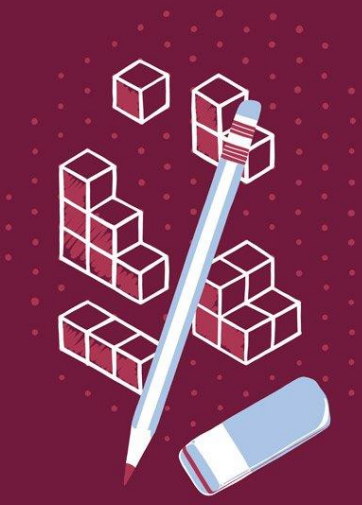
5 WORK SKILLS MATHS WILL GIVE YOU



PROBLEM SOLVING

In school: In maths, problem solving needs to be approached in a logical way. You have to identify the problem, gather the information you need and then find the right way to process and represent that information. It isn't all about numbers and figures, sometimes you'll use letters for more abstract...

NUMERACY

In school: Numeracy means understanding and being able to work with numbers. It's fundamental to the study of maths. But it's also about how you use numbers in everyday life, whether that's to work out how long you have to wait until the next bus arrives or how much change you should get in shop.

DATA ANALYSIS

In school: You'll use diagrams, graphs, tables and charts to explore a dataset and look for trends or outliers within that data. Skills like calculating averages and standard deviation will help you interpret the numbers in front of you.

PRESENTATION

In school: It isn't enough to simply understand how to use maths. You need to be able to explain your findings clearly, sometimes to people who aren't as experienced as you. You'll need to present ideas, numbers, equations and diagrams, and show all the steps you took to get to your conclusion.

STATISTICAL SAMPLING

In school: You will learn about different sampling techniques to gather data and when you should use them. You'll also understand the various ways statistics can be presented, including in scatter diagrams and other visual forms.

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Sources: For source data please request the information by emailing data@successatschool.org

WHERE CAN MATHS TAKE YOU?

ACCOUNTANCY

Over 840,000 people work in the UK accountancy industry. There are over 164,000 accountancy students in the UK and Ireland, with numbers growing.

Career paths: Auditor, forensic accountant, tax accountant

BANKING & FINANCE

Technology is becoming increasingly important across this industry – but **62% of employers say the digital skills gap is widening**, more than any other industry.

Career paths: Analyst, retail banker, stockbroker

ENGINEERING

The proportion of young engineers has dropped over the last decade. This means there will be **high demand for younger workers** in the coming years.

Career paths: Mechanical engineer, quantity surveyor, software engineer

INSURANCE & PENSIONS

The UK insurance industry employed nearly **280,000 people in 2016** – that's almost **a third of all financial services jobs.**

Career paths: Actuary, fund manager, underwriter

IT & THE INTERNET

People with qualifications in information technology have **one of the highest rates of employment in the UK.**

Career paths: A.I. programmer, forensic technology associate

EMPLOYER

gsk do more feel better live longer

GSK needs strong problem-solvers with great analysis and logical reasoning skills, from scientists and engineers to finance analysts. Studying maths is a sure way to develop these skills.

EMPLOYER

AON Empower Results®

Aon needs apprentices with analytical and numerical skills to assess and predict risk across a range of areas, from life expectancy to natural catastrophe. Maths will enable you to decipher and interpret complex information, to model risk and plan for the future.

EMPLOYER

JAGUAR LAND ROVER

The problem solving and core skills you learn in maths can be applied to develop engineering or digital technology to make driving smarter, safer and cleaner. On Jaguar Land Rover apprenticeships you'll learn how to use these skills as an engineer or digital technology professional.

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Data sources: [1]https://www.engineeringuk.com/media/13556/enguk_report_2017_synopsis.pdf; [2]https://www.hesa.ac.uk/news/11-01-2018/sfr247-higher-education-student-statistics/subjects (Fig. 13); [3]No of workers: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentbyindustryemp13 (May 2018), No of new rail jobs: https://successatschool.org/advocatedetails/1947/careers-in-rail (YRP); [4]No of workers: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentbyindustryemp13 - May 2018, No of businesses: https://www.statista.com/topics/3797/construction-industry-in-the-uk/; [5]New jobs: http://ec.europa.eu/social/BlobServlet?docId=14107&langId=en (UK 2011 roadmap references here), No of workers: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/; [6]https://www.edfenergy.com/sites/default/files/jobs-of-the-future.pdf (p.4) employmentandemployeetypes/datasets/employmentbyindustryemp13 (May 2018)

Careers in Maths

You might already be thinking about your future, but have you thought about the part maths could play? Maths opens up a world of possibilities and expands your choices in the future. No matter how the world changes, maths will always be at the heart of life. Your future has some very attractive possibilities if it involves maths. **Quite simply, maths not only helps you understand the world, it also opens up a world of opportunities!**

With maths, you're really learning two things. One is the useful ways that people have developed to make life easier for themselves. For example, knowing area formulas is a lot easier than drawing tiny squares on everything and counting them all. Once you know the formulas and facts, you can use them to help you in everyday life with things like buying enough paint, dyeing your hair, or choosing a good bank account.

If you have an idea of what you want to do later in life, it's a fair bet maths will be useful for that as well. With a maths qualification you could be involved in developing new types of mountain bikes, computer animation, music technology, mobile phones and protecting the environment for future generations. Mathematicians also work in banking, law and publishing. Even ambitions that don't directly relate maths can benefit from it, because the second thing you learn from the subject is a way of thinking.

Maths teaches you to think logically. This can help make you better at problem-solving – not just maths problems but anything life may throw at you. Solving problems is satisfying, useful and highly valued – and so is maths. Maths gives us the chance to make the world a better place. So whichever career path you decide is best for you keep your options open with maths.

Jobs directly related to Maths include:

- Astronomer
- Chartered accountant
- Data analyst
- Investment analyst
- Secondary school teacher
- Software engineer
- Statistician

Jobs where Maths would be really useful include:

- Financial manager
- Financial trader
- Game designer
- Insurance underwriter
- Meteorologist
- Quantity surveyor
- Software tester

Typical employers

There's a demand for mathematicians and statisticians across a range of sectors. Mathematicians work in the petroleum and nuclear industries, medicine and health, IT, business consultancy and operational research, space science and astronomy, as well as many forms of engineering and different government departments.

Typical employers include:

- the NHS
- educational establishments
- the pharmaceutical industry
- IT companies
- engineering companies
- insurance companies
- market research and marketing companies
- finance, banking and accountancy firms.

Skills for your CV

- designing and conducting observational and experimental studies
- investigating, analysing and interpreting data, finding patterns and drawing conclusions
- information technology
- approaching problems in an analytical and rigorous way, formulating theories and applying them to solve problems
- dealing with abstract concepts
- presenting mathematical arguments and conclusions with accuracy and clarity

You also develop key general skills that all employers expect, including:

- communication skills
- time management
- organisational skills and working methodically and accurately
- decision-making skills
- self-management
- teamwork and the ability to work independently.

Studying Maths at university – topics you'll cover

Typical first year topics include:

- calculus
- algebra
- analysis
- mechanics
- probability
- statistics
- geometry
- vectors
- computational maths.