



# Mega Maths Day 2021

For Year 9-10 Students



Mega Maths Day engages with Year 9-10 students who need to make choices about what kind of mathematics to do in senior school. The program has been designed to inspire these students with mathematics and showcase a variety of disciplines and careers that require mathematics.

## Timetable 2021

Start	End	Activity
9.00am	9.20am	Arrival and Registration
9.20am	10am	Mathematics & You!
10am	11am	Workshop A
11am	11.15am	Morning Tea
11.15am	12.15pm	Workshop B
12.15pm	1.15pm	Lunch
1.15pm	2.15pm	Workshop C
2.15pm	2.30pm	Closing

**9AM-2.30PM**

**\$22 per student (inc GST)**

No matter what your students choose to do in the future, maths will be a part of it: from maths models that help predict which latest fashion items will sell out, to calculations that allow you to build bridges, to statistics that show what people think of a business, to computations that help in the understanding of diseases.

Your students will discover how maths is involved in pretty much every area of life at Mega Maths Day. Year 10 is a key time when your students are choosing their future direction, so give them the opportunity to find out just how important a solid background in maths is for a huge array of disciplines and careers. Your students will be inspired by how maths studies will open doors in their future during this Mega Maths Day full of workshops showcasing the importance of maths in a variety of settings.

Mega Maths Day will show your students how magnificent, marvellous and monumental maths is!

[sydney.edu.au](https://sydney.edu.au)

### Spreading Disease

Join us in the computer lab for a highly topical investigation of the mathematics behind the spread of disease. Derive the calculus equations behind the growth and decline of disease spread and create models in our software programs. This workshop is great for mathematically gifted classes who are looking for a challenge.



### Bee Gone!

When bees move to a new nesting site, they communicate the quality and location of new sites through a waggle dance. In this game developed by University of Sydney researchers, we'll explore what mathematics can tell us about how the colony is able to come to a communal decision based only on individual bees' waggle dances.



### Calculating Creepy Crawlies

Take a tour of organic matter and look at what is lurking in the leaf litter. Students will find out how agricultural and environmental scientists measure the biodiversity and abundance of species. We will consider how invertebrates influence the soil and apply some simple statistics to help us understand our dabbling in the detritus.



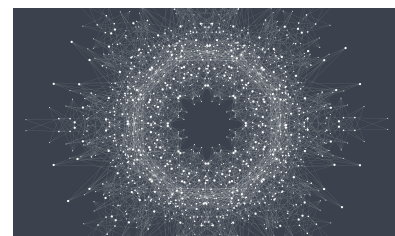
### Paying for Predictions

With our changing climate, regions are having to deal with increased risks of droughts and floods. In this semi-corporative game, students will try to manage the flood risk in their region, relying on their knowledge of probability to make the best choices.



### How to Estimate Anything

How many hairs are there on a human head? What is the probability of intelligent life elsewhere in the Universe? What is the GDP of a small nation? Remarkably, it is possible to answer these questions more-or-less accurately, with minimal information. Learn this valuable skill with the School of Physics, using a variety of examples from the sciences and humanities.



## Mega Maths Day 2021

Classes can choose three choices!  
Continued...

### Crystals Up Close

Why do crystals grow into such strong geometrical shapes? Join us in the chemistry labs as we take a deep dive into what is happening in crystals at the molecular scale and what molecular shapes have to do with crystalline growth.



### Determining the Speed of Light

Learn the real meaning of “electromagnetic radiation” in this workshop as you use the permittivity and permeability of free space to calculate the speed of light! Roll up your sleeves to take electrical measurements in the physics dry labs and be ready for some challenging calculations.



## REGISTRATIONS

Check the Mega Maths Day webpage for dates and how to register for the program.

<https://www.sydney.edu.au/science/industry-and-community/community-engagement/mega-maths-day.html>

We will contact you after you register to double-check your student numbers, organise quotations and invoices for you, and your three workshop preferences. We will also need:

- A Student Roll for WHS
- Media/photography permissions for each student

### Questions?

Contact Caitlin Fisher and Claudia Zhang at [science.alliance@sydney.edu.au](mailto:science.alliance@sydney.edu.au) or 0421 363 219. Please do leave a message if you aren't able to get hold of us straight away and we will get back to you.

## School Programs Terms and Conditions

By registering to this event I represent to the University of Sydney ("University") that I have read, understood, and agree to the terms and conditions of registration for a particular cohort of students for a Schools Program ("Program") as set out below:

- The University will hold the requested number of places. If circumstances change or student numbers change, I understand that I am required to inform the University by email to [science.alliance@sydney.edu.au](mailto:science.alliance@sydney.edu.au) as soon as possible. The final date to make changes is 10 business days before the booked session.
- Student numbers will be finalised 10 business days prior to a booked session. There will be a cost (incl. GST) per student for each activity and this cost will be agreed on at the time of booking.
- For online payment facility using a credit card at time of booking, a receipt will be provided upon payment. For pay later facility, I understand that I will be invoiced for the number of students confirmed 20 business days before the booked session and payment should be made to 'The University of Sydney'.
- If a booking is amended or cancelled less than 10 business days prior to the booked session, the session fee is non-refundable.
- The University may consider a request to change sessions and will endeavour to facilitate a reasonable change if requested more than 10 business days prior to a booked session, however, it cannot guarantee that a change may be made. If no change is possible and the requisite 20 business days notice has been provided, a full refund will be issued.
- Refunds will not be given for non-attendance or partial attendance, and make-up sessions will not be provided.
- The University reserves the right to alter any of the arrangements for the Program (including the venue and staff participating) and to cancel the Program, although every effort will be made to provide the Program in a manner similar to that published. If the Program is not held for any reason then the University of Sydney's liability is limited to the registration fee only.
- I acknowledge that the Program may involve activities that are potentially dangerous and I agree to abide by all directions of the University including its employees agents, contractors and volunteers.
- I warrant that I have obtained consent to attend from the parents and guardians of all students attending the Program.

[sydney.edu.au/science/outreach](https://sydney.edu.au/science/outreach)

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**For more information**

**School Programs Officer**

**Partner Engagement and Outreach, Faculty of Science**

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