

COLLABORATION IN SCHOOLS

Strengthening Maths in the Classroom

By Laura Watson

Arguably M is the most important letter in STEM, with mathematics underpinning our capability to drive science, technology and engineering. Maths is also essential to industry innovation and optimisation to make sense of the opportunities offered by the age of big data.

It is little wonder then that mathematics education is a number one priority for many of our industry leaders. Their impact in the classroom is felt through funding investment, outreach initiatives and mentoring to champion the engagement of a new generation.

Collaboration with partnering schools, education sector stakeholders, community leaders, academia and industry plays a powerful role in delivery of AMSI Schools initiatives. In particular industry investment has significantly bolstered the program's impact at the education frontline, including investment by Boeing to deliver multimedia learning resources and the BHP Billiton Foundation's support of the ChooseMaths project. Partnerships with industry and academia have also been instrumental in the roll out of the project's Careers Awareness campaign and Women in Maths Network.

At a regional level, local industry champions are helping to foster mathematics engagement and careers awareness through their participation in school-based outreach events, such as ChooseMaths Days. These events help students, particularly girls, to make critical connections between mathematics in the classroom and real-life application, highlighting its value as a career pathway.

MATHS MENTOR PILOT ENGAGING GIRLS

Australian maths professionals have joined forces with AMSI Schools in a pilot program aimed at strengthening engagement of girls and women.

The 70 mentors are working with 100 Year 9 students across five states as part of the first stage of the Women in Maths Network. Industry leaders represented in the first cohort include BHP, IBM, and the Australian Bureau of Statistics.

Assigned to groups or 'circles' of 10-15 students, the volunteer maths champions are running fortnightly video-conferencing sessions to support learning and foster careers awareness. Access to an online, interactive learning platform is further stimulating discussion as a platform to ask questions, seek advice and explore career avenues.

While still in the early stages, the pilot is already resulting in unexpected collaborations beyond the classroom. The program is proving a powerful support engine for junior mentors who are benefiting from collaboration with their more experienced peers.



PHOTOGRAPHY: MICHAEL SHAW

COLLABORATION ... PLAYS A POWERFUL ROLE IN DELIVERY OF AMSI SCHOOLS INITIATIVES

Mentoring is a key AMSI policy recommendation as Australia responds to the urgent need to bolster mathematical capability, including through increased engagement of women and girls. In 2016, just 7 per cent of Year 12 girls who participated in advanced maths compared to over 12 per cent of boys.

As the Mentoring program rolls out more widely in 2018, it is hoped more schools will come on board to enable their students to benefit and help tackle the gender divide at the classroom frontline.



CHOOSMATHS Careers Awareness/Awards project officer Susan James with students at a GEM day.

MATHS ON THE MOVE: PUTTING MATHS CAREERS IN THE SPOTLIGHT

Our transport and digital careers awareness campaign set social media alight, as followers reported sightings of AMSI branded trams and buses in their capital city. The push was a follow up of the launch of the ChooseMaths Careers Awareness campaign launch.

It was exciting to see so many people engage with the campaign, with website visits spiking as Australians discovered how to be 'more than a number with maths'. The powerful adverts featured the inspiring stories of women in maths from health research and computer coding to astronomy, mining and fire management. With at least 75 per cent of Australia's growth employment sectors requiring STEM, keeping your doors open makes a whole lot of sense.

Part of the Australian Mathematical Sciences Institute's \$22 million national ChooseMaths project funding by BHP Billiton Foundation, the transport and media advertising was a fun way to keep the careers discussion alive. →



CHOOSE MATHS

AN AMSI SCHOOLS PROJECT

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I am more
than a
number

I never thought that I would be working in Medical Research, but at University I discovered a world of new areas that interested me. It wasn't an easy road but if you really want something, you'll surprise yourself with how far a bit of hard work and passion can get you.

My name is

Lyndal Henden

Read my story at

CHOOSEMATHS.ORG.AU



PHOTOGRAPHY: BIANCA TURRI

**SINCE RECEIVING
HER AWARD,
ASHLEY HAS BEEN
BUSY INVESTING
IN NEW PROJECTS
TO BENEFIT
HER STUDENTS
AND ENHANCE
LEARNING**

ELDERS VISIT CAPS OFF YEAR OF EXCELLENCE

Indigenous students at Netwon Moore Senior High School in Bunbury WA radiated excitement and pride as they demonstrated their latest maths and STEM projects to Head Elder, Dennis Jetta. The visit capped off an exciting year for the school, following Head of Maths, Ashley Stewart's top ChooseMaths Award for Mentoring Girls.

The award including \$10,000 for professional development and \$10,000 for the school's maths program, honoured Ashley's outstanding work empowering indigenous girls in maths through interactive learning.

Since receiving her award, Ashley has been busy investing in new projects to benefit her students and enhance learning. Her Year 8 indigenous boys benefited from a coding for drawing class delivered by specialists from Perth. She also used part of her prize to run a STEM project with her Year 7 indigenous girls conducting experiments and creating a bike phone charger, as well as individual solar power chargers.

Ashley recently led a STEM project with the Education Support school that is run on the Newton Moore campus. Focused on sustainability, students researched the impact of food waste on the environment, as well as creating biogas digesters to use the food waste. This was presented to the school's principal and administration team as a suggested approach manage school food waste.

The award additionally helped fund a training trip to Malaysia in November, where Ashley and a colleague completed a session with Dr Sheryl Sorby on Developing Student Spatial skills. This will help Ashley and the maths department bridge a gap for girls in relation to STEM skills.

The money also helped bring the Robogals to Newton Moore for a robotics and coding session. This was attended by 30 girls from the school's top two Year 8 maths classes.

Ashley Stewart was one of three main ChooseMaths Teacher Award winners in 2017, with NSW teacher, Keith Barnet winning Outstanding Primary Teacher and Queensland's Patricia Hosking winning Outstanding Secondary Teacher. □

A full list of the 2017 Award winners can be found at choosemaths.org.au/2017-award-winners. Further information about the project and its initiatives are at choosemaths.org.au.