

10 JOBS IN MATHS

Whether it's designing shopping malls or tracking customers' buying habits, you can cash in on a career with maths



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JOB: AIR TRAFFIC CONTROLLER
MATHS BEHIND IT: Geometry and calculus help to manage planes at take-off and landing, and to monitor aircraft as they travel the skies.

#5 HIGH FLYER



#1 STREET CRED

JOB: URBAN PLANNER
MATHS BEHIND IT: Urban planners use geometry to determine the best location for shopping malls, and the homes, streets, utilities and public amenities that feed into them.



#2 BUILDING BUZZ

JOB: ARCHITECT
MATHS BEHIND IT: From initial design to detailed blueprint and estimating the cost of a build, maths is an architect's best friend. It is also vital for identifying potential structural flaws.



#6 OUT OF SIGHT

JOB: OPTOMETRIST
MATHS BEHIND IT: Precise measurements of the eye are used to calculate the types of lenses people need to correct their vision.

TREND TRACKER

JOB: MARKET RESEARCH ANALYST
MATHS BEHIND IT: Analysts use algorithms to identify shoppers' buying patterns, including how they buy, where they buy and what they buy.

#7

#3 WATER WISE

JOB: HYDROLOGIST
MATHS BEHIND IT: These aqua engineers calculate how much water the buildings need, the pressure it needs to be at, and where it can be pumped from.



#4 TOUR GUIDE

JOB: CARTOGRAPHER
MATHS BEHIND IT: This map-maker uses algebra, calculus and trigonometry to create virtual indoor maps displayed on locator stations throughout the mall.



#9 COOL DESIGNS

JOB: ARTIST
MATHS BEHIND IT: An artist uses maths to calculate dimensions, such as object spacing, angles and shapes, to make sure an image looks as appealing as possible.



#8 BUYER'S MARKET

JOB: PURCHASING AGENT
MATHS BEHIND IT: This agent ensures a business has the goods and services it needs to operate and must negotiate the best price for them, so they must be up-to-date on price trends.

#10 MAKES SCENTS

JOB: CHEMICAL ENGINEER
MATHS BEHIND IT: This engineer calculates the making, combining and testing of compounds that will create a new fragrance, eyeshadow or lipstick.



DISCOVER CAREERS WITH MATHS

Maths is used in hundreds of careers in sports, retail, architecture and more. It's critical to new careers like UX designer, 3D animators and data scientists – plus, it gives you the problem-solving skills you need for any career.

GET MORE STUFF!

Grab the *Careers with Maths* e-mag free online, or go to CareerswithSTEM.com to find more career ideas and browse hundreds of cool, creative study options.



DISCOVER MORE CAREERS WITH MATHS! VISIT CAREERSWITHSTEM.COM FOR INSPIRING STORIES, AMAZING PEOPLE, INTERACTIVE QUIZZES AND MORE.



5 WAYS MATHS IS USED IN REAL LIFE!



4 FORENSIC SCIENTIST
Just like the stars of TV's CSI, forensic scientists solve crimes by analysing DNA samples, blood spatter patterns and much more.

HOW MATHS IS USED
Geometry and trigonometry is vital for blood pattern analysis; statistics and probability come to the fore when matching DNA patterns.

1 CRYPTOGRAPHER
From protecting military and financial data to chasing digital crooks, cryptographers write algorithms to mask information and unmask cyberterrorists.

HOW MATHS IS USED
Modular arithmetic helps create "digital padlocks" and keys; algebraic geometry is the basis of "elliptic curve" cryptography; abstract algebra protects classified information.

2 FOREIGN EXCHANGE TRADER
In seconds, you can decide how millions of dollars are spent. Foreign currency traders buy, sell and invest in currencies and use maths to quickly spot inefficiencies in the markets.

HOW MATHS IS USED
Statistics and probability help traders spot market gaps. Algebra, trigonometry and calculus let traders work out risk.

5 NURSE
Nurses are at the frontline of health care in hospitals, clinics and in the community.

HOW MATHS IS USED
Percentages, fractions, calculations and ratios are part of the daily work of nurses, who are constantly monitoring drug dosages based on factors such as a patient's weight.

3 METEOROLOGIST
Accurate and timely weather forecasts are critically important for emergency services delivery; preparation for extreme events; and safe aviation.

HOW MATHS IS USED
Probability and statistics assess weather; trigonometry helps predict location and movement.



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4 cool careers that use maths

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DANIEL PELCHEN

#1 FOOTY FANATIC

I always enjoyed dealing with numbers, but I came into my element when I found them in something I was passionate about – football. Sports analytics is one area that will grow exponentially in the next 10 years. As a performance analyst at Collingwood Football Club, I monitor the stats of more than 3000 players each year and indicate to the recruiters who is performing well. I love coming up with models that recruiters can use when making crucial decisions. It's so rewarding when they draft a player I've 'flagged' through my work.

BACHELOR OF COMMERCE (HONOURS)/PHD SPORTS ANALYTICS. DEAKIN UNIVERSITY

RECRUITING ASSISTANT. COLLINGWOOD FOOTBALL CLUB

PERFORMANCE ANALYST. COLLINGWOOD FOOTBALL CLUB

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JASMINE TAN

#2 RISK TAKER

I got switched on to numbers at high school. I love that maths is about thinking through problems and being able to solve things logically. After graduating from university, I worked in fund unit pricing, actuarial analysis in super, wealth management

products and insurance. Maths is fundamental – it impacts the way people look at problems, solve issues and build on society. With everything moving to data analytics, maths and understanding the way systems work is more important than ever.

BACHELOR OF MATHEMATICS/FINANCE. UTS

FUND ACCOUNTANT. COMMONWEALTH BANK. SYDNEY

ACTUARIAL ANALYST. RICE WARNER. SYDNEY

CONSULTANT – RISK + REGULATION CONSULTING. PWC. SYDNEY



SAM CLIFFORD

#3 BIG CAT CRUSADER

At the moment, I'm researching jaguar populations in the Peruvian Amazon. My team is using maths to create a statistical model of the geographical features jaguars prefer to live, feed and move in. We also have photos and 3D videos of the jungle, as well as reports from local villagers of jaguar sightings to get the best results. By asking local people, you

can better measure where the jaguars are. You can't just walk in to the jungle and stumble across a family of big cats. I've been involved in environmental politics for many years and solving important problems is really rewarding. I want to use my maths skills – whether that be through activism or professional research – to help save the planet and to make a difference.

BACHELOR OF APPLIED SCIENCE/MATHS (HONOURS). QUT

PHD MATHS. QUT

POSTDOCTORAL FELLOW AT THE SCHOOL OF MATHEMATICS. QUT

RACHAEL BARNES

#4 HIGH FLYER



Maths is where it's at, and if you learn it, you're indispensable. Mathematicians and engineers who understand how a piece of technology or software is built are in huge demand. So knowing how to go from the blank piece of paper to a bridge or an aircraft

is a great skill to have. I work as a flight operations engineer at Virgin Australia and I love doing anything that involves space, aircraft and numbers. I get a real kick out of knowing I'm doing something that few people do, or will ever understand.

BACHELOR OF ENGINEERING (MECHANICAL/AEROSPACE)/SCIENCE (MATHEMATICS). UQ

CONSULTANT AERONAUTICAL ENGINEER. AIRLINE TECHNICAL SERVICES. REDCLIFFE. QLD

FLIGHT OPERATIONS ENGINEER. VIRGIN AUSTRALIA. BRISBANE