

# Careers in Maths

**MATHEMATICS**

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**careers using mathematics**

science	banking	buying
construction	statistics	teaching
accountancy	insurance	health sciences
economics	actuarial work	administration
pharmacy	bookkeeping	stockbroking
engineering	astronomy	surveying
retail and sales	management	meteorology
air traffic control	architecture	cyber security
industrial design	sound technology	market research
network management	investment analysis	medical technology
transport and logistics	software development	computer games design



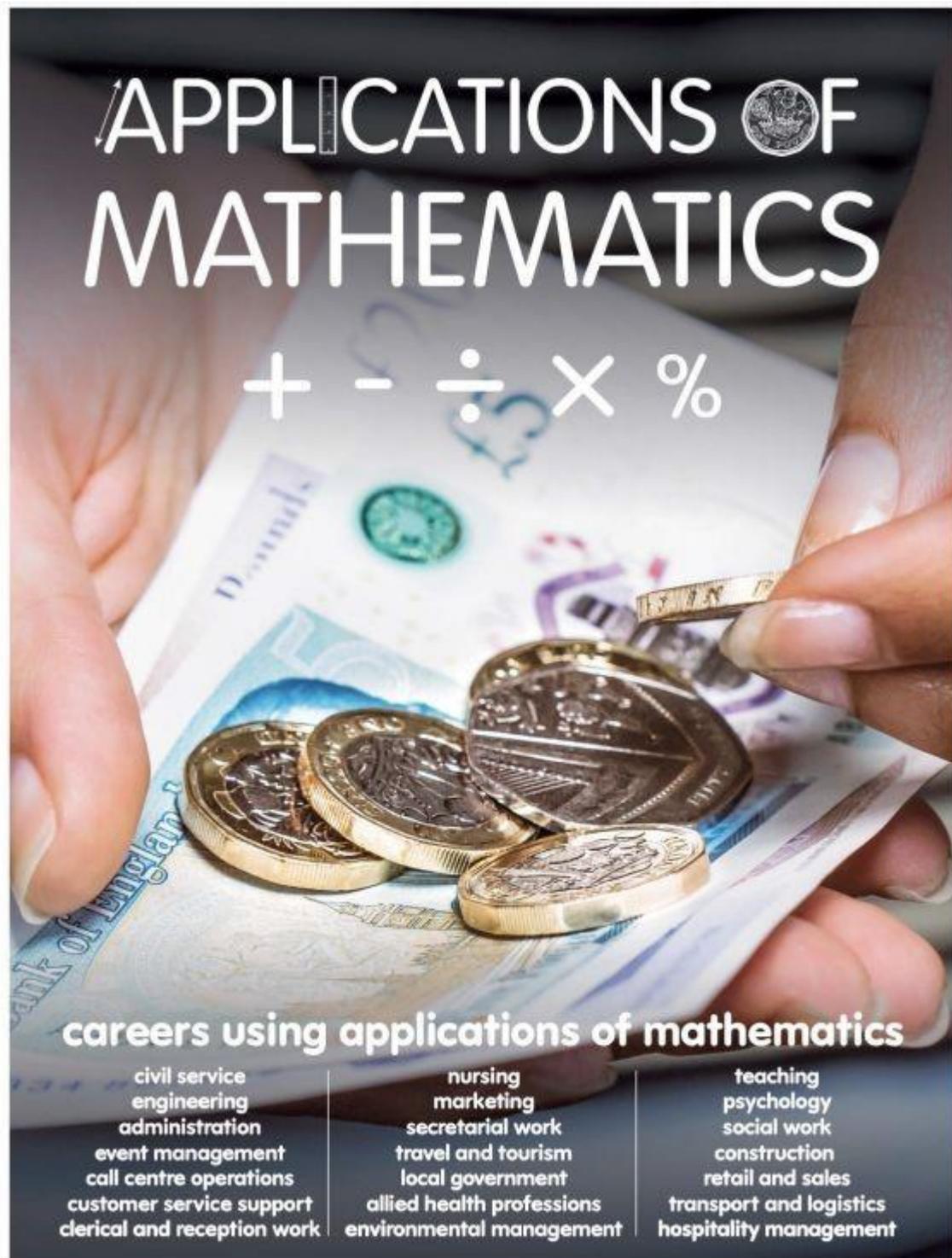
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# Careers in Maths



**APPLICATIONS OF MATHEMATICS**

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**careers using applications of mathematics**

civil service engineering administration event management call centre operations customer service support clerical and reception work	nursing marketing secretarial work travel and tourism local government allied health professions environmental management	teaching psychology social work construction retail and sales transport and logistics hospitality management
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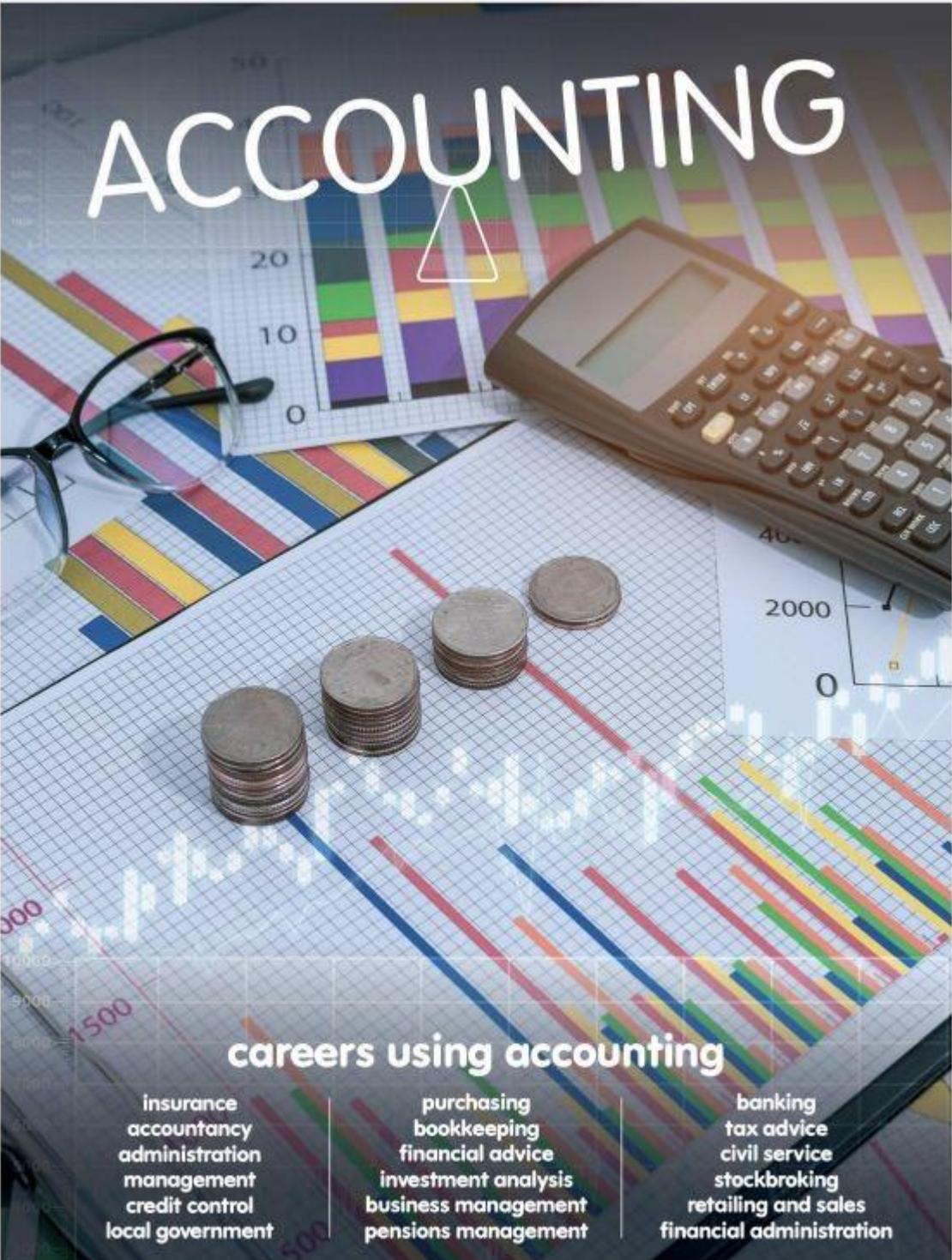
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# Careers in Maths



**ACCOUNTING**

**careers using accounting**

insurance accountancy administration management credit control local government	purchasing bookkeeping financial advice investment analysis business management pensions management	banking tax advice civil service stockbroking retailing and sales financial administration
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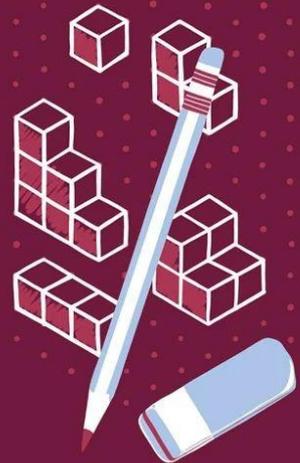
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# 5 WORK SKILLS MATHS WILL GIVE YOU



## 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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to learn more.

## 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

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### Jobs where Maths would be really useful include:

- Financial manager
- Financial trader
- Game designer

- Insurance underwriter
- Meteorologist
- Quantity surveyor

### **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.

## **Apprenticeships in Maths**

Financial services apprenticeships are much more than simply money management

Financial services deliver the bank accounts that protect our personal finances, the loans that we obtain to set up businesses, the mortgages we use to buy our homes, the insurance policies we take out to protect our cars, and the pensions that preserve our way of life in old age.

The provision of all of these services requires a workforce of highly skilled professionals dedicated to excellent customer service, ethical business and strict compliance with regulations. Above all, to work in this industry, you must be committed to preserving the rights of the consumer and providing unparalleled service in a challenging fiscal environment. Financial services apprenticeships offer a solid, accessible route into a financial services career, in banking, investment, insurance and pensions, at organisations ranging from the high street branches of banks to global investment management firms.

You'll gain many transferable skills, including teamwork, project management, problem solving and communication, which are all highly valued by employers.

There is an increasing number of apprenticeships in this sector, reflecting the growth of these services and the need for highly skilled professionals. Actuaries are needed to develop financial models, using their mathematical skills to measure the probability and risk of future events, and their financial impact on a business or individuals. Professional economists are also needed to produce rigorous, relevant and impactful economic analysis to drive decision-making.

Don't forget to check out the range of accountancy, credit control and taxation roles on offer, careers that are constantly in demand, with companies seeking skilled professionals. <https://apprenticeshipguide.co.uk/apprenticeship-category/industry-sectors/financial-services-apprenticeships/>  
<https://www.apprenticeships-in-sussex.com/>

# APPRENTICESHIPS LINKED TO MATHS

- AEROSPACE ENGINEER
  - ASSISTANT ACCOUNTANT
  - CHARTERED SURVEYOR
  - CIVIL ENGINEER
  - CLINICAL CODER
  - COMPLIANCE & RISK OFFICER
  - DEBT ADVISER
  - FINANCIAL SERVICES  
PROFESSIONAL
  - FIRST OFFICER PILOT
  - INSURANCE PROFESSIONAL
  - PROFESSIONAL ECONOMIST
- AND MANY MORE!**



Interested in apprenticeships, but not sure what to do next? Take a look at our 'What Now?' guide...  
[www.amazingapprenticeships.com](http://www.amazingapprenticeships.com)

