

The Stepping Stones to a prosperous career

ORIGO EDUCATION EXPLAINS HOW A SOLID MATHEMATICAL EDUCATION IS KEY TO PREPARING STUDENTS FOR INCREASINGLY STRINGENT UNIVERSITY REQUIREMENTS.

In 2016, the University of Sydney revealed up to 62 degrees would require the completion of Higher School Certificate Mathematics, at a higher level than General Maths.

The new requirements, which begin in 2019, don't just apply to traditionally Maths-focused degrees such as economics, but even psychology and pharmacy. It comes off the back of a need to prepare students for future career challenges, as learning becomes increasingly focused on problem solving. According to the Foundation for Young Australians 2016 report, *The New Work Mindset*, young people will need enterprise skills to succeed in an increasingly automated and globalised workforce. Its survey found 35 per cent of Australian 15-year-olds show low proficiency in problem solving, and 29 per cent low in financial literacy. The report argued an urgent need exists for a strategy that begins early in primary school and is built consistently year-on-year.

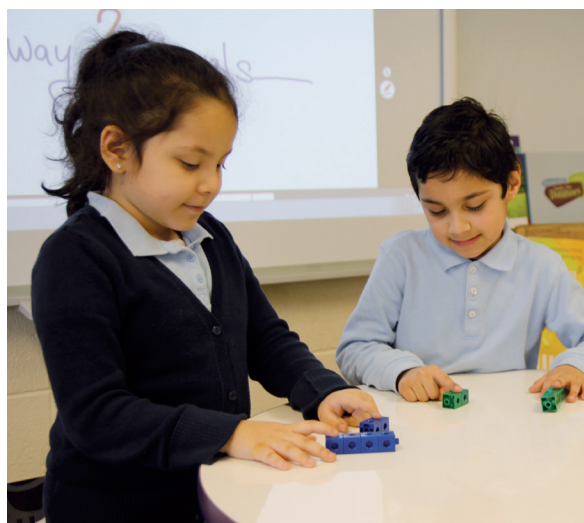
James Burnett, President of the Mathematics curriculum provider ORIGO Education, believes universities across the country have already begun responding to the new economy. He says Mathematics and problem-solving skills are increasingly becoming compulsory for a number of university degrees.

"The University of Queensland just started a whole new finance degree which is much more quantitative-based, so you can't get into it unless you have the highest level of Mathematics," James says.

"The highest earning university degrees all involve Mathematics. From computer engineering to economics and civil engineering, even marketing. If we encourage problem solving at a primary school level, then students will be

prepared for high school and able to deal with complex equations such as algebra when they get to them."

One of ORIGO's core programs is Stepping Stones. Delivered online from Foundation to Year 6, the program gives teachers a central location to access all their lesson plans, student activity pages and teaching tools. Key to the Stepping Stones structure is teaching students how to



think, rather than what to think. In this way, students build confidence, develop a deeper understanding of strategies and concepts, improve communication and collaboration and help them connect new ideas to existing ones.

And the results show, as the company's data indicates ORIGO Stepping Stones schools perform above the national average, experiencing a 24 per cent student gain in their Year 3 and 5 NAPLAN results in the past year. Further to this, more than 100,000 students across Australia are taught using the program. John Hopkins University, a world leader in education research also recently conducted a study showing ORIGO Stepping

Stones students outperformed their peers.

Stepping Stones is a comprehensive core program that provides modules of learning that include everything a teacher needs to teach Maths effectively. Each module begins with background information for teachers such as learning targets and language development. Assessments cover in-class observations, portfolio samples, check-ups, performance tasks and individual interviews.

Teachers looking to enrich their Maths lesson can also choose from a range of investigations, problem-solving activities and cross-curricula links. Most importantly, the program has professional learning videos embedded right where the teachers need them, so they can increase their own pedagogical and content knowledge of the subject.

"Applying mathematical equations to the real-world is instrumental to getting students engaged. Providing a situation with context gives it meaning. The learner will be more motivated if you focus on units of measurement they will use outside of the classroom, whether that be metres or dollars," James adds.

"Technology can answer even the most sophisticated mathematical equations, but there's no technology that will work with solving real-world problems. Our solution is to present students with the problem, and then ask them to write the equation to get it solved."

James says providing teachers with a conceptual approach to teaching is also important in the new economy, as opposed to a procedural one.

"We provide visual models, these can be pictures or concrete resources so that students understand the concepts, rather than following a procedure. The problem with procedural learning is that if you forget the procedure you have no way of re-creating it."