



National Mathematics Summer School - January 2025

The National Mathematics Summer School (NMSS) is a two-week summer school for approximately 64 gifted mathematics students from around Australia. The program is run in January in Canberra, by AAMT and the Australian National University (ANU). It is aimed at Year 11 students who will complete NMSS before the start of Year 12.

Further Information and dates for NMSS 2025 will be available in about July 2024.

Further reflections by former NMSS participants

Sif Svendsgaard 2021

The social aspect played such a big part of it as well. There were more than 75 people there from all states, all with a similar interest within mathematics, which was a whole experience in itself. Many of them I still keep in contact with. Through my experiences at NMSS, it helped me to realise which area of maths I wanted to proceed further with in the future. So if you have even the slightest love for maths, puzzles or being mentally challenged, I cannot recommend NMSS enough.

Arlo Taylor 2023

Last year I was fortunate enough to be invited to attend the 2023 National Mathematics Summer School for two weeks in January. The application process involved sharing my mathematical achievements and writing briefly about why I would like to attend, and my maths teacher and school maths department completed a form in support of my application. I flew from Hobart, meeting the other Tasmanian attendee at the airport, and the camp was held at the Australian National University in Canberra. We stayed on campus in a residential college near the lecture hall in which our lessons were held each day.

The academic program was well supported, with lecturers, tutors, and guest speakers from universities around Australia, as well as mathematics graduates working in industry. Every weekday morning after breakfast, we attended a lecture on number theory, followed by a tutorial. We then went back to the residential college for lunch. After lunch we had a second lecture and tutorial on topics including algorithms and projective geometry. We were given daily problem sets to work on in tutorials, though many of us continued to work on these in our spare time for fun. The questions in these problem sets were more about creativity and discovery than getting the right answer. After dinner, we were given time for solo study sessions.

Alongside the engaging academic program were numerous social activities designed to help us get to know each other and have fun. These activities were not only supported by the organisers and tutors, but also by the 'experienced group' – ten students from the previous NMSS who were invited back to engage in the next stage of the academic

program, as well as mentor the other students. These activities included maths relays, game shows, and other games.

On the weekend, we were given the opportunity to visit a range of places off-campus, including Questacon, Parliament House, and the National Museum. On Saturday, I chose to go to the National Art Gallery, and on Sunday I went to the cinema and visited the botanical gardens with a few of my peers. On the final Friday, there was a formal dinner and concert, which included many students singing, playing instruments, and acting.

NMSS 2023 was an incredible experience that I am immensely grateful to have been a part of. Since returning, not only have I kept in touch with the new friends I made, but the camp, and the academic mentors there, have shaped my future goals, and as a result I will be studying mathematics at ANU next year. I am thrilled to have also been invited back to participate as a member of the experienced group in January 2024. If you are considering applying to attend NMSS, I cannot encourage you strongly enough!

Ben Stankovich 2023

NMSS might be about mathematics, but my experience was defined by the people. First meeting Arlo on the flight from Hobart, then many more in Sydney, and finally the rest of the group in Canberra were all such lovely moments. Everyone I met was kind, funny, and interesting, and I fondly remember all the moments and conversations we shared. It was really great to have such an excellent group of people to be around and talk to, both about maths and about everything else. And it wasn't just my fellow students: the staff were all kind and helpful, with backgrounds that were really interesting to discuss.

The mathematical content of NMSS was excellent. Both the structure and the content is quite different to the maths that is taught in schools, which made it interesting and exciting; not at all like being at school, with a strong sense of discovery and exploration. I'd hate to spoil any of the content for anyone, but all of the lectures were really interesting and made connections that felt both intuitive and profound, and were delivered with clarity, energy, and humour.

Each lecture was followed by a tutorial, where we worked on problems related to the content of the lectures in a small group. But rather than simply applying what we'd learned, the intention of the problem sets was to make us really think about what we'd learned and synthesise and get a stronger glimpse of the underlying beauty of the mathematics we were studying. Our tutors did a great job of nudging us towards seeing this beauty without spoiling the experience of discovering things for ourselves, and created great opportunities for us to connect with the other students in our tutorial group, which made thinking about the tough problems more enjoyable and giving us excellent opportunities for connection.

All of the time spent doing maths was great, but just as fun was all the time outside of it. The conversations over meals with fellow students and staff are fond memories of mine, as are the fun of board games, quizzes, high-intensity Countdown sessions, and the paranoia and thrill of Assassins. The final concert capped this off in a really lovely way: touching and serious performances like Arlo's, and sillier (but just as sweet) ones like the tutors'. Getting on the bus the following morning was emotional, but I'm so glad for my time at NMSS.

I'm excited to be going back again in 2024 as an experienced group student or an 'EG'. I can't recommend NMSS enough to anyone who might be considering applying. It's a really great experience filled to the brim with fantastic people.

Just watch out for the scorching weather of Canberra in summer, which is unlike anything Tasmanians has ever seen!