Northmead Creative and Performing Arts High School

HPGE Spotlight

Edition 1, April 2025

Ms Kirsty Allen, HPGE Coordinator

Welcome to the HPGE Spotlight!

Each month, this newsletter shines a light on the incredible work happening across our school in the High Potential and Gifted Education (HPGE) program. We're proud to showcase the dedication of our teachers, the creativity, imagination, and innovation of our students, and the thoughtful practices that support deep thinking, challenge, and growth. From classroom projects to enrichment opportunities, the HPGE Spotlight is your window into the inspiring stories and learning journeys shaping our high-potential learners. This month, we spotlight our mathematics faculty and students.

Faculty: Mathematics

Amy Huynh (Rel. Head Teacher)
Tina Karayannis (Deputy Principal)
John D'Souza
Ritika Dhawan
Phu Hoang
Janmejoy Roy
Maurya Singal
Tom Vu

Key Dates

Bebras Challenge	1st May 2025 (HPGE only)
The International Maths Challenge	14th - 16th June 2025 (All students)

What is the Bebras Challenge?

The Bebras Challenge is an international, online competition that introduces students to the world of computational thinking and problem-solving in a fun and engaging way. Open to students from Years 3–12, the challenge involves answering a set of logic-based problems that require participants to think critically and creatively. It is designed to promote interest in computer science and develop digital literacy skills. In Australia, the Bebras Challenge is run by the Australian Computing Academy, and it takes place twice a year.

🔗 Learn more: https://www.bebras.edu.au

What is the International Maths Challenge?

The International Maths Challenge is a global mathematics competition designed to extend and challenge high-achieving students through creative and thought-provoking problem-solving. Open to students around the world, the challenge presents non-standard problems that encourage deep reasoning, mathematical exploration, and innovative thinking. It aims to foster a love for mathematics and identify talented problem-solvers in a global context.

🔗 Learn more: https://international-maths-challenge.com/

Kangourou sans Frontieres (KSF) Maths Competition.

On March 28, during Term 1, students from Years 7 to 12 participated in the Kangourou sans Frontières (KSF) Mathematics Competition. The KSF is the world's largest mathematics competition, engaging over six million students annually across more than 80 countries. It offers a unique opportunity for students to tackle intriguing, non-standard problems that foster logical reasoning, creativity, and problem-solving skills.

We are proud to acknowledge the outstanding achievements of our students in this year's KSF:

Year 7
Ujaan Kundu – Distinction Award
Haemann Kalekar – Distinction Award

Year 8
Triana Parekh – Distinction Award
Heet Patel – Distinction Award
Anthony Wu – Distinction Award

Year 9
Adithya Anand – High Distinction Award
Anna Moon – Distinction Award
Shravani Ghate – Distinction Award
Varun Gopisetty – Distinction Award

These accolades reflect the students' dedication and aptitude in mathematics. We commend all participants for their enthusiasm and commitment to challenging themselves through this prestigious competition.

Accelerated Mathematics

Accelerated Mathematics at our school is designed to cater to gifted or high-potential students who demonstrate advanced mathematical understanding and are ready for greater challenge beyond the standard curriculum for their year level. Students completing Stage 6 Mathematics early can sit their HSC examination ahead of their cohort. The results count toward their ATAR. Accelerated Mathematics can also open pathways to university-level studies in Year 12 or allow students to take on additional extension subjects or focus on other areas of interest in their final year.

The program is more than just a fast track—it's about depth, challenge, and fostering a love of learning in mathematics. Students develop critical thinking, problem-solving, and perseverance as they explore more complex content in a supportive and engaging environment.

Year 9 student Adithya Anand shares,

"The Accelerated Mathematics Program has been an excellent initiative that has helped me challenge my mathematical abilities and has motivated me to consistently strive for excellence… I have really enjoyed my experience in this class, as it creates a positive learning environment where every student can improve. As more topics are covered quickly, this allows me to explore and learn more in a short amount of time... The topics that I am looking forward to learning this year are trigonometry, logarithms and parabolas."

Fellow student Jacob Groves echoes this sentiment:

"The Mathematics Accelerated Program has been an excellent experience so far, which has helped me learn at a faster pace. It has helped me vastly improve my skills at a larger range than what we would have been learning otherwise… I have enjoyed the experience so far, as it creates a good learning environment where we can all improve and learn… We have learnt at a faster pace than the other classes, which helps us develop our skills, but the topic that I am most looking forward to is trigonometry, which we will learn about in Term 3, and I am excited to learn about calculus next year."

Through opportunities like this, our school remains committed to nurturing high-potential learners and inspiring a passion for mathematics that extends well beyond the classroom.

Year 9 PBL 'Efficiency'

During Term 1, students, as part of their Efficiency PBL Task, researched, planned and designed key elements of an energy-efficient dwelling that would reduce wasted energy usage, greenhouse gas emissions, and the demand for non-renewable energy resources. As part of the project, students also needed to plan and incorporate four energy-efficient features, including the water tank.

Students in our Year 9 HPGE mathematics classes were challenged to design a composite rainwater tank for their dwelling. Using a composite structure for their rainwater tank presented a more complex and mathematically demanding challenge for students, as it requires a deeper understanding and application of multiple mathematical concepts. Students needed to accurately calculate the volume and surface area of each individual component, and then combine those results to find the total capacity and external surface area of the tank. This means they needed to be confident in using and manipulating a range of formulas, applying their knowledge of scaling, nets, and units of measurement, and checking their calculations for accuracy.

HPGE students excel in this task by demonstrating advanced problem-solving skills, mathematical reasoning, and creativity in design. Their ability to break down complex composite shapes, apply accurate scaling, and calculate volume and surface area with precision highlights their capacity to engage deeply with challenging concepts. This task not only showcases their mathematical strengths but also their initiative, collaboration, and innovation in applying real-world thinking to a practical design challenge.

Contact Us

If you would like more information about the HPGE Program or HPGE initiatives, or if you would like to bring any related matters to our attention, please do not hesitate to contact us.

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