 23

**Other sources of information**

AMSP website [www.amspace.org.uk](http://www.amspace.org.uk)  
 Maths Careers website [www.mathscareers.org.uk](http://www.mathscareers.org.uk)  
 Apprenticeship websites e.g. [www.amazingapprenticeships.com](http://www.amazingapprenticeships.com)  
 Universities and Colleges Admissions Service (UCAS) [www.ucas.com](http://www.ucas.com)  
 Russell Group Universities [www.informedchoices.ac.uk](http://www.informedchoices.ac.uk)  
 Nrich [www.nrich.org.uk](http://www.nrich.org.uk)

And here too are some other really useful websites. May we take this opportunity to wish you well in your studies and whatever you choose to do in the future.

## Slide 24



### About the AMSP

- A government-funded initiative, managed by **MEI**, providing national support for teachers and students in all state-funded schools and colleges in England.
- It aims to increase participation in AS/A level Mathematics and Further Mathematics, and Core Maths, and improve the teaching of these qualifications.
- Additional support is given to those in priority areas to boost social mobility so that, whatever their gender, background or location, students can choose their best maths pathway post-16, and have access to high quality maths teaching.

## Slide 25



### Contact the AMSP

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- 🐦 Advanced\_Maths